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**UNIVERSITY OF CENTRAL FLORIDA**  
A Member Institution  
of the  
State University System of Florida  
Orlando, Florida 32816



PEGASUS was the winged horse of the muses in Greek Mythology. He carried their hopes, their aspirations, and their poetry into the skies. PEGASUS is as futuristic as tomorrow's space exploration in our solar system and into the universe beyond. The seal also bridges the gap between the humanities and space technology.

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This public document was promulgated at an annual cost of \$1.00 per copy to acquaint the student with the program of study and the cost of attending the university.

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## COLLEGES, DEPARTMENTS AND PROGRAMS

### College of Business Administration

Dean .....	Clifford L. Eubanks
Assistant Dean .....	Wade R. Kilbride
Accountancy .....	Clarence G. Avery
Economics .....	Frederick A. Raffa
Finance .....	Wallace W. Reiff
Management .....	Richard C. Reidenbach
Marketing .....	Gordon W. Paul

### College of Education

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Assistant Dean .....	J. Nannette McLain
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Physical Education .....	John W. Powell
Secondary Education .....	Harry O. Hall
Teaching Analysis .....	David E. Hernandez

### College of Engineering

Dean .....	Robert D. Kersten
Associate Dean .....	George F. Schrader
Civil Engineering and Environmental Studies .....	Martin P. Wanielista
Electrical Engineering and Communication Sciences .....	Ernest E. Erickson (Acting)
Engineering Mathematics and Computer Systems .....	Gary E. Whitehouse
Industrial Engineering and Management Systems .....	Gary E. Whitehouse
Mechanical Engineering and Aerospace Sciences .....	J. Paul Hartman (Acting)
Engineering Technology .....	Richard G. Denning



## College of Health Related Professions

Dean .....	Owen C. Elder
Communicative Disorders .....	Thomas A. Mullin
Medical Record Administration .....	Mary J. Neill
Medical Technology .....	Marilyn Kangelos
Nursing .....	Leon E. Eldredge
Radiologic Sciences .....	M. Jo Geren
Respiratory Therapy .....	J. Stephen Lytle

## College of Humanities and Fine Arts

Dean .....	Charles N. Micarelli
Associate Dean .....	Harry W. Smith, Jr.
Art .....	Charles W. Wellman (Acting)
English .....	Richard S. Grove
Foreign Languages .....	Anthony V. Cervone
History .....	Jerrell H. Shofner
Humanities, Philosophy and Religion .....	Robert G. Flick
Music .....	J. Gary Wolf
Theatre .....	Harry W. Smith, Jr. (Acting)

## College of Natural Sciences

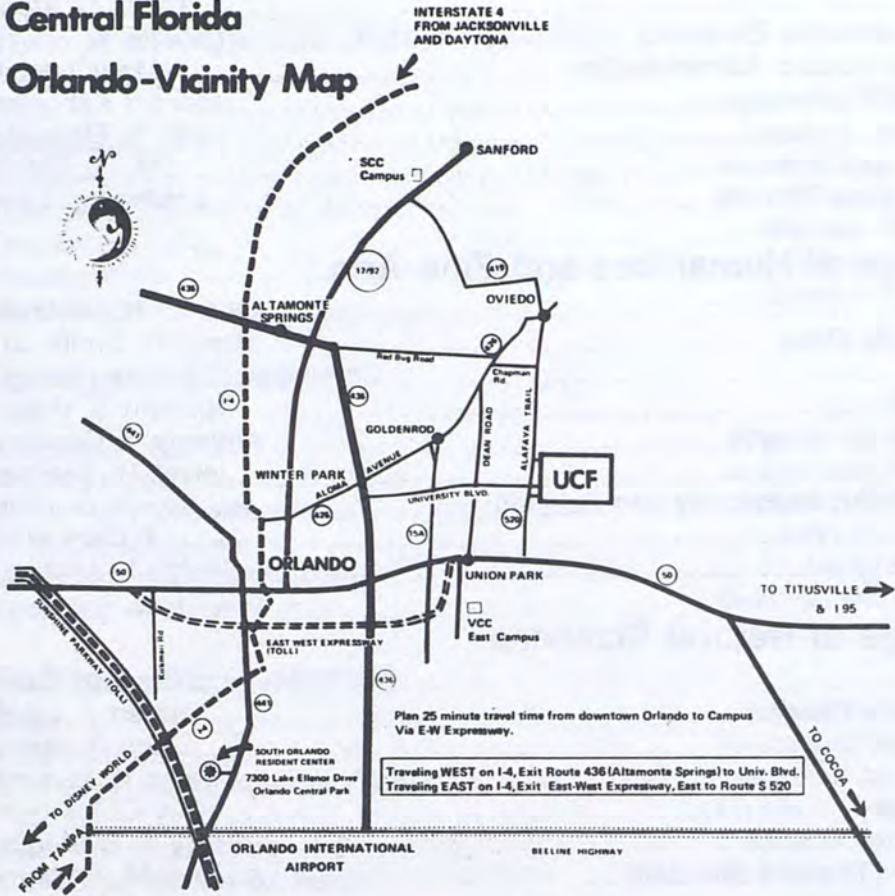
Dean .....	Bernard Ostle
Associate Dean .....	Robert J. Laird
Assistant Dean .....	John P. Idoux
Biological Sciences .....	David H. Vickers
Chemistry .....	Guy C. Mattson
Computer Science .....	Terry J. Frederick
Mathematics and Statistics .....	Joby M. Anthony
Physics .....	Jack H. Noon

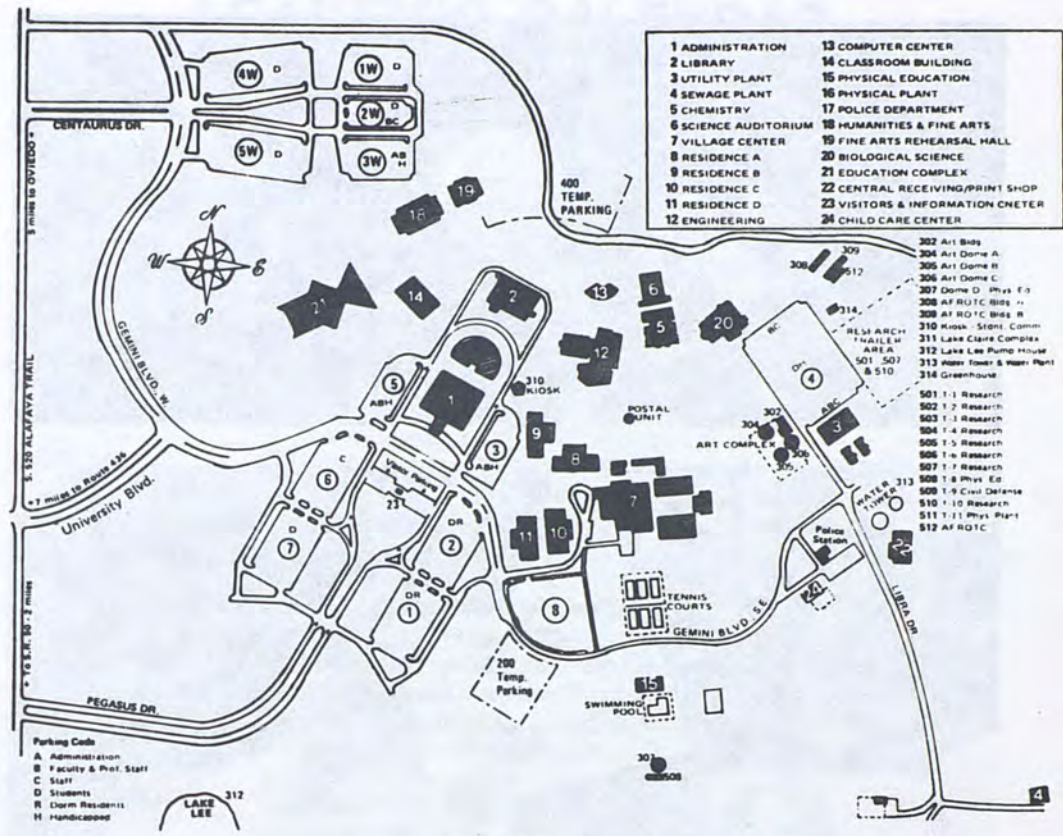
## College of Social Sciences

Acting Dean .....	Jack B. Rollins, Jr.
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Aerospace Studies .....	Louis J. Samelson
Army ROTC—Military Science .....	A. L. Wehrle
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Political Science .....	Henry Kennedy
Psychology .....	Richard D. Tucker (Acting)
Public Service Administration .....	N. Gary Holten (Acting)
Sociology .....	Charles M. Unkovic

# University of Central Florida

## Orlando-Vicinity Map





# campus map





# ACADEMIC CALENDAR

## Summer Quarter 1979

<b>MARCH 14</b>	Last day for receipt of application from International Students
<b>MAY 17</b>	Last day for receipt of regular undergraduate and graduate applications
<b>MAY 31</b>	Last day for receipt of readmission applications
<b>JUNE 9</b>	Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date
<b>JUNE 11-14</b>	Orientation and advisement for new freshmen and transfer students, and advisement for readmitted students not pre-advised
<b>JUNE 14</b>	*Registration by appointment for new and readmitted graduate, post-baccalureate, undergraduate students. Student registration will close following the last appointment. Faculty and staff will register following the above appointments.
<b>JUNE 18</b>	Classes begin for Summer Quarter
<b>JUNE 22</b>	Last day to adjust class schedule (end of Add/Drop)
<b>JUNE 22</b>	Last day for late registration (late registration runs concurrently with Add/Drop). A \$25 late fee will be assessed
<b>JUNE 22</b>	Last day for withdrawal with refund
<b>JUNE 22</b>	Last day to apply for graduation for those completing requirements end of Summer Quarter
<b>JUNE 22</b>	Last day to change from credit to audit
<b>JULY 4</b>	Independence Day holiday (University-wide)
<b>JULY 5</b>	Classes resume
<b>JULY 13</b>	Last day for removing temporary student status
<b>JULY 20</b>	Deadline for withdrawal without grade penalty
<b>AUGUST 10</b>	Last day to remove an "I" earned last quarter
<b>AUGUST 10</b>	Last day to withdraw from a course or the University
<b>AUGUST 24</b>	Classes end for Summer Quarter. Final exam given at discretion of instructor
<b>AUGUST 24</b>	Commencement
<b>AUGUST 27</b>	Grades due in Registrar's Office

\*Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

MAY	JUNE	JULY	AUGUST
1 2 3 4 5		1 2	1 2 3 4
6 7 8 9 10 11 12	3 4 5 6 7 8 9	3 4 5 6 7	5 6 7 8 9 10 11
13 14 15 16 17 18 19	10 11 12 13 14 15 16	8 9 10 11 12 13 14	12 13 14 15 16 17 18
20 21 22 23 24 25 26	17 18 19 20 21 22 23	15 16 17 18 19 20 21	19 20 21 22 23 24 25
27 28 29 30 31	24 25 26 27 28 29 30	22 23 24 25 26 27 28	26 27 28 29 30 31
		29 30 31	

# Fall Quarter 1979

- JUNE 18** Last day for receipt of applications from International Students
- AUGUST 20** Last day for receipt of regular undergraduate and graduate applications
- SEPTEMBER 4** Last day for receipt of readmission applications
- SEPTEMBER 17** Academic year begins
- SEPTEMBER 17-20** Orientation and advisement for new freshmen and transfer students not pre-advised
- SEPTEMBER 17-20** Advisement of current and former students not pre-advised
- SEPTEMBER 17-20** \*Registration by appointment for the following student classification: Graduate, current undergraduate, readmitted undergraduate, new undergraduate and post-baccalaureate. Faculty and staff will register following the above appointments. Registration will close after the last appointment
- SEPTEMBER 24** Classes begin for Fall Quarter
- SEPTEMBER 28** Last day to adjust class schedule (end of Add/Drop)
- SEPTEMBER 28** Last day for late registration (late registration runs concurrently with Add/Drop). A \$25 late fee will be assessed
- SEPTEMBER 28** Last day for withdrawal with refund
- SEPTEMBER 28** Last day to apply for graduation for those completing requirements end of Fall Quarter
- SEPTEMBER 28** Last day to change from credit to audit
- OCTOBER 19** Last day for removing temporary student status
- OCTOBER 20** Graduate record exam (at designated examination centers).  
Registration for examination must be made 4 weeks prior to this date
- OCTOBER 26** Deadline for withdrawal without grade penalty
- NOVEMBER 12** Veterans' Day Holiday (University-wide)
- NOVEMBER 13** Classes resume
- NOVEMBER 22-23** Thanksgiving Holidays (University-wide)
- NOVEMBER 26** Classes resume
- NOVEMBER 26** Last day to remove an "I" earned last quarter
- NOVEMBER 26** Last day to withdraw from a course or the University
- DECEMBER 7** Classes end for Fall Quarter
- DECEMBER 8** Graduate record exam (at designated examination centers).  
Registration for examination must be made 4 weeks prior to this date
- DECEMBER 10-13** Final examination period
- DECEMBER 14** Commencement
- DECEMBER 17** Grades due in Registrar's Office
- DECEMBER 17** Christmas holidays begin (students)

\*Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

SEPT.	OCT.	NOV.	DEC.
1			1
2 3 4 5 6 7 8	1 2 3 4 5 6	1 2 3	2 3 4 5 6 7 8
9 10 11 12 13 14 15	7 8 9 10 11 12 13	4 5 6 7 8 9 10	9 10 11 12 13 14 15
16 17 18 19 20 21 22	14 15 16 17 18 19 20	11 12 13 14 15 16 17	16 17 18 19 20 21 22
23 24 25 26 27 28 29	21 22 23 24 25 26 27	18 19 20 21 22 23 24	23 24 25 26 27 28 29
30	28 29 30 31	25 26 27 28 29 30	30 31

# Winter Quarter 1980

<b>OCTOBER 3</b>	Last day for receipt of applications from International Students
<b>NOVEMBER 26</b>	Last day for receipt of regular undergraduate and graduate applications
<b>DECEMBER 10</b>	Last day for receipt of readmission applications
<b>JANUARY 2</b>	Orientation and advisement for new freshmen and transfer students not pre-advised
<b>JANUARY 2</b>	Advisement of readmitted students not pre-advised
<b>JANUARY 3</b>	*Registration by appointment for new and readmitted graduate, post-baccalaureate, undergraduate students. Student registration will close following the last appointment. Faculty and staff will register following the above appointments.
<b>JANUARY 7</b>	Classes begin for Winter Quarter
<b>JANUARY 11</b>	Last day to adjust class schedule (end of Add/Drop)
<b>JANUARY 11</b>	Last day for late registration (late registration runs concurrently with Add/Drop). A \$25 late fee will be assessed
<b>JANUARY 11</b>	Last day for withdrawal with refund
<b>JANUARY 11</b>	Last day to apply for graduation for those completing requirements end of Winter Quarter
<b>JANUARY 11</b>	Last day to change from credit to audit
<b>JANUARY 12</b>	Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date
<b>FEBRUARY 1</b>	Last day for removing temporary student status
<b>FEBRUARY 8</b>	Deadline for withdrawal without grade penalty
<b>FEBRUARY 23</b>	Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date
<b>MARCH 7</b>	Last day to remove an "I" earned last quarter
<b>MARCH 7</b>	Last day to withdraw from a course or the University
<b>MARCH 14</b>	Classes end for Winter Quarter.
<b>MARCH 17-21</b>	Final examination period
<b>MARCH 22</b>	Grades due in Registrar's Office

\*Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

JAN.	FEB.	MAR.
1 2 3 4 5		1 2 3 4 5 6 7 8
6 7 8 9 10 11 12	3 4 5 6 7 8 9	9 10 11 12 13 14 15
13 14 15 16 17 18 19	10 11 12 13 14 15 16	16 17 18 19 20 21 22
20 21 22 23 24 25 26	17 18 19 20 21 22 23	23 24 25 26 27 28 29
27 28 29 30 31	24 25 26 27 28 29	30 31

# Spring Quarter 1980

<b>DECEMBER 27</b>	Last day for receipt of applications from International Students
<b>FEBRUARY 22</b>	Last day for receipt of regular undergraduate and graduate applications
<b>MARCH 7</b>	Last day for receipt of readmission applications
<b>MARCH 24-27</b>	Orientation and advisement for new freshmen and transfer students, and advisement for readmitted students not pre-advised
<b>MARCH 27</b>	*Registration by appointment for new and readmitted graduate, post-baccalaureate, undergraduate students. Student registration will close following the last appointment. Faculty and staff will register following the above appointment.
<b>MARCH 31</b>	Classes begin for Spring Quarter
<b>APRIL 4</b>	Last day to adjust class schedule (end of Add/Drop)
<b>APRIL 4</b>	Last day for late registration (late registration runs concurrently with Add/Drop). A \$25 late fee will be assessed.
<b>APRIL 4</b>	Last day for withdrawal with refund
<b>APRIL 4</b>	Last day to apply for graduation for those completing requirements end of Spring Quarter
<b>APRIL 4</b>	Last day to change from credit to audit
<b>APRIL 25</b>	Last day for removing temporary student status
<b>APRIL 26</b>	Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date.
<b>MAY 2</b>	Deadline for withdrawal without grade penalty
<b>MAY 26</b>	Memorial Day holiday (University-wide)
<b>MAY 27</b>	Classes resume
<b>MAY 30</b>	Last day for removing an "I" earned last quarter
<b>MAY 30</b>	Last day to withdraw from a course or the University
<b>JUNE 6</b>	Classes end for Spring Quarter
<b>JUNE 9-12</b>	Final examination period
<b>JUNE 13</b>	Commencement
<b>JUNE 14</b>	Grades due in Registrar's Office
<b>JUNE 14</b>	Academic year ends

\*Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

APR.	MAY	JUNE
1 2 3 4 5	1 2 3	1 2 3 4 5 6 7
6 7 8 9 10 11 12	4 5 6 7 8 9 10	8 9 10 11 12 13 14
13 14 15 16 17 18 19	11 12 13 14 15 16 17	15 16 17 18 19 20 21
20 21 22 23 24 25 26	18 19 20 21 22 23 24	22 23 24 25 26 27 28
27 28 29 30	25 26 27 28 29 30 31	29 30



# Summer Quarter 1980

<b>MARCH 17</b>	Last day for receipt of applications from International Students
<b>MAY 19</b>	Last day for receipt of regular undergraduate and graduate applications
<b>JUNE 2</b>	Last day for receipt of readmission applications
<b>JUNE 14</b>	Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date
<b>JUNE 16-19</b>	Orientation and advisement for new freshmen and transfer students, and advisement for readmitted students not pre-advised
<b>JUNE 19</b>	*Registration by appointment for new and readmitted graduate, post-baccalaureate, undergraduate students. Student registration will close following the last appointment. Faculty and staff will register following the above appointments.
<b>JUNE 23</b>	Classes begin for Summer Quarter
<b>JUNE 27</b>	Last day to adjust class schedule (end of Add/Drop)
<b>JUNE 27</b>	Last day for late registration (late registration runs concurrently with Add/Drop). A \$25 late fee will be assessed
<b>JUNE 27</b>	Last day for withdrawal with refund
<b>JUNE 27</b>	Last day to apply for graduation for those completing requirements end of Summer Quarter
<b>JUNE 27</b>	Last day to change from credit to audit
<b>JULY 4</b>	Independence Day holiday (University-wide)
<b>JULY 7</b>	Classes resume
<b>JULY 21</b>	Last day for removing temporary student status
<b>JULY 28</b>	Deadline for withdrawal without grade penalty
<b>AUGUST 15</b>	Last day to remove an "I" earned last quarter
<b>AUGUST 15</b>	Last day to withdraw from a course or the University
<b>AUGUST 29</b>	Classes end for Summer Quarter. Final exam given at discretion of instructor
<b>AUGUST 30</b>	Grades due in Registrar's Office

\*Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

JUNE							JULY					AUGUST								
1	2	3	4	5	6	7		1	2	3	4	5	3	4	5	6	7	8	9	
8	9	10	11	12	13	14	6	7	8	9	10	11	12	10	11	12	13	14	15	16
15	16	17	18	19	20	21	13	14	15	16	17	18	19	17	18	19	20	21	22	23
22	23	24	25	26	27	28	20	21	22	23	24	25	26	24	25	26	27	28	29	30
29	30						27	28	29	30	31		31							

# UNIVERSITY OF CENTRAL FLORIDA

The University of Central Florida, a member institution of the State University System, was formerly Florida Technological University. The name was changed by action of the Florida Legislature on December 6, 1978.

## STATEMENT OF PURPOSE

The University of Central Florida serves the people of Florida by providing undergraduate and graduate education in most general areas of study and in specifically selected technological and professional disciplines.

Baccalaureate degree programs are offered in business administration, education, engineering, general studies, health related professions, humanities and fine arts, natural sciences, and social sciences. Master's degree programs are approved in several areas of the University. Doctoral programs are available in education through an agreement with Florida Atlantic University and in engineering through an agreement with the University of Florida.

In addition to offering a broad academic program on campus, UCF offers off-campus credit courses in locations throughout Central Florida. Off-campus credit courses are listed in the quarterly class schedule published by the University and are generally taught by regular faculty members. Non-credit conferences, institutes, seminars, workshops and short courses are scheduled both on and off campus to meet the educational needs of business, government, professional, and other groups from throughout Florida and the nation.

## INSTITUTIONAL PHILOSOPHY

The University of Central Florida's philosophy is based upon two tenets: ACCENT ON THE INDIVIDUAL and ACCENT ON EXCELLENCE. The University believes in the individual worth of each person and especially encourages the RESPONSIBLE INDIVIDUAL who strives for EXCELLENCE in every activity.

Research is considered an important part of advanced study and UCF provides students with opportunities for research projects and independent study. Many projects involve community service and opportunities for students to experience real situations while receiving individual guidance from faculty.

The University of Central Florida, in order to serve the community better, makes higher education easily available to the citizens of east-central Florida by operating off campus resident centers and offering off campus credit courses to citizens of the area.

## **EAST CENTRAL FLORIDA AREA**

UCF is located in the East Central Florida region with a population estimated at 1.3 million. The area is well endowed with a rich heritage of cultural, educational, industrial, and recreational activities. Cultural activities include a symphony orchestra, civic theatre, dinner theatres, art galleries, and museums. The beauty of the Orlando area is evidenced through its numerous parks and flower gardens. In addition to UCF, educational needs of the area are served through quality public school systems, public community colleges, and several privately supported colleges and schools. Recreational opportunities abound in the Orlando area.

## **THE CAMPUS**

The campus of UCF, located 13 miles east of downtown Orlando, consists of 1227 acres of land; much of which is covered with pine, palm, cypress, cedar, and oak trees. Lake Claire, covering 40 acres and Lake Lee, covering 14 acres, contribute to the natural beauty of the campus. Since campus construction began in 1966, approximately \$35 million has been invested in facilities and equipment including the library, classroom buildings, laboratories, residence halls, and student facilities. The childcare center was built with funds contributed through the Edyth Bush Charitable Foundation of Winter Park and UCF Student Government. Recreational facilities include lighted tennis and handball courts, a flag football-soccer field, a swimming pool, a golf driving range with putting greens, volleyball courts, and a baseball field. The campus currently serves approximately 10,000 students.

UCF's four two-story residence halls accommodate 414 students—198 men and 216 women. Two of the residence halls are for women and two are for men. Each suite consists of double bedrooms (a limited number of singles), common living room and bath. Each suite is equipped with functional furnishings, in keeping with the living-study area design, central heat, air-conditioning and maid service. Each hall has laundry facilities, a vending machine room and a common social/study lounge for residents' use. For more detailed information on campus housing please write to Director of Housing, University of Central Florida, P. O. Box 25000, Orlando, Florida 32816.

## **RESIDENT CENTERS**

The University of Central Florida offers a number of *upper division* and *graduate level* courses at three off-campus Resident Center locations in Central Florida. These are the same courses as are offered on campus and carry the same credit as on-campus courses. Each center is staffed with a Center Director and full-time faculty. Contact the Resident Centers for information as to the current courses and program offerings.

**UCF BREVARD RESIDENT CENTER**  
1519 Clearlake Road  
Cocoa, Florida 32922  
(305) 632-4127

#### **UCF DAYTONA BEACH RESIDENT CENTER**

215 South Clyde Morris Boulevard

Daytona Beach, Florida 32014

(904) 255-7423

#### **UCF SOUTH ORLANDO RESIDENT CENTER**

7300 Lake Ellenor Drive

Orlando, Florida 32809

(305) 855-0881

### **CONTINUING EDUCATION**

The office of Continuing Education is responsible for developing and implementing non-credit and sponsored credit institute programs for the University. These programs include short courses, conferences, seminars, and workshops designed to assist the individual in life-long development and to meet the educational needs of business, professional, government, service, and civic organizations and groups.

Suggestions and recommendations regarding possible program offerings in a continuing effort to respond to community concerns are welcome. Current program information may be obtained by contacting the office of Continuing Education, Administration Building 397, University of Central Florida, Post Office Box 25000, Orlando, Florida 32816. Telephone (305) 275-2123.

### **COOPERATIVE EDUCATION**

Co-Op is a planned, balanced, education program for students who wish to "blend theory with practice" by combining their campus education with work experience.

The Co-Op Program is based on a format under which the student ordinarily alternates between quarters of study and quarters of employment. The student will be placed with business, industry, or a governmental agency in a work training assignment related to his/her academic field of study.

For further information about the Cooperative Education Program, write to Cooperative Education Office, University of Central Florida, Post Office Box 25000, Orlando, Florida 32816, or visit Suite 124 in the Administration Building.

### **ACCREDITATION**

The graduate and undergraduate programs of the University are accredited by the Southern Association of Colleges and Schools, the official regional accrediting agency for educational institutions in the South.

In addition to the regional accreditation agencies, there are a number of scientific, professional, and academic bodies conferring accreditation in specific disciplines and groups of disciplines. Currently, the following areas have been approved by the agencies indicated. The College of Business Administration is accredited at the undergraduate level by the American Assembly of Collegiate Schools of Business (AACSB); Engineering Mathematics and Computer Systems, Environmental, Electrical, Industrial,

and Mechanical program options in the College of Engineering by the Engineers' Council for Professional Engineers Development (ECPD); Medical Record Administration by the Council on Medical Education of the AMA; Respiratory Therapy by the American Registry of Inhalation Therapists (ARIT). All teacher education programs are fully accredited by the Florida State Department of Education.

UCF is listed in Report of Credit Given By Educational Institutions with an "A" Rating which means "Transcript of record given full value." This handbook, published by the American Association of College Registrars and Admission Officers, shows the acceptability of transfer credits based upon their (AACRAO) evaluation.

## **UNIVERSITY OF CENTRAL FLORIDA FOUNDATION, INC.**

Chartered in 1968, the UCF Foundation, Inc. is a non-profit, tax-exempt corporation receiving and disbursing private gifts for the betterment of the University as a whole. Its primary function is that of assisting the University financially in the student financial aid program, scholarships, and in institutional development.

Through the leadership of a 36-member Board of Directors, the Foundation encourages, solicits, receives, and administers gifts and bequests of property and funds for scientific, educational and charitable purposes. All for the advancement of the University of Central Florida and its objectives.

The Foundation promotes and supports education by providing funds which are not received from public sources.

Contributions are deductible by donors as provided in Section 170 of the Internal Revenue Code.

## **UNIVERSITY LIBRARIES**

**Director:** Lynn W. Walker, LR 427, Phone, 275-2564

**Associate Director:** Orlyn B. LaBrake, LR 427, Phone 275-2564

**Professional Staff:** Elaine T. Bazzo, Leonie Y. Black, Elba C. Grovdahl, Karen A. Hitchcock-Mort, Laurie S. Hodge, Mary Helen Howard, Phyllis J. Hudson, Elizabeth W. Lloyd, Cheryl G. Mahan, Theodore R. Pfarrer, Peter C. Rossi, John C. Sanderlin, Norbert St. Clair, June S. Stillman

The University Libraries provide materials and services to support the instructional and research needs of the university. The collection now numbers some 300,000 volumes and about 5,000 periodical, newspaper and serial publications placed on open shelves to encourage browsing. The library is a depository for U.S. and Florida state documents.

The Audiovisual Services Section, located in the basement of the library, provides a wide variety of AV equipment. Films and facilities to preview them are also located here. Other audiovisual materials, recordings, tapes, filmstrips and mixed media kits are housed in the library.

The circulation desk is located on the first floor. The reference collection, state and federal documents and interlibrary loan are on the second

floor. On the third floor are periodicals, microforms, audiovisual materials, reserve materials and technical processing departments. The fourth floor contains the general book collection, special collections, administrative offices, and noise room with typewriters for student use. Study areas and photocopying machines for student and faculty use are located on all floors.

During the school term the library operates on a full schedule of hours, including evenings and weekends. During vacation periods, a shortened schedule is maintained. Librarians are available for assistance and advice in the use of the library, its materials and services throughout library hours. Arrangements may be made for class or small group instruction. Inter-library loan service is available to faculty, staff and students to supply materials not available in the library's collections.

Special services are provided for the handicapped. The microfiche catalog is made available to mobility-impaired students attending UCF and these students may check our microfiche readers for home use. Using the microfiche catalog, students can determine the books they need, and a call to the library will bring books to them at a convenient location on campus. The Florida Bureau of Blind Services has deposited talking book machines and cassette tape players, a talking calculator, and other similar equipment, in the library for the use of blind or partially-sighted students, and the library staff assists these students in reference and research projects.

In an effort to have library services within reach of all its students, the UCF library maintains small collections of about 2,000 books at the university's resident centers in Daytona Beach and South Orlando. Subjects of the collections vary depending on the courses offered at each center. Copies of the Main Library's Card Catalog on microfiche are provided at each of the resident centers. These catalogs and a courier service give the centers access to the collections of the main library. Students at the Brevard Center receive a full range of library services from the Brevard Community College library.

## **INSTRUCTIONAL RESOURCES**

**Director:** *Robert L. Arnold* LR 142, Phone 275-2571

**Assistant Director:** *David W. Retherford*

The primary purpose of Instructional Resources is to improve instruction. In meeting both the academic and administrative needs of University of Central Florida, the department provides graphic, photographic, radio, and television production in addition to a wide range of consultative services in an effort to bridge the gap between technology and instruction. The Graphics area provides faculty meetings with the opportunity to have ideas and concepts visualized through the graphic artist's hands. The Photography area assists the faculty member in bringing variable perspectives of a broader world into the classroom. The Television area provides studio and remote facilities for the production and dissemination of a wide variety of instructional and informational materials. The Radio area provides audio booths for the production of original sound tapes that can be used as resource material or in conjunction with their instructional objectives via media, a wide range of consultative services exist in the instructional

Development area. Assistance is provided during the production, dissemination, and administration of media-based courses and ensures the most efficient, effective, and economical uses of the available instructional technology.

## UNIVERSITY BOOKSTORE

The University Bookstore, located in the basement of the Library Building, carries required textbooks, supplemental books, and associated supplies for all UCF courses. In addition, a complete line of school and art supplies, sundries, paperbacks, gifts, and other items of interest are available. A Customer Service Desk is provided for special orders such as class rings.

During the last three days of each quarter, the Bookstore has a "buy-back" period for used text books. Student I.D. cards must be presented for identification.



# STUDENT AFFAIRS

## INTRODUCTION

The Vice President for Student Affairs is concerned with the education and welfare of students as affected by non-classroom aspects of the total University program; therefore, he coordinates and supervises the non-academic areas of student life. His goals include creating a favorable environment for student learning; personalizing the education process; encouraging self-discipline, self-direction, and purpose on the part of the individual student; and fostering respect and brotherhood among students and faculty. Assisted by members of his staff, the Vice President for Student Affairs administers programs involving orientation, personal counseling, housing, financial aids, health services, placement, student government, student organizations, Veterans Affairs and special activities. Students are invited to consult the staff of Student Affairs concerning any aspect of campus life.

## ORIENTATION

The purpose of orientation at University of Central Florida is to acquaint new entering and transfer students with the various colleges and academic curricula and to assist them in understanding college life. Orientation for the student begins upon the indicated desire to enroll at UCF. Each student receives a number of communications from members of the faculty and administration, and subsequently from the student body, containing advice on academic life, student services, and other campus activities. Information is mailed to students indicating the date on which they are to report for orientation. During orientation new students meet members of the faculty, staff and student body. They also receive instructional information to facilitate registration.

## HOUSING POLICY

- I. Regularly enrolled single students paying registration fees for a minimum of nine quarter hours may apply for assignment to University residential units. Priority of assignment is given to current residents and new students admitted in good standing. Any single student applicant to the University may request and submit a Housing application on which he/she requests Housing and Food Service for a specific quarter. Priority of room assignments is based on the date of receipt of the completed application in the Housing Office. Applicants should CAREFULLY READ the application before submitting it with the \$25 pre-payment to the Housing Office.
- II. ALL HOUSING CONTRACTS ARE FOR HOUSING AND FOOD SERVICE, combining room and board, and requiring each resident student to participate in one (1) of several available meal plans.



## **INTERNATIONAL STUDENT SERVICES**

The Division of Student Affairs offers basic services for students from other nations. These services include pre-arrival information, assistance in location housing, counseling on personal, financial, and cross-cultural communication matters, referral to appropriate University and community agencies for needed services, liaison with the Immigration and Naturalization Service, and other matters that occur from time to time. Contact the Student Affairs Office, Administration Building, 2nd floor, for further information.

## **STUDENT HEALTH SERVICE**

The University is concerned with the physical and emotional health of the student as well as the promotion of individual and general health in the University community. A Student Health Service is maintained on an outpatient basis for routine and emergency health needs, to promote health education, and to protect the Student Body from communicable diseases. The Service is staffed by medical doctors and registered nurses when classes are in session. Medical care in the students' living quarters is not provided. Every health fee paying student is entitled to the benefits outlined in the Health Service brochure. Except for Workman's Compensation cases, faculty and staff will be seen only for emergency first aid on a fee for service basis.

Blood is available for students, staff, faculty and their immediate families by notifying the Student Health Services of such need.

Medical records are confidential communications and will be treated as such in so far as the law permits.

In the event of an on-campus emergency, contact University Police for assistance to the Student Health Service.

## **STUDENT FINANCIAL AID**

### **GENERAL INFORMATION**

Student Financial Aid programs at the University of Central Florida are designed to provide assistance to students in the form of loans (long and short-term), grants, scholarships and part-time on-campus student employment. The philosophy of the University is to assist students who, for the lack of financial assistance, would be unable to attend the University.

The application procedure varies according to the classification of the aid program; i.e., whether or not the program requires evidence of financial need.

### **I. PROGRAMS BASED ON FINANCIAL NEED**

Programs which DO HAVE FINANCIAL NEED as their prerequisite are:

**NATIONAL DIRECT STUDENT LOAN:** This is a long-term, 3 per cent simple interest loan for students who provide evidence of exceptional financial need.

**STUDENT REGENT FEE LOAN:** Authorized by the Florida Board of Regents, this long-term loan is awarded through the Student Financial Aid Office. Students must have a proven financial need in order to receive funds.

**BASIC EDUCATIONAL OPPORTUNITY GRANT:** The Basic Educational Opportunity Grant Program is a Federal aid program designed to provide financial assistance to eligible students to attend post-high school educational institutions. The amount of the Grant is determined on the basis of the student's financial resources coupled with the contribution available from the student's family.

**FLORIDA STUDENT ASSISTANCE GRANT:** This program consists of one-year monetary awards ranging from \$200 to \$1200. The grants are nonrepayable and are available to eligible Florida residents who demonstrate a financial need and who desire to attend Florida post-secondary institutions.

**SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT:** Direct awards are made to financial aid applicants with exceptional financial need. Only students who have received SEOG funds prior to their senior year in college are eligible for this program.

**COLLEGE WORK-STUDY PROGRAM:** This program is for students with financial need who are capable of maintaining satisfactory academic standing while employed part-time.

**INSTITUTIONAL WORK-STUDY PROGRAM:** This is a University Student Financial Aid sponsored on-campus part-time work program. The objective is to assist students who are in need of a job to continue their studies. The student must show evidence of financial need.

To qualify for these programs, students must complete an Institutional Aid Application annually, as well as the College Scholarship Service Financial Needs Analysis or the American College Testing Form. Awards for these particular programs will be made beginning April 1, each year, and will continue until funds are exhausted.

## II. PROGRAMS NOT EXCLUSIVELY BASED ON NEED

**GUARANTEED STUDENT LOAN:** This is a long-term loan for upper and middle income families. The interest rate is 7 per cent simple interest. The loan may be obtained through banks, credit unions or savings and loan associations.

**FLORIDA GUARANTEED STUDENT LOAN PROGRAM:** This loan, at 7 per cent simple interest, was established for those students who live in small counties which have had difficulty in lender participation. Maximum amount allowable per year is \$2,500.

**SOUTHEAST RENEWAL LOAN PROGRAM:** This program was designed specifically for those students who were previously on the Florida Insured Loan.

**LAW ENFORCEMENT EDUCATION LOAN:** This is a 7 per cent simple interest loan for criminal justice majors who desire a career in law enforcement. Applications may be obtained through the Office of Student Financial Aid.

**OTHER PERSONNEL SERVICES:** Individual departments with OPS

funds may employ students on a part-time basis. Financial need is not required in this program.

**SHORT-TERM LOAN:** This loan is available to students who have an emergency financial situation. Students must be enrolled in classes to be eligible for this loan. Repayment of this loan is normally required in 60-90 days.

**NON-FLORIDA TUITION WAIVERS:** Out-of-state tuition waivers are available to non-Florida students who have skills or abilities which will contribute positively to the academic environment of faculty and students in the state universities. Application is made through the college dean, or chairman of the student's major.

### III. SCHOLARSHIPS AND OTHER AID

The University of Central Florida has four different types of scholarships available; National, Institutional, College Awarded and Agency Awarded. The Library has a collection of books on scholarships for those interested in additional information.

**NATIONAL:** Examples of these programs are the National Merit Scholarship Program and the National Achievement Scholarship Program. Both require taking the Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualification Test in high school. Contact your high school counselor for more information.

**INSTITUTIONAL:** UCF provides funds for certain scholarship programs. Applications should be made directly to the Office of Student Financial Aid.

**AGENCY AWARDED:** These are funds awarded by agencies for selected recipients. Application should be made directly to the agency.

**COLLEGE AWARDED:** Individual colleges assign funds to students according to academic achievement. Applications are made directly to the dean or department chairman of the student's major.



#### IV. PLANNING YOUR FINANCES

In planning your budget, carefully examine the estimated expenses listed below. You and your parents should determine how much you may be able to save from your summer work. Add to this figure all anticipated income. After you have added all income you will have from other sources, subtract the total from the budget. If this calculation shows a deficit, the need should be reflected on your application.

##### 1979-80 Student Budgets

	Resident (9 mos.)	Commuter (9 mos.)	Self- Support (9 mos.)	Married* (9 mos.)	Single/Head of Household* (9 mos.)
Tuition/Fees** (15 hr/qtr)	\$ 783	\$ 783	\$ 783	\$ 783	\$ 783
Books/Supplies	198	198	198	198	198
Room/Board	1544	990	2191	4405	4405
Transportation	292	565	443	1238	773
Personal	419	330	495	660	495
	\$3236	\$2866	\$4110	\$7284	\$6654

\*Each additional dependent—\$750.

\*\*Out-of-State Tuition: Additional \$23 per credit hour for lower level courses, \$35 per credit hour for upper level courses. Using the average load of 15 hours, this would incur an additional cost of \$345 for lower level courses and \$525 for upper level courses.

EXPENSES LISTED ARE TO BE CONSIDERED AS VERY GENERAL ESTIMATES. IT IS NOT UNUSUAL FOR EXPENSES TO VARY AS MUCH AS \$200 DEPENDING ON INDIVIDUAL CIRCUMSTANCES.

#### V. GRADUATE AID

Aid for graduate students through the Office of Student Financial Aid is limited to part-time employment and selected loan programs. Application for other aid should be made to the head of the department of the student's major or the Dean of Graduate Studies.

#### VI. AWARD NOTICE PROCEDURE

In programs requiring evidence of financial need, Financial Aid staff members will review the financial documents as well as the applications and make recommendations for the coming fiscal year.

An Official Award Notice is sent to each individual student eligible for an award. The Notice provides the dollar amount and the term the funds are to be disbursed. Each student will receive a white and yellow copy of the Official Award Notice. The white copy should be returned to the Office of Student Financial Aid and the yellow copy retained to be presented to the Cashier's Office in order to pick up the award check.

#### VII. FUND DISBURSEMENT

Funds are disbursed by the Cashier's Office, Administration Building, Room 110, on a quarterly basis upon presentation of a valid Registration/Fee Statement.

## **PLACEMENT CENTER**

Campus interviews and employment contracts are essential aspects of the Placement Center. The provision of these services requires the development of student personnel files and resumes, therefore, seniors are urged to register with the Placement Center three quarters prior to graduation.

All students are invited to take advantage of the career counseling services offered by the Center, and to avail themselves of off-campus, part-time and summer employment opportunities.

## **DEVELOPMENTAL CENTER**

The Developmental Center offers a professional staff of counselors to aid students in selecting vocational-educational objectives, overcoming learning difficulties, solving problems of personal-social adjustment, developing speech or hearing skills and dealing with marital or other relationship problems. A full range of tests is available along with an occupational library, developmental reading and study skills training, and a speech and hearing service.

Any student may request the assistance of the Center whenever he feels the need. He might, for example, desire increased understanding of himself and his relationship with others or he might seek to gain additional satisfaction from his learning experiences. Tests are often used to help the individual student evaluate his own interests, aptitudes, and abilities. The services of the Center are voluntary and all aspects of counseling are confidential.

## **STUDENT ACTIVITIES**

Personal development may, in part, be enhanced through informed, experienced, dedicated participation in the University and community. Frequently, activities are referred to as "extracurricular," but at the University of Central Florida student activities are regarded as a part of the total educational program, a supplement to the individual student's academic program. The University, through student cooperation and with the assistance of student organizations, sponsors a variety of cultural and entertainment programs which will contribute to the student's academic, recreational, and cultural activities. Additionally, ample opportunity to become a member of occupational, professional, social, and honorary organizations is provided. It is the desire of the University to appeal to the interests of students and to provide opportunities for students to become acquainted with fellow students and faculty members through participation in student activities.

## **STUDENT GOVERNMENT**

The purpose of the Student Government at the University of Central Florida is to represent student opinion; advance the cause of students both socially and academically; promote communication, cooperation and understanding among students; and to insure that Student Government shall continue to be used as a democratic instrument of change at UCF. Additionally, Student Government is authorized to determine the allocation of the Activity and Service Fee.

The Student Government of UCF represents the interests of Students through its executive and legislative and judicial branches. The Student Senate is composed of representatives from every college. In addition to these elected offices, there are many openings available for appointed offices or on Student Government committees. By active participation in Student Government, or by voicing opinions and ideas through representative legislators, a student may gain valuable experience in the democratic processes—its freedoms and responsibilities. Students interested in working with the Student Government may obtain information from any member of Student Government or from the Office of Student Affairs. Student Government offices are located in the Village Center. Student Government has many services available to students including discount movie and dinner theatre tickets, babysitting referral, nexus phone system, consumer affairs, carpool and legal aid.

## **OFFICES OF DEAN OF MEN AND DEAN OF WOMEN**

Students are urged to take advantage of the many services and educational programs available beyond the classroom. These services and programs are provided to facilitate learning and supplement academic instruction. The Dean of Men and Dean of Women are available to help students in their attempts to become familiar with these services and activities and to become involved in educational experiences beyond the classroom. The Dean of Men and Dean of Women plan and assist in the development of University programs that provide for the personal, social, and academic adjustment of students. They counsel students for personal, academic, financial and social problems, and as necessary refer students to specialized, professional services. The Deans are the primary contact for students seeking information or assistance in non-academic areas of university operations.

## **OFFICE OF HANDICAPPED STUDENT SERVICES**

The Office of Handicapped Student Services provides information and orientation to campus facilities and services, counseling, referral to campus services and assistance with registration for students who are handicapped. A separate handbook including a campus map showing accessible building entrances and curb ramps is available upon request from the Office of Handicapped Student Services. Information and assistance are available for faculty members working with students who are handicapped.

## **OFFICE OF SPECIAL SERVICES**

Services rendered under The Special Services Program are designed to assist students who have academic potential, but who may lack adequate secondary school preparation or who may have special circumstances hindering their academic success. Working closely with the Developmental Center, the Program arranges for students to enroll in the Center's special classes in English, mathematics and reading. Special Services also arranges for and provides academic, career and personal counseling. In addition, the Program renders referral to outside agencies that might help students resolve personal and other non-academic problems related to academic success. The goal of the Program is the retention and graduation of students who need this kind of support.

## **CHILD CARE CENTER**

The Edyth Bush Charitable Foundation, through a grant, has made possible the construction of an on-campus child care center. The child care program is designed as a student service which will enable the University to assist student parents by providing complete child care while parents attend class. The center, staffed by personnel experienced in early childhood development, is available to students in academic programs requiring internships and observations. For further information contact the Office of the Dean of Women.

## **OFFICE OF VETERANS' AFFAIRS**

The Office of Veterans' Affairs is a "one-stop" center for students who are utilizing veterans' educational benefits in order to further their education. The Office has a professional staff augmented by student veterans to assist in providing information concerning entitlements, filing claims to the Veterans Administration, and certifying enrollment at the University. The office also provides information and referral services for personal and academic problems. All veterans and dependents are urged to contact the office early in the process of applying for admission to UCF.

## **VILLAGE CENTER**

The center of student life on the University of Central Florida campus is the Village Center, a campus-community facility serving students, faculty,



University patrons, alumni and guests. It contains food service facilities, conference rooms, art gallery, games area and lounge areas where the student may relax during his leisure moments. Offices for student organizations are located in the Village Center. Under the administration of the Director of the Village Center, many student activity programs are conducted for the social, cultural and recreational interests of all students.

## **RECREATIONAL SERVICES**

Recreational Services offers a variety of sports and recreational opportunities to students, faculty and staff members of the University. Included in the program are Intramural Sports leagues and tournaments, coed sports, organized recreation and fitness opportunities, unstructured open recreation and competitive sports clubs.

The sports activities range from the traditional flag football, basketball, soccer, golf and bowling to Ultimate (Frisbee Football), innertube water-polo, floor hockey and a Turkey Trot. For the fitness minded we have a physical fitness class, a Rec Milers Club and ample equipment which may be checked out and used on the University recreational facilities.

A handbook which provides full information, rules and regulations on all activities is available from the Office of Recreational Services.

## **STUDENT CONDUCT**

Students are subject to federal and state laws and local ordinances as well as regulations prescribed by the University of Central Florida and the Florida Board of Regents. The breach or violation of any of these laws or regulations may result in disciplinary action.

When a student is involved in an offense resulting in criminal charges, prior to his admission, the circumstances of the case may be reviewed by the appropriate Student Affairs Committee to consider the student's eligibility for admission to the university as well as participation in extra-curricular activities.

## **CLASSROOM RESPONSIBILITY**

Students are responsible for maintaining a classroom decorum appropriate to the educational environment. When the conduct of a student or group of students varies from acceptable standards to such an extent that normal classroom procedures are interfered with, the instructor has the authority to remove the offending party from the room.

## **CONFIDENTIALITY OF STUDENT RECORDS**

The University policy which governs the confidentiality and access of student records is provided in the student handbook, **A Guide To Knight Life**. The policy explains in detail the procedures to be used by the institution for compliance with the Family Educational Rights and Privacy Act of 1974 as amended. Copies of the policy may be obtained from the Office of Student Affairs. The Office of Student Affairs also maintains a directory of records which lists all educational records maintained on students by the University.



# SCHEDULE OF FEES

A student's basic expenses at the University will be for tuition fees, room and board, textbooks, other instructional supplies, and miscellaneous items.

Required fees are established by the Board of Regents and the Florida State Legislature and are subject to change without notice.

It is required that all University fees be paid at or before regular registration time. University policies do not permit deferring fees or paying by installments during the quarter. Failure to pay fees on or before due date can result in a \$25.00 late registration fee.

The following schedule applies to all the University of Central Florida students:

## General Fees and Costs

- A. Application fee (required with all applications for admission to the University and not refundable) .....\$15.00
- B. Registration Fees per quarter for campus, centers, and continuing education courses. Minimum registration of one credit hour (at the level the student is classified) must be charged for students registering for zero hours (co-op student on work assignment, applicant for graduation during the quarter that student is not registered, etc.)

### Fall, Winter and Spring Quarters

	<b>Resident</b>	<b>Non-Resident</b>
Lower Division*	\$15.00 per hr.	\$38.00 per hr.
Upper Division*	16.50 per hr.	51.50 per hr.
Graduate*	22.00 per hr.	62.00 per hr.
Thesis*	24.00 per hr.	64.00 per hr.

### Summer Quarter, 1979

	<b>Resident</b>	<b>Non-Resident</b>
Lower Division*	\$ 9.00 per hr.	\$32.00 per hr.
Upper Division*	10.50 per hr.	45.50 per hr.
Graduate*	22.00 per hr.	62.00 per hr.
Thesis*	24.00 per hr.	64.00 per hr.

\* Lower division courses are for those numbered 0-2999

Upper division courses are those numbered 3000-4999

Graduate courses are those numbered 5000-6989

Thesis is course number 6970-6973

- C. Room and Board (required of student living in University residence halls) per quarter .....\$400.00-\$450.00
- Charge for late payment .....\$15.00
- D. Books and supplies (estimated) per quarter .....\$50.00

- E. Late Registration Fee—not refundable (for students who register during late registration periods or who fail to pay full fees by the established deadline.) .....\$25.00
- F. Vehicle Registration (required of everyone operating a motor-powered vehicle on campus) per calendar year for full-time, part-time students, and courtesy students from other institutions.  
Student's fee .....\$10.00
- G. Reinstatement Fee—not refundable (for all students whose registration has been cancelled and reinstatement has been approved) ....\$25.00  
This fee is in addition to the late registration fee.
- H. Student Health Fee—not refundable (per quarter)  
Assessed to all students except those enrolled exclusively in Continuing Education courses. This fee must also be waived for employees under the fringe benefit plan, for Intern Participation holders, and for non-degree applicants. Students on training session under the Cooperative Education Program will be required to pay the Student Health Fee. University employees who use the Tuition Fee Waiver for class attendance may *not* elect to pay the Student Health Fee, regardless of the number of quarter hours taken .....\$10.00
- I. Intern Participation Holder ..... \$2.50/hr.

## CHECKS

The University will accept personal checks for accounts due to the University. Each student is urged to make his own financial arrangements through his choice of commercial banks. The University Cashier will cash personal checks not exceeding \$35.00. The University is required to collect a \$5.00 Service Fee for any check, draft or order, which may be returned by the bank for any reason and future check cashing privileges will be denied.

## REFUND OF FEES

A refund of fees will be made under certain conditions upon presentation at the Cashier's Office of a Certification of Withdrawal issued by the Registrar. No refunds will be made under this policy except upon proper application.

- A. A FULL REFUND when:
  1. Withdrawal is made before end of the Add/Drop period.
  2. Cancellation of the course by the University.
  3. Student is denied admission to an offered course by the University for whatever reason.
- B. Full refund less \$2.50 per hour when:
  1. Involuntary call to active military duty.
  2. Death of student or death of an immediate family member.
  3. Student contracts an incapacitating illness of such duration and severity as to prevent the successful completion of the academic program for the term enrolled, as confirmed in writing by a physician.
  4. Exceptional circumstances.

## PAST DUE ACCOUNTS

Any, and all, financial obligations to the University must be met by the student if "good standing" is to be maintained. Failure to meet such obligations can result in the withholding of grades and transcripts, and denial of registration and readmission to the University. The services of a professional collection agency; and recourse to the courts may also be invoked if deemed necessary by the University Comptroller. All costs of collection, including attorney's fees shall be borne by the debtor.



# ADMINISTRATIVE AND ACADEMIC POLICIES

## ADMISSION REQUIREMENTS

The following classes of applicants are eligible for consideration as candidates for admission to credit courses. It should be understood, however, that minimum requirements are given and that admission to the university is a selective process. While the satisfaction of minimum requirements does not automatically guarantee admission, students who meet them are normally admitted. The state universities in Florida are allowed to admit a limited number of beginning freshmen as exceptions to normal admission requirements. The Board of Regents regulations state that "no more than 10% of the projected freshman class may be admitted as exceptions." UCF admits students under this provision if there is evidence indicating a reasonable probability that the applicant can satisfactorily complete a program for which he or she is seeking admission.

## FRESHMAN APPLICANTS (First College Attended)

Eligibility is subject to satisfactory receipt and review of all items requested in the admissions process. All applicants must have earned a minimum of 12 high school academic units (i.e., from the areas of English, foreign language, mathematics, science, social studies, or history.)

Students eligible to apply for admission to the University are:

1. *Graduates of Accredited Florida High Schools* who receive no unfavorable character recommendations from officials of their high schools, have an overall average of "C" or better for all academic subjects, and have earned a minimum score of 800 on the SAT or 17 on the ACT (or 300 on the Florida Twelfth Grade Test—now discontinued).
2. *Graduates of Accredited Non-Florida High Schools* who receive no unfavorable character recommendations from officials of their high schools, have grades placing them in the upper 40 percent of their graduating classes and have earned a minimum score of 800 on the SAT or 17 on the ACT.
3. *Graduates Processing State High School Equivalency Diplomas* based upon General Education Development testing and who have acceptable high school records for the portion attended and have a minimum score of 800 on the SAT or 17 on the ACT.

*Graduates Who Meet Requirements in the first two categories Above, But Who Were Graduated from a Regionally Unaccredited High School* will be considered on an individual basis. Such applicants may be admitted on a "provisional" basis. By obtaining a 2.0 GPA (C average) or better at the end of the first quarter of attendance, the provisional status will be removed. Earning less than a "C" average for the first term would result in academic probation status.

*Graduates Who Do Not Meet These Entrance Requirements and Are Considered Borderline Admission Cases* are referred to the University Admissions and Standards Committee for review. It may be recommended that a student attend a Florida Community College before reapplying to UCF.

## **COLLEGE TRANSFER APPLICANTS**

An undergraduate student transferring from another college or university must (1) have a minimum GPA of 2.0 ("C" average) in all college work previously attempted, (2) be in good standing at the last institution attended, and (3) have a minimum GPA of 2.0 at the last institution attended. Refer to page 53, Re: Repeat Policy, Transfer Courses.

Should applicants have less than 2 years (90 quarter hours or 60 semester hours) of transferable college credit, they must meet the University's freshman entrance requirements and, therefore, furnish high school records and satisfactory test scores.

Credits in which an applicant has achieved a grade of "D" or better are transferable. Refer to page 42 for "D" grade transfer policy. All grades are included in transfer GPA.

No credit will be awarded for college-level GED tests, for courses given without a grade, nor for courses carrying grades but not credit hours.

Completed military service school courses may be evaluated on the basis of the recommendations of the American Council on Education when official credentials have been properly presented. Credit may be granted when courses are equivalent to those offered by the University. However, recommendations by the A.C.E. are not binding upon the University, and application for service school course credit should be made at the time of admission.

Graduates from other accredited four-year institutions who apply for admission to work toward a second undergraduate degree must meet the regular requirements of the University (See Undergraduate Degree Requirements, page 47 and Second Baccalaureate Degree, page 58). A baccalaureate degree or higher from another accredited four-year institution satisfies the Basic and Advanced Environmental Studies Program requirements.

Transfer students from Florida State Community Colleges or Universities may satisfy the Basic Environmental Studies Program requirements by completing prior to transfer, the general education program prescribed by the community college or university. Transfer applicants with incomplete General Education Programs (UCF Environmental Studies Program) from state institutions will have their credits evaluated on an individual basis. In Florida public community colleges, the Associate of Arts Degree (AA) is the university transfer degree that normally guarantees the admission of new students. The Associate of Science Degree is a two-year terminal degree which does not assure admission except for the AS in Engineering Technology which leads into our special upper division BET Degree Program.

1. *Florida State Community College Transfers.* Admission to the University is normally granted to any graduate of a Florida community college who has completed the Associate of Arts program and graduated with a 2.0 GPA ("C" average) based upon all work attempted.
2. *Private Colleges and Out-of-State Institutions.* The general education program credits of transfer applicants from private junior and senior colleges and out-of-state institutions will be evaluated on an individual basis.
3. *Unaccredited Colleges or Universities.* Transfer applicants who otherwise meet all requirements, but who enter from a "regionally" unaccredited college or university, will be considered on an individual basis. Admission may be granted on a provisional, probationary and/or non-degree basis depending upon the applicant's record. "Validating" credit may be required before transfer of credit is considered.

Regardless of where the student transfers from—a Florida Community College, another Florida University, or another college or university outside the state, it is the student's responsibility to submit the necessary petition(s) to the college of major in order to determine which courses will transfer with regard to degree progress at UCF. Each College has different petition procedures but generally the petitioning should be done during the second full quarter of the student's residency at UCF in order that the accepted transfer courses are clearly understood by the student and the faculty advisor early in the student's program.

Final determination regarding applicability of credits accepted in transfer toward the fulfillment of degree requirements resides with the College in which a student is enrolled.

*The Admissions and Standards Committee* membership is composed of representatives from the faculty, the student body, the Student Affairs' Office and the Admissions Office. This committee normally meets weekly to review marginal cases and to consider the appeals of applicants. A letter of appeal/explanation is recommended.

## **ACCREDITATION**

For the purposes of this Bulletin "Accredited Institutions" means those institutions accredited by the six regional associations, vis:

New England Association of Schools and Colleges

Middle States Association of Colleges and Secondary Schools, Commission on Institutions of Higher Education

North Central Association of Colleges and Schools, Commission on Colleges and Universities

Northwest Association of Secondary and Higher Schools, Commission on Higher Schools

Southern Association of Colleges and Schools

Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities and Accrediting Commission for Junior Colleges

## **APPLICATION DEADLINE**

Students are encouraged to apply several months in advance, and applications will be accepted up to a year prior to the start of the term desired. The application deadline date for each term is approximately five weeks prior to the start of the quarter. Please consult the catalog calendar for the exact date. Readmission applications and special non-degree registrations will be accepted by the Records Office after the deadline date.

## **RECORDS DEADLINE—Supporting Documents**

All supporting admissions documents (e.g., transcripts and test scores not recorded on official transcripts) should be received by the Admissions Office no later than 15 days preceding the first day of classes. In some cases applicants may be allowed to register on a temporary basis (without all records) assuming it can be determined from available records or consultation with the students that they appear admissible. Records of Temporary Students must be received within four weeks (20 class days) from the first day of classes, or the students will stand the risk of being withdrawn at the discretion of the University Registrar and no fees will be refunded.

## **RECORDS—Validity of Documents**

All supporting admissions documents must be received directly from the issuing institution or testing agency and if the University finds that an applicant has made a false or fraudulent statement or a deliberate omission on his application, residency affidavit, health report, or an accompanying document or statement, that applicant may be denied admission. Should the student be enrolled when such fraud is discovered, he may be immediately withdrawn (with no refund), further enrollment denied, and credit earned and any degree based upon such credit invalidated. Actions for this type of offense will be handled administratively by the University Registrar's Office after notification to the alleged violator and hearing by that office.

## **READMISSION**

Students not in attendance during an academic quarter (exclusive of the summer term) must submit an application for readmission and such other information as may be required, including transcripts of courses attempted in the interim. Any returning student who has been out of school 3 quarters or more, must submit a new health form.

Readmission of a suspended (disqualified or excluded) student is never automatic. If a student has been disqualified or excluded, he/she must be readmitted by action of the University Admissions and Standards Committee after review of the student's total record. A letter of appeal/explanation is recommended.

Any former student who withdrew with a cumulative or overall grade point average of less than 2.0 (C) and who is considered readmissible, will be readmitted on academic warning or academic probation as appropriate.

## **REACTIVATION**

A student who has submitted an application for admission to UCF but never attended may reactivate the original application for a period of one year (e.g., Fall '78 application may be reactivated for Winter, Spring, Summer, and Fall 1979 terms). The deadline date for reactivation is the same as the date for new applications for admission. (See calendar.)

## **TEMPORARY STUDENTS**

Any student who applied before the application deadline date and is permitted to register and attend classes without a complete admission file is granted a maximum of four weeks (first 20 class days), to furnish all required records. Incomplete records or records indicating ineligibility will result in cancellation of the student's registration. No fees are refundable after the first week of classes.

## **TRANSIENT STUDENTS— CONCURRENT ENROLLMENT**

*UCF Students.* A UCF degree-seeking student who wishes to earn credit at another college or university for transfer back into his degree program must obtain prior approval for specific courses from the Dean or Department Chairman of his respective college and the Registrar of UCF. Credit earned without this transient approval may not be accepted. Transient forms are available in the Records Office.

*Students from Other Colleges or Universities.* Students in good standing with a 2.0 overall academic average in any accredited college or university and wishing to enroll for one quarter at UCF may be considered for admission as a transient. Such enrollment terminates at the end of one quarter and does not presuppose regular acceptance by any college or department of the University. A transient form indicating the parent institution's willingness to accept the credits earned and that the student is in good standing is required. This statement protects the student and serves as a basis for admission in lieu of transcripts. Transient forms are available in the Admissions Office.

## **AUDIT STUDENTS**

In order to audit any course, permission of the instructor is required. A new applicant desiring only to audit a course must complete an application and be accepted as a non-degree or regular student. All students register to audit a course at the end of Late Registration only. A student may change from credit to audit only during the Add/Drop period.

Instructors will have the option of changing an audit grade (X) on the final grade roll to Withdraw (W) if the student fails to honor his/her audit commitment by not attending class.



## **NON-DEGREE STUDENTS**

An individual may enroll as a non-degree seeking student using a regular application form. Although such students do not have to meet all of the regular admission requirements of degree seekers, there must be some satisfactory basis for acceptance.

In order to change to degree-seeking status, a non-degree student must provide all academic records required of degree seekers, including testing. A student may establish a basis for changing to degree status by completing 24 quarter hours of work here with a 2.0 UCF GPA or above. Such students should be cautioned that *no more than 45 quarter hours earned as a non-degree student can be counted towards a degree. Change of status is not automatic. Degree status must be applied for through the Admissions Office.* The student's total record will then be reviewed and a decision made.

## **INTERNATIONAL STUDENTS**

Undergraduate applicants should refer to the Admissions Requirements Section of this Bulletin and graduate applicants to the Graduate Studies Section. In addition, the following is required for admission:

1. International student applications, undergraduate and graduate, must be received at least three months prior to the desired term. See catalog calendar.
2. International Student applicants must be "B" level students to be considered for admission.
3. Applicants whose native language is not English must submit a minimum score of 520 on the Test of English as a Foreign Language (TOEFL).
4. Certified English translation of official records showing grades or marks of courses taken, range of passing and maximum marks, and noting successful completion of schooling must be submitted.
5. Applicants must file a financial statement confirming availability of finances for each year of study.

Any additional information or records requested must be furnished before admissions can be final.

## **MEDICAL HISTORY REPORT**

All new students must furnish Medical History Reports on the approved University health form before registration will be allowed. The Medical History Report form will be mailed to the applicant with receipt for the Application for Admission. Any UCF student who is out of school 3 quarters or more must submit a new health form.

## **FLORIDA RESIDENCE**

(1) For the purpose of assessing registration and tuition fees, a student shall be classified as a "Florida" or "non-Florida" student.

- (a) A "Florida student" is a person who has domicile in and who shall

have resided in the state of Florida for at least twelve (12) consecutive months immediately preceding the first day of classes of the academic term in which the student enrolls. In determining residency, the university may require evidence such as voter registration, driver's license, automobile registration, location of bank account, rent receipts or any other relevant materials as evidence that the applicant has maintained continuous residency. Physical presence for the entire twelve-month period need not be required so long as the conduct of the student, taken in total, manifests an intention to make Florida his or her permanent dwelling place. If such student is a minor, it shall mean that the parent or parents, or legal guardian of the student shall have domicile in and have resided in the state of Florida for the period stated above. "Florida student" classification shall also be construed to include students who hold an immigration and Naturalization Form 1-151, Resident Alien Registration Receipt Card, or Cuban Nationals or Vietnamese Refugees who are considered as Resident Aliens, provided such students meet the residency requirement stated above and comply with subsection (2) below. The burden of establishing facts which justify classification of a student as a resident and domiciliary entitled to "Florida student" registration rates is on the applicant for such classification.

(b) In applying this policy:

1. "Student" shall mean a person admitted to the institution, or a person allowed to register at the institution on a space available basis.

2. "Minor" shall mean a person who has not attained the age of 18 years, and whose disabilities of minority have not been removed by reason of marriage or by a court of competent jurisdiction.

3. "Domicile" for fee paying purposes shall denote a person's true, fixed, and permanent home and place of habitation. It is the place where the applicant lives and remains and to which he expects to return when he leaves, without intent to establish domicile elsewhere.

4. "Parent" shall mean a minor's father or mother, or if one parent has custody of a minor applicant, it is the parent having court assigned financial responsibility for the education of the student; or if there is a court appointed guardian or legal custodian of the minor applicant, it shall mean the guardian or legal custodian.

5. The term "dependent student", as used in this rule is the same as a dependent as defined in sections 151 (e) (1) (2) (3) and (4) of the Internal Revenue Code of 1954. A copy of these provisions in the Internal Revenue Code of 1954 is incorporated in this rule by reference.

6. A "non-Florida" student is a person not meeting the requirements of subsection (a) above.

(2) In all applications for admission or registration at the institution on a space available basis, a Florida applicant, or, if a minor, the parent or legal guardian of the minor applicant, shall make and file with such application a written statement, under oath, that the applicant is a bonafide citizen, resident, and domiciliary of the state of Florida, entitled as such to classification as a "Florida student" under the terms and conditions prescribed for citizens, residents, and domiciliaries of the state of Florida. All claims to "Florida student" classification must be supported by evidence as stated in 6C-7.05(1) if requested by the registering authority.

(3) A "non-Florida student" or, if a minor, his parent or guardian, after having been a resident and domiciliary of Florida for twelve (12) consecutive months, may apply for and be granted reclassification prior to the first day of

classes of any subsequent term; provided, however, that those students who are non-resident aliens or who are in the United States on a non-immigration visa will not be entitled to reclassification. An application for reclassification as a "Florida student" shall comply with provisions of subsection (2) above. An applicant who has been classified as a "non-Florida student" at time of original enrollment shall furnish evidence as stated in 6C-7.05(1) to the satisfaction of the registering authority that the applicant has maintained continuous residency in the state for the twelve months required to establish residence for tuition purposes. In the absence of such evidence, the applicant shall not be reclassified as a "Florida student." In addition, the application for reclassification must be accompanied by a certified copy of a declaration of intent to establish legal domicile in the state, which intent must have been filed with the Clerk of the Circuit Court, as provided by Section 222.17, Florida Statutes. If the request for reclassification and the necessary documentation is not received by the registrar prior to the last day of registration for the term in which the student intends to be reclassified, the student will not be reclassified for that term.

(4) Unless evidence to the contrary appears, it shall be presumed by the registering authority of the institution at which a student is registering that:

(a) The spouse of any person who is classified or is eligible for classification as a "Florida student" is likewise entitled to classification as a "Florida student." This provision will not apply in the case of students who are non-resident aliens or who are in the United States on a non-immigration visa.

(b) If an applicant's eligibility for classification as a "Florida student" is based on the residency of the spouse, the spouse shall make and file with the application a written statement under oath, that said person is the spouse of the applicant and a bona fide citizen, resident and domiciliary of the state of Florida, entitled as such to classification as a "Florida student."

(c) No person over the age of 18 years shall be deemed to have gained residence while attending any educational institution in this state as a full-time student, as such status is defined by the Board of Regents, in the absence of a clear demonstration that he has established domicile and residency in the state, as provided under subsection (3) above.

(d) Any "Florida student" who remains in the state, after his parent who was previously domiciled in Florida or stationed in Florida on military orders removes from this state, shall be entitled to remain classified as a "Florida student" so long as his or her attendance at a school or schools in Florida shall be deemed "continuous." However, such student claiming continuous attendance must have been enrolled at a school, college or university in Florida for a normal academic year in each calendar year, or the appropriate portion or portions thereof, from the beginning of the period for which continuous attendance is claimed. Such a student need not attend summer sessions or other such intersession beyond the normal academic year in order to render his attendance "continuous."

(5) Appeal from a determination denying Florida status to any applicant therefor may be initiated after appropriate administrative remedies are exhausted by the filing of a petition for review pursuant to Section 120.68 F.S. in the District Court of Appeal in the appellate district in which the institution maintains its headquarters or where a party resides.

(6) Any student granted status as a "Florida student," which status is based on sworn statement which is false shall, upon determination of such

falsity, be subject to such disciplinary sanctions as may be imposed by the president of the university.

(7) **Special Categories**—The following categories shall be treated as Florida residents for tuition purposes if adequate documentation is provided:

(a) A member of the Armed Services of the United States who is stationed in Florida on active duty pursuant to military orders, the spouse and the dependent students.

(b) A veteran of the Armed Forces of the United States of America with twenty (20) or more years of active military service, including the spouse and dependent students of such veteran's immediate family, provided that the veteran is in Florida at time of retirement or moves to Florida within one year following retirement and files a declaration of Florida domicile.

(c) Full-time elementary, secondary, and community college faculty members under current teaching contracts in the state of Florida, and their spouses and dependent students.

(d) Full-time faculty, administrative and professional and career service employees of the University System and their spouses and dependent students.

(e) A student certified by his respective state for participation in the Academic Common Market Program of the Southern Regional Education Board who is enrolled in a program approved by the Florida Board of Regents.

(f) Florida domiciliaries living in the Panama Canal Zone who have not established domicile elsewhere, including the spouse and dependent students.

(g) Florida residents who had their residency in Florida interrupted by service in the U.S. armed forces, the Peace Corps or other similar volunteer organizations fostered by the United States government shall be deemed to have had residency in Florida during time of service in the aforementioned organizations.

(8) **Reciprocal Agreements.** The Board of Regents may enter into agreements with appropriate agencies and institutions of higher education in other states and foreign countries providing for the reciprocal exchange of students enrolled and prospective in higher educational institutions to facilitate utilization of public higher educational institutions in this State and other states or countries. Such agreements may include provisions for waiver or reduction of non-resident tuition for designated categories of students who may include contractual payments to such other state or country, subject to the availability of appropriations. Such agreements shall have as their purpose the mutual improvement of educational advantages for residents of this State and such other states or countries with whom agreements may be made. Specific Authority 240.042 (2) (9), 240.052 (1) FS. Law Implemented 240.042 (1), (2)(a), (h), 240.052 (1), (2)(a), (b), (3), and 120.53 (1)(a) F.S. History—Formerly 60-2.51, 11-18-70. Amended 8-20-71, 6-5-73, 3-4-74.

## **TRANSFER OF "D" GRADES**

Credits earned in courses transferred with "D" grades will count toward the credits required for the baccalaureate; however, it is at the discretion of the department or college of the University offering the major as to whether

courses with "D" grades in the major may satisfy requirements in the major field.

## **SUBSTITUTION OF COURSES**

If a student has completed a course similar to one required at UCF, he may file a petition to have an exception made in meeting the UCF requirement. A petition to substitute any course or courses in the Environmental Studies Program should be directed to the Standards Committee of the college in which the student is registered. To make a substitution for requirements in a major, the student should direct his/her petition to the department in which he/she is registered.

## **TIME-SHORTENED DEGREE OPPORTUNITIES**

The University of Central Florida provides a number of options by which students may shorten the time required to complete the baccalaureate degree. These options permit the university to recognize high levels of academic achievement and acquisition of knowledge prior to or during attendance at the university. Procedures which may be used include the Early Admission Program, the College Level Examination Program (CLEP), the Advanced Placement Program (A.P.P.) and the University Course Credit by Examination.

### **1. Early Admission Program**

Students who have demonstrated exceptional academic ability may be permitted to enroll as students at the University of Central Florida any time after completion of the junior year in high school. To be considered for full-time Fall Quarter Early Admission, applicants must have:

- a. Test scores near the top 15th percentile statewide or nationally (SAT—1100 or above, ACT—36 or above).
- b. "A"—"B" grades in high school.
- c. A recommendation from the student's high school counselor.
- d. A letter of permission from parents or guardian.
- e. A campus interview to ascertain the student's maturity and ability to adjust to collegiate responsibilities.

Qualified students may dual-enroll on a part-time basis, taking one or two courses while completing their high school programs. An interview and letters of recommendation from parents and principal are required in addition to a superior record.

Students desiring admission prior to high school graduation should contact the Admissions Office for an appointment.

### **2. College Level Examination Program (CLEP)**

The University of Central Florida grants university credit for examinations taken under the CLEP program provided the score obtained is at the 50th percentile or above on the National Sophomore CLEP norms.

The University of Central Florida will award up to 67½ quarter hours of university credit under the CLEP program. (See page 47.)

### 3. Advanced Placement Program (A.P.P.)

Students who have participated in the Advanced Placement Program in high school and received a score of three (3), four (4) or five (5) on the national examinations will receive from 4 to 8 quarter hours of college credit in each of the appropriate subject areas. Consult your high school guidance counselor or write to the Educational Testing Service, Princeton, New Jersey 08540, for additional information.

### 4. University Course Credit by Examination

Regularly enrolled \*undergraduate students at the University of Central Florida may obtain credit for specific university courses through Departmental Examinations. Those who feel they have acquired the knowledge and/or skills of a specific university course should contact their advisor and the chairman of the department in which the course is offered to arrange for an examination. Degree credit will be awarded for those courses successfully completed by departmental examination. Credit by examination cannot be used to raise a grade in a course previously completed or to reduce the last 45 q.h. of the residency requirement. *Credit by examination shall not be given for any course lower in content than courses in the same discipline (i.e., with the same rubric) in which a student is currently enrolled or which he/she has already completed.* Permission to take an examination is approved by the chairman of the department and the dean of the college in which the course is offered. Standard forms requesting university credit by examination may be obtained from the Registrar's Office by presentation of an I.D. card. (See page 43.)

\* Excludes transient and non-degree students.

## UNIVERSITY OF CENTRAL FLORIDA CLEP POLICY

CLEP credit may be earned by the following methods—CLEP general examinations, CLEP general examination subtests and CLEP subject examinations. A student may earn a maximum of 67½ quarter hours (45 semester hours) of credit through this program. Successful completion of CLEP examinations means performance at or above the 50th percentile.

Awarding CLEP credit is subject to the conditions listed below.

1. Credit may be awarded in the CLEP general examination area, CLEP general subtest area, or CLEP subject examination area provided the student: (a) has not previously received comparable college course credit in the CLEP examination area, (b) does not receive comparable college course credit in the CLEP examination area in the same quarter the examination is taken or in a subsequent quarter, (c) has not previously completed a more advanced course in the examination area, and (d) does not complete a more advanced course during the quarter in which the CLEP examination is taken.
2. Partial credit may be awarded in two of the CLEP general examination subtest areas (Humanities and Social Sciences). Partial credit may be awarded to students who have course duplication in one subtest area but not in the other subtest area (e.g., a student has com-

pleted HUM 2000 but has not completed Introduction to Literature or a more advanced literature course). In such a situation the student would be eligible to receive credit in the literature subtest area provided that he receives a satisfactory total score and a satisfactory subtest score. The restrictions listed in Item 1 also apply to partial credit.

The following table provides information related to the CLEP general examination areas and subtest areas for which credit may be awarded. In addition, this table delineates the number of credit hours per examination, the minimum passing scaled score, the courses and other CLEP examinations which duplicate the CLEP general examinations, and the CLEP usage. Information can be secured in the Developmental Center on CLEP subject examinations for which credit may be awarded.

It is important to note that a maximum of 67½ quarter hours in any combination of extension, correspondence, CLEP, Time-Shortened Degree, and Armed Forces Service School Credits will be accepted by the University for application toward an undergraduate degree. In addition, CLEP credit cannot be used to reduce a grade point deficiency. For example, a CLEP grade cannot be substituted for a grade awarded for a previously completed course.

Examination Area	Subtest Area	Credit Hours	Minimum Scaled Score	Duplicate Courses	CLEP Usage
General Examination	English	3	50	ENGL 101, ENGL 102	Yes
	Mathematics	3	50	MATH 101, MATH 102	Yes
Subject Examination	History	3	50	HIST 101, HIST 102	Yes
	Science	3	50	SCIE 101, SCIE 102	Yes
Language Examination	French	3	50	FREN 101, FREN 102	Yes
	Spanish	3	50	SPAN 101, SPAN 102	Yes

**CLEP General Examinations, Maximum Credit Hours, Minimum Passing Scaled Scores, Courses and Examination Which Duplicate the CLEP General Examinations and Recommended CLEP Usage**

CLEP GENERAL EXAMINATION*		Maximum Qtr Hours		Minimum Passing Scaled Scores		Courses and Examinations which duplicate the general examination text area		CLEP usage
Area	Subtest Areas	Gen Exam	Subtest	Total*	Subtotal	UCF Course	Other Sub. Exams	
English Composition		9		494		REA 1505: Vocabulary Study ENC 1103: Composition I	English Comp	4 QH Comp req 5 QH General Elective (Lower Division)
	Literature		4		489	Intro to Literature**		4 QH Cult & Hist Foundation Any Lit req
Humanities			4	497	50	Intro to Art** HUM 2200: W. Hum Survey MUL 3011: Enjoyment of Music		4 QH Cult & Hist foundation Western Hum Survey req
	Fine Arts						1 QH General Elective (Lower Division)	
Mathematics		9				Remedial or Intro Math* MGF 1124: Prin. of Math MAE 1810: Elem School Math I MAT 1024: Fund Algebra		4 QH Math Sci Math req 5 QH General Elective (Lower Division)
Natural Science	Biology		4.5		50	BSC 1020C Bio Principles	Biology	4.5 QH Sci Environment Bio Sci req
	Physical Science		4.5		49	Chemistry & Society** OCE 1012: Oceanography & Space PSC 1512: Physical Sci		4.5 QH Sci Environment Phy Sci req
Social Science History	History	9	4	488	49	ELH 2002: West Culture AM HIST: U.S. History Survey**	Western Civilization	4 QH Cult & Hist foundation: Hist req
	Social Science		4		50	SOC 2000: General Soc. POS 2041: Am Nat Govt. ECO 2000 Economics & Man	Intro. to Sociology Am. Govt.	QH Soc Sci Either SOC 2000 POS 2041 OR ECO 2000 req
								1 QH General Elective (Lower Division)

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- \* The minimum total score must be attained before subscores can be used for awarding credit.
- \*\* Not currently offered at the University of Central Florida.



## DEGREE REQUIREMENTS

Each student is responsible for reading and understanding the degree requirements as stated in the catalog under which he plans to graduate.

### UNDERGRADUATE

The requirements for a major, including the University graduation requirements, must be met by each student who receives a degree from the University of Central Florida. The minimum bachelor degree requirements for all students are as follows:

A minimum of 180 academic quarter hours credit with at least a "C" average (2.0 GPA) for all course work attempted (both UCF and overall).

A minimum of 90 quarter hours of work taken for the bachelor's degree must be earned in a senior institution.

A minimum of 72 quarter hours of work taken for the bachelor's degree must be taken in 3000-level courses or above.

A minimum of (and the last) 45 quarter hours must be earned in residence at UCF. Credit by examination may not be used to satisfy this requirement.

A maximum of 67½ quarter hours in any combination of extension, correspondence, CLEP, Time Shortened Degree and Armed Forces credits accepted by the University may be applied toward an undergraduate degree. The acceptance of credit for degree purposes is subject to review by the college standards committee and may differ from college to college. Additional quarter hour credit may be granted by examination given at UCF.

A student entering UCF after September 1, 1976 with fewer than 90 accepted quarter hours of credit upon admission must earn 15 quarter hours prior to graduation by attending one or more summer quarters at a university in the State University System.

A student has the option of fulfilling the course requirements for graduation under any single UCF Bulletin in force during his most recent period of continuous attendance. The use of a combination of Bulletins to fulfill degree requirements is not permitted. Should his attendance be interrupted, for more than two consecutive quarters, his continuous attendance would begin with his most recent admission. The university reserves the right to discontinue course offerings at any time. Students meeting graduation requirements outlined in an earlier catalog will be required, with prior approval by the dean, to substitute alternate courses for those no longer offered. Except for the foregoing, the Administrative and Academic Policies of the current Bulletin will be considered official for graduation. A Florida community college graduate may elect to use the UCF Bulletin in force at the beginning of his most recent continuous attendance at the community college provided his attendance continues uninterrupted including his transfer to UCF.

## GRADUATE

The following University-wide graduate degree requirements must be met by each student who receives a master's degree from the University of Central Florida. The minimum master's degree requirements are: at least 45 quarter credit hours of graduate work, with a minimum average of "B" for all courses attempted and at least one half of the minimum required course work must be numbered 6000 or higher.

Additional graduate program degree requirements are specified in this Bulletin in the section on Graduate Studies in the graduate program section of each of the individual colleges.

## DEGREES OFFERED

### ASSOCIATE OF ARTS DEGREE

The University of Central Florida students who satisfactorily complete 90 quarter hours of acceptable college work with UCF and overall grade point average of 2.0, may apply to the Registrar's Office for an Associate of Arts Degree. The required 90 quarter hours must include all of the basic requirements of the Environmental Studies Program and the last 30 credits must have been earned in residence at UCF.

The Associate of Arts Degree is awarded on application only, and an application should be made in the quarter in which the requirements for the degree will be satisfied or any time thereafter prior to the completion of the baccalaureate degree. Once the student has made application for the A.A. degree, the Registrar will notify the Office of Academic Affairs for verification of requirements. When the Registrar is notified of verification, the Associate of Arts Degree certificate will be forwarded to the recipient.

## UNDERGRADUATE

The University offers the degrees of Bachelor of Arts, Bachelor of Engineering Technology, Bachelor of Fine Arts, Bachelor of Science, Bachelor of Science in Business Administration, Bachelor of Science in Engineering, and Bachelor of Science in Social Sciences. These degrees are available in the following Colleges, with major or areas of specialization as indicated:

### College of Business Administration

Bachelor of Science in Business Administration (B.S.B.A.)

*Majors:* Accountancy, Economics, Finance, General Business Administration, Management, Marketing

### College of Education

Bachelor of Arts (B.A.)

*Major:* Elementary Education

*Major:* K-12 with specializations in Library Media Specialist, Physical Education, Visual Arts Education

*Major:* Secondary Education with specializations in comprehensive Business Education, English Language Arts, Foreign Language, Mathematics, Science Education, Social Science, Speech, Technical/Vocational

## **College of Engineering**

Bachelor of Science in Engineering (B.S.E.)

*Majors:* Civil Engineering, Electrical Engineering, Engineering Mathematics and Computer Systems, Environmental Engineering, Industrial Engineering, Mechanical Engineering

Bachelor Engineering Technology (B.E.T.)

*Major:* Engineering Technology

## **College of Health Related Professions**

Bachelor of Arts (B.A.)

*Major:* Communicative Disorders

Bachelor of Science (B.S.)

*Major:* Medical Record Administration, Sciences, Respiratory Therapy

## **College of Humanities and Fine Arts**

Bachelor of Arts (B.A.)

*Majors:* Art, English, Film, Foreign Languages (General), French, Spanish, History, Humanities and Fine Arts, Music, Music Education, Philosophy, Theatre

Bachelor of Fine Arts (B.F.A.)

*Major:* Art

## **College of Natural Sciences**

Bachelor of Science (B.S.)

*Majors:* Biology, Botany, Chemistry, Computer Science, Forensic Science, Limnology, Mathematics, Microbiology, Physics, Statistics, Zoology

## **College of Social Sciences**

Bachelor of Arts (B.A.)

*Majors:* Allied Legal Services, Anthropology, Communication, Criminal Justice, Economics, Film (RTV), Journalism, Political Science, Psychology, Public Administration, Radio-Television, Social Work, Sociology, Speech

Bachelor of Science (B.S.)

*Major:* Social Sciences

## **Office of Academic Affairs**

Bachelor of Arts (B.A.)

*Major:* General Studies

Bachelor of Science (B.S.)

*Major:* General Studies

## **GRADUATE**

The University offers graduate degrees in the following colleges:

### **College of Business Administration**

Master of Arts (M.A.)

Applied Economics

Master of Business Administration (M.B.A.)

Master of Science (M.S.)

Accountancy

## **College of Education<sup>1</sup>**

Master of Arts (M.A.)

Master of Education (M.Ed.)

Administration and Supervision

Elementary Education including specializations in Exceptional Child,  
Reading Specialist

Guidance

School Psychology (M.S.)

K-12 with specializations in Library Media Specialist, Music Education,  
Physical Education, Reading Specialist, Visual Arts Education

Secondary Education with specializations in Business Education,  
English Language Arts, Foreign Languages, Mathematics, Science,  
Social Sciences, Speech, Vocational Education

Education Specialist (Ed.S.)<sup>1</sup>

Doctor of Education (Ed.D.)<sup>1</sup>

## **College of Engineering<sup>2</sup>**

Master of Science (M.S.)

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

Master of Science in Environmental Systems Management (M.S.E.S.M.)

## **College of Humanities and Fine Arts**

Master of Arts (M.A.)

English

## **College of Natural Sciences**

Master of Science (M.S.)

Biological Science

Computer Science

Industrial Chemistry

Mathematical Science

## **College of Social Sciences**

Master of Arts (M.A.)

Communication

Master of Science (M.S.)

Clinical Psychology

Community Psychology

Industrial Psychology

Master of Public Policy (M.P.P.)

<sup>1</sup> The College of Education through cooperative programs offers work leading to Educational Specialist and Doctor of Education degrees from Florida Atlantic University and the University of Florida. Information about applications, admission and regulations are available from the College of Education.

<sup>2</sup> The College of Engineering through a cooperative program offers work leading to Doctor of Philosophy: Electrical Engineering from the University of Florida.

## **REQUIREMENTS FOR TEACHER CERTIFICATION**

Before a person can teach in the elementary and/or secondary schools in Florida he or she must be certified by the Florida Department of Educa-

tion. The certification requirements in Florida include 3 basic components:

### **I. GENERAL PREPARATION**

Courses included in this category are normally classified as general education (i.e., Environmental Studies Program) course. A graduate with a Bachelor's degree from an accredited institution shall be considered to have met the General Preparation requirements.

### **II. TEACHING SPECIALIZATION**

Courses included in this category are normally classified as the major area in a student's college program. However, not all college majors are included in the certification laws. Section 7 through 36 of the Florida Requirements for Teacher Certification, January 30, 1968, describe the major areas eligible for teacher Certification and each section has an outline for any special subject requirements in the TEACHING Specialization.

### **III. PROFESSIONAL PREPARATION**

There are two means by which students can complete a program in Professional Preparation. They are:

1. The College of Education Career Teacher Program (i.e., a major in the College of Education).
2. The Alternate Basic Certification Program (i.e., a major in some other college).

Students at the University of Central Florida may achieve teacher certification by either of the following methods:

1. Completing the College of Education Program whereby students will automatically be eligible for a Florida Teacher's Certificate.
2. Completing a degree program in another college within the University and, at the same time, satisfying all requirements needed for certification.

## **QUARTER HOURS EXPLAINED**

The graduation credit value of each course of instruction is stated in terms of quarter hours. A quarter hour of credit represents one class hour of work (or two or more laboratory hours of work) per week for a quarter.

Classes may be offered for a five-week period during the summer quarter. Two class hours of work (or four or more laboratory hours of work) per week are required to represent a quarter hour of credit.

## **GRADING SYSTEM**

The University will utilize an alphabetic grading system. This system, with a grade point equivalent per quarter hour, is as follows:

A	— Excellent	4 grade points
B	— Good	3 grade points
C	— Average	2 grade points
D	— Passing	1 grade point

F	— Failure	.....0 grade point
W	— Withdrawn	.....0 grade point
I	— Incompleted	.....0 grade point
X	— Audit (no credit)	.....0 grade point
S	— Satisfactory (with credit)/Satisfactory Progress (Research, Thesis, or Dissertation)	.....0 grade point
U	— Unsatisfactory (no credit)	.....0 grade point
R	(followed by grade) — Subsequently repeated (no credit)	.....0 grade point

The grade point average (GPA) is the average number of grade points per quarter hour attempted and is computed by dividing the total number of grade points assigned by the total number of quarter hours attempted, less hours resulting from W, X, and I grades. The grade point average for graduation requirements is 2.0 (C) and will be computed on the student's total academic program.

## INCOMPLETE GRADE

A grade "I" (incomplete) is assigned by the instructor when a student is unable to complete a course due to extenuating circumstances, and when all requirements can clearly be completed in a short time following the close of regular classes. The Registrar's Office must be notified of the appropriate grade to be assigned no later than the end of the eighth week (see Academic Calendar) of the quarter immediately following that in which the "I" was assigned. Failure to complete course requirements by the end of the eighth week of the quarter may, at the discretion of the course instructor, result in the assignment of an "F" grade. It is the student's responsibility to arrange with the instructor for the removal of the "I" grade. The grade of "I" becomes a part of the student's permanent record if not removed by the end of the eighth week of the next successive quarter. A student may register for a course in which an "I" was received, but no repeat "R" action will be made on his permanent record.

## HONORS

It will be the policy of the University to confer baccalaureate honors recognition at graduation upon those students who attain a grade point average which is in the upper 15% of the range established by all students graduating in the same college during the previous two years. In no case will honors recognition be awarded to a student with a grade point average less than 3.0.

Honors awarded will be:

**Summa Cum Laude** for those students in the upper 5%.

**Magna Cum Laude** for those students in the upper 10%, but not in the upper 5%.

**Cum Laude** for those students in the upper 15%, but not in the upper 10%.

For the purposes of establishing honors criteria grade point average reference points will be established **annually** for each college at the end of

the summer quarter. Grade point average reference points will be determined by ranking graduates of the previous two years in each college and establishing the minimum grade point averages of students ranked in the upper 5%, 10%, and 15%, respectively, in that college. These reference points will be used during the subsequent Fall, Winter, Spring, and Summer quarters to determine who will receive honors recognition at graduation.

To receive honors recognition, students must have completed a minimum of 72 quarter hours at UCF. All UCF and transfer credit (if any), including those received in the quarter of graduation, will be used to determine official honors for entry on the student's permanent academic record. The quarter of graduation will be excluded in determining honors for listing in the commencement bulletin, as it is printed before final grades are reported, and therefore a student qualifying for honors recognition at commencement may or may not qualify for honors on his academic record.

## **DEAN'S LIST**

The Dean's List is recognition of scholastic honors for undergraduate students who register for and complete at least 12 Quarter Hours with a 3.4 GPA and no grade less than "C" during a quarter.

## **REPEAT POLICY**

*UCF Courses.* A student may register to repeat a UCF course at any time prior to completion of the baccalaureate degree. Both grades will be recorded on the student's official transcript and averaged in his grade point average. Hours for completion may be used only once toward degree requirements.

*Transfer Courses.* If a transfer student takes an equivalent course at UCF which was previously completed at another institution or completes the same course twice at another institution, both grades will be utilized in calculating the student's grade point average. However, in keeping with the Articulation Agreement's Forgiveness Policy (Utilizing only the last grade in the GPA), a Florida state supported community college's forgiveness will be honored for students who receive an A.A. Degree.

## **SCHEDULE CHANGES— Add-Drop Policy**

*Add:* Students may add a course during the official Add-Drop Period (the first three to five days of each quarter—see calendar). After the add-drop period, no course may be added.

*Drop:* Students may drop a course during the official Add-Drop Period (the first three to five days of each quarter—see calendar). The fact that the student was enrolled in a class so dropped will not appear on the permanent record. Approval of the student's faculty advisor is necessary before any course change. For withdrawal after the add-drop period, consult the withdrawal Policy.

## ACADEMIC STANDING

It is of major concern to the University that each student should make reasonable progress toward his educational goal. A guidance and counseling service is provided to aid all students at all times, but special attention is given when a student is not progressing satisfactorily. Every effort will be made to aid him in the resumption of satisfactory progress.

Acceptable academic standing at the University is reserved for those students who achieve and retain a GPA of 2.0 (C) or higher. A student remains in good standing academically as long as he achieves normal academic progress required for graduation.

## STUDENT CLASSIFICATIONS

Students will be classified by level, on the basis of quarter hours satisfactorily earned:

<b>FRESHMAN:</b>	Through 44 hours.
<b>SOPHOMORE:</b>	45-89 quarter hours.
<b>JUNIOR:</b>	90-134 quarter hours.
<b>SENIOR:</b>	135 or more quarter hours, prior to completion of baccalaureate requirements.
<b>POST BACCALAUREATE:</b>	Any student enrolled in courses, regardless of course level, who has a baccalaureate degree but has not been admitted to a graduate program.
<b>GRADUATE:</b>	Any student enrolled in graduate courses who has been admitted to a graduate program.

Other student classifications are as follows:

<b>AUDITOR:</b>	A student registered for any credit course who is not seeking credit.
<b>CO-OP STUDENT:</b>	A student enrolled in the Cooperative Education Program is a full-time student during the work training quarter. There is no break in the Co-Op school calendar. The Co-Op student starts his work training quarter the day after the final day of school and continues through the day before the first day of school for the following quarter. See Veteran's Benefits for Co-Op's.
<b>SPECIAL STUDENT:</b>	A student of demonstrated academic ability who does not meet the regular requirements for admission (Early Admission, non-degree, transient and auditor).
<b>TEMPORARY:</b>	A student who applied on time and is permitted to register and attend class pending completion of his admissions file.
<b>TRANSIENT:</b>	(1) A student temporarily registered (for one quarter) at the University of Central Florida with the approval of some other university or college where he is regularly enrolled, or (2) a UCF student temporarily in attendance at another university or college, with the approval of UCF.



**NONDEGREE:** A student earning credit, but not working on a degree program.

**PROVISIONAL:** A student entering from a regionally unaccredited high school, college or university may be admitted on provisional status where appropriate. By obtaining a 2.0 GPA (C average) or better at the end of the first quarter of attendance, the provisional status will be removed. Earning less than a "C" average the first term would result in academic probation status.

## **VETERAN'S BENEFITS**

Veteran-students eligible to receive VA educational benefits must make initial contact with the Office of Veteran's Affairs, Student Affairs Suite, Administration Building, Phone 275-2707.

Undergraduates must carry at least twelve (12) quarter hours for full VA benefits, nine (9) quarter hours for three-fourths VA benefits and six (6) quarter hours for one-half VA benefits. Five (5) quarter hours or less will be reimbursed to the veteran at cost of instruction only. Those students with an undergraduate degree who are classified as post baccalaureate must meet the same criteria as undergraduates. Veteran-students fully accepted in a graduate degree-seeking program are required to carry nine (9) quarter hours for full benefits, seven (7) quarter hours for three-fourths, and five (5) quarter hours for one-half.

Veterans in a Co-Op status can choose to draw VA Benefits for this period of eligibility as follows:

- (1) During on-campus enrollment the use of eligibility time is the same although the allowance is paid based on one-fourth, one-half, three-fourths, or full-time status. No allowance, or the use of eligibility time, occurs during the off-campus Co-Op work training quarter.
- (2) A Co-Op Veteran may elect to accept eighty percent (80%) of his VA Benefit Allowance for each calendar month of a yearly basis. Although this option does not extend a veteran's eligibility time, it does pay all benefits except twenty percent (20%) providing he is enrolled for the minimum number of credit hours to qualify for full-time benefits during his on-campus quarter.

## **ACADEMIC TERMS AND ACTIONS DEFINED**

Quarter Average	Grade Point Average on work attempted during any given quarter.
UCF Average	Grade Point Average on all work attempted while in attendance at the University of Central Florida.
Overall Average	Grade Point Average on all work attempted since entering college, including work from all previously attended institutions.
Academic Warning	First action taken when a student's UCF overall GPA drops below 2.0. A UCF student is placed on

	Academic Warning only once. Subsequent action will be Academic Probation. A student may be admitted on Academic Warning.
Academic Probation	Action taken if a student on Academic Warning does not achieve a 2.0 GPA or better in the subsequent quarter. This action is also taken when a student who has previously been on Academic Warning lets his overall or UCF GPA drop below 2.0. Academic Probation will continue until such time as the current quarter, overall, and UCF cumulative GPA's reach 2.0 or better. A student may be admitted on Academic Probation.
Disqualified (1st Suspension)	A student on Academic Probation is Disqualified when he fails to achieve a 2.0 GPA during the subsequent quarter. A student who is Disqualified may not enroll at the University for two quarters following disqualification. <i>Readmission after the mandatory two quarters out is not automatic.</i> A disqualified student must apply for readmission. His total record will then be reviewed and action on his readmission taken by the University Admission and Standards Committee.
Exclusion (2nd Suspension)	If a student is readmitted after an appeal to the Admissions and Standards Committee following disqualification and still fails to achieve a 2.0 GPA, he is excluded from the University. Exclusion is most serious and readmission will not be considered prior to a minimum suspension period of one academic year.
Appeal	Every student has the right to Appeal any of the preceding four academic actions either in person or in writing. The Appeal should be made to the Admissions and Standards Committee. Contact the Director of Admissions for procedure.
Readmission	If a student has dropped out of the University <i>for any reason</i> , he must reapply on the appropriate form (see calendar for deadline).

First time UCF students may be admitted on either Academic Warning or Academic Probation at the discretion of the Admissions Officer or the Admissions and Standards Committee. Academic Warning and Probation are intended to inform the student making unsatisfactory progress of his need to alter study habits and to seek additional counseling. Early recognition will indicate to the student and to his parents the possible jeopardy to his academic goals, and will also allow an opportunity to demonstrate acceptable performance.

## **EARNING CREDIT WHILE DISQUALIFIED OR EXCLUDED**

A student disqualified or excluded while a Freshman or Sophomore and who subsequently receives an A.A. degree with a "C" average (2.0 GPA) on

all college work attempted from a Florida community college may be readmitted to the university with credit earned accepted in accordance with standard University policies.

A student who attends other colleges or universities following disqualification will be classified as a transfer student and his readmission will be based on his total educational record.

### **WITHDRAWAL POLICY—From a Course (After Add-Drop Period) or from the University.**

Students may withdraw from classes without grade penalty until the end of the fifth week of any regular academic term or until the midpoint of any term of less than 10 weeks duration. No withdrawal is permitted after the above times except in extraordinary circumstances when the student is precluded from continued class attendance. Upon request, the course instructor shall provide the student with an assessment of the student's performance in the course prior to the last day for withdrawal.

Forms for *Withdrawal in Good Standing* may be obtained at the Registrar's Office and must be returned to the Registrar. A "W" will appear on the permanent record of a student who formally withdraws from a course. Withdrawal policies and procedures apply to part-time as well as to full-time students and are effective whether the student withdraws from one course or from the University. A student leaving the University during or at the end of the quarter with financial obligations to the University unfulfilled (for example, library fines, breakage fees, and so forth) will have the statement "Not in Good Standing" entered on the permanent record.

### **GENERAL EDUCATION REQUIREMENTS CERTIFICATION**

An undergraduate student who has not completed requirements for the Associate of Arts degree and who wishes to transfer to another Florida state university can have his transcript stamped GENERAL EDUCATION REQUIREMENTS MET if he has completed UCF's Basic Environmental Studies Program of 54 quarter hours with a GPA of 2.0 or better. (See page 66 for program outline.) UCF will accept a similar statement on transcripts received from Florida community colleges or other institutions in the State University System in lieu of completion of the University's Basic Environmental Studies Program.

### **STEPS IN THE GRADUATION PROCESS UNDERGRADUATE AND GRADUATE**

A student should apply to the Registrar for graduation before registering for his final quarter of attendance and not later than the last day of the Add-Drop Period for that quarter.

Upon completion of 150 undergraduate quarter hours of course work, the student is notified to report to the Registrar's Office.

The following steps are required of a student who is near or in his/her last quarter before graduation:

1. The student must complete an "Intent to Graduate" form, available in the Registrar's Office, not later than the last day of the Add/Drop period in the quarter in which graduation is anticipated.
2. The candidate for graduation must initiate a checksheet for graduation with his/her advisor. At the end of the quarter the checksheet will be completed and forwarded for approval to the Dean of the college in which the student is enrolled. If approved, the Dean will forward the checksheet through appropriate channels to the Registrar's Office for inclusion in the student's permanent university record.

Successful completion of the degree requirements stated in the bulletin under which the student has indicated he wishes to graduate (following the rules stated on page 47) shall constitute a recommendation of the respective college faculty that the degree be awarded, assuming the student is in good standing in the University.

A student must complete all requirements for a baccalaureate or graduate degree no later than the date of the quarter graduation ceremony. A student registered as a transient student at another institution during the last quarter before graduation must complete all courses by the date of UCF's graduation and must provide an official transcript of work taken no later than 5 days after the UCF graduation date.

## **DOUBLE MAJORS**

Any UCF student working toward a single baccalaureate degree and who satisfies all requirements for two majors leading to that degree will have one diploma awarded, and both majors will be indicated on his permanent record. Majors under each degree are listed on pages 48-50. For example, a student who satisfies all requirements for a major in Political Science and for a major in History would be awarded a single Bachelor of Arts degree with the two majors indicated on his permanent record. Similarly, if a student wishes to pursue two majors leading to different baccalaureate degrees (e.g., Psychology which leads to a Bachelor of Arts degree and Biology which leads to a Bachelor of Science degree), he must satisfy the requirements of both majors. Although both majors will be indicated on his permanent record, only one diploma will be awarded (e.g. B.A. in Psychology or B.S. in Biology, at the student's option).

## **SECOND BACCALAUREATE DEGREE**

Any UCF student desiring to obtain two baccalaureate degrees must meet the requirements for both degrees and earn a minimum of 225 quarter hours. A separate diploma will be awarded for each degree.

Transfer graduates from accredited four-year institutions who apply for admission to work toward a second baccalaureate degree at the University of Central Florida must meet the regular graduation requirements of the major department and the 45-quarter-hour residency requirement. Students holding the baccalaureate degree from an accredited institution are considered to have completed all Environmental Studies Requirements.

## MINORS

Minors in a limited number of programs have been authorized for certification with baccalaureate degrees beginning August 25, 1978, graduation. Minors, like majors, must be certified at the same time of certification for graduation with a baccalaureate degree. Certification will not be made at a later time even if additional courses have been completed unless an additional baccalaureate degree is certified. At the Registrar's Office minors must be indicated on Intent to Graduate Cards by the applicants.

# GRADUATE STUDIES

**Acting Dean:** *F. Juge, AD 243, Phone 275-2731*

## GENERAL INFORMATION

The Office of Graduate Studies consists of the Associate Vice President for Academic Affairs/Dean for Graduate Studies, an associate or assistant Dean for Graduate Studies, and a Graduate Council of appointed representatives from each college and the Faculty Senate. The Office of Graduate Studies is responsible for the establishment and subsequent monitoring of minimum University-wide standards concerning graduate admission and matriculation. It also coordinates the graduate programs of the various colleges of the University. However, responsibility for the detailed operation of the various graduate degree programs is vested in the individual colleges.

A listing of graduate degree programs is shown on page 49. For particulars concerning individual graduate programs, consult the index for appropriate page referrals.

The following general information pertains primarily to masters programs. For information concerning cooperative doctoral programs, consult the respective graduate program coordinators in Education and Engineering.

## ADMISSION TO GRADUATE STUDIES APPLICATIONS

Applications for admission to graduate study may be obtained from the Registrar, or from the Dean of the College offering the program. Applications which appear to meet minimum standards for admission are referred to the Dean of the appropriate College for his recommendations. All applications should be submitted to the Admissions Office.

Applications will not be considered without complete official transcripts showing the last 90 hours of undergraduate courses taken for the baccalaureate degree and all graduate work attempted. All transcripts must be received directly from the Registrar of the institution in which the work was attempted.

## ADMISSION STATUS

Normally a student is admitted on a Post-Baccalaureate status until his file is complete and the program coordinator has had an opportunity to review his credentials. Before the completion of 12 credit hours in this category, a student must be admitted either to Graduate Status (Regular or Provisional) or be informed of conditions to be met before admission. Under no circumstances should a student undertake more than 12 hours in a Post-Baccalaureate status.

## POST-BACCALAUREATE STATUS

Students may be admitted in the post-baccalaureate category under any of three conditions:

- A. Temporarily, because their file is incomplete.
- B. They do not wish to pursue a degree program.
- C. They do not meet the standards for regular admission.

Post-baccalaureate status is not a degree-earning category. Whereas a student may earn credit in any number of courses, these hours will not necessarily lead to a degree. If a student is, however, subsequently admitted to degree status, 12 UCF or SUS quarter hours of post-baccalaureate work (see Transfer of Credit) may be considered for transfer into the degree program.

If the student is placed in the post-baccalaureate category because he does not have a sufficient grade point average or examination (GRE or GMAT) score, admission graduate status may be attained only by repeating the examination and making an acceptable score or by being selected for provisional status. Post-baccalaureate hours cannot be used to raise an insufficient undergraduate point average.

### **GRADUATE STATUS—REGULAR**

To be eligible for consideration as a regular, degree-seeking student, the student must file official GRE (or GMAT) scores and transcripts showing degrees earned (a baccalaureate degree being the minimal standard) and any credit beyond the baccalaureate degree, and he must meet the following University and program minimum admission requirements:

#### **A. University Admission Requirements**

##### **1. Baccalaureate degree with one of the following:**

- a. Either a grade point average (GPA) of 3.0 (4.0 = A) for the last 90 quarter hours credited toward the earned Baccalaureate degree from an accredited institution, or
- b. Quantitative-verbal GRE score of 1000 or higher. Applicants to the College of Business Administration must submit a GMAT score of 450 or higher in lieu of the GRE.

or

##### **2. Graduate degree from an accredited institution.**

#### **B. Program Admission Requirements**

The applicant must be accepted by the department or administrative unit offering the degree program to which the application is made. In any degree program, admission criteria above and beyond University minimums may be required. In the event enrollment in a program must be limited, additional criteria may be developed beyond those described in this catalog. Prior to submitting an application, students are expected to familiarize themselves with the program admission requirements specified in the respective degree program sections of this catalog (or in supplementary material available from the degree program).

### **GRADUATE STATUS—PROVISIONAL**

Individual programs may elect (but are not required) to admit on a provisional basis a very limited number of students who do not meet minimum University admission requirements. Provisional admission is based upon evidence of academic and professional promise. If a course

work average of "B" or higher is earned upon the completion of the first 12 quarter hours of graduate program course work, provisional students may then be considered for acceptance into the degree program as regular graduate students. To apply for provisional admission, students should file an application with the appropriate graduate degree program coordinator.

### **APPEAL PROCEDURE FOR GRADUATE STUDENTS**

A student denied admission to graduate status has a right to appeal if the student meets the minimum SUS standards but does not meet the more stringent program requirements. The student should contact the Office of Graduate Studies for the procedure necessary to appeal a denial.

### **GRADUATE RECORD EXAMINATION/GRADUATE MANAGEMENT ADMISSION TEST (GMAT) REQUIREMENT**

All graduate programs require degree seeking applicants to submit scores on the Graduate Record Examination (GRE) or GMAT. Applicants should refer to the appropriate graduate degree program section for their particular requirements. Satisfactory scores on these examinations are determined by the College to which the application is made. UCF will accept such scores if the date of the aptitude (verbal and quantitative) test is within five years preceding application.

Applicants should write to the Educational Testing Service, Princeton, New Jersey 08540 or contact the UCF Developmental Center for information on the GRE or GMAT testing dates and locations.

### **SECOND GRADUATE DEGREE PROGRAM**

A student who has completed one graduate degree program must secure the approval of the program concerned before undertaking a second graduate program. Work taken without such approval will not count toward a graduate degree.

### **FLORIDA RESIDENCY (See page 39)**

### **TRANSFER OF GRADUATE CREDIT**

Upon petition a student may transfer a maximum of 12 quarter hours of applicable work into his Program of Study. Twelve quarter hours of work taken as a post-baccalaureate student at UCF may be transferred. If work was taken at another Florida State University System institution, up to 12 quarter hours of that may be accepted; however, only 9 quarter credits may be utilized from institutions not in the State University System.

### **INTERNATIONAL STUDENTS**

Applicants from foreign countries whose native language is not English must submit a minimum score of 520 on the Test of English as a Foreign Language (TOEFL) in addition to the GRE or GMAT. These examinations are offered periodically at test centers throughout the world by the Educational Testing Service. The TOEFL Bulletin of Information for Candidates, International Edition, and Registration Form are available at American embassies, consulates, offices of the United States Information Service or other U. S. government agencies abroad. International student enrollment is limited to the superior student and applications must be received three months prior to the start of the term desired. See catalog calendar.



## **READMISSION**

Students not registered in the previous academic quarter (exclusive of the summer term) must submit an application for readmission to the Registrar's Office approximately one month before classes begin (see academic calendar for the exact date).

## **GENERAL REGULATIONS**

### **UNIVERSITY GRADUATE PROCEDURES MANUAL**

See the current UCF Graduate Procedures Manual which is available in the Office of Graduate Studies for additional graduate procedures.

### **STUDENT RESPONSIBILITY**

The student is responsible for informing himself of all rules, regulations, and procedures required by the Office of Graduate Studies and the College offering the course or program he is pursuing. Regulations will not be waived or exceptions granted because a student pleads ignorance of the regulation or claims failure of his advisor to keep him informed.

### **EXCEPTIONS TO GRADUATE REGULATIONS**

When exceptional situations arise, petitions for special consideration may be submitted to the Graduate Council.

### **CHANGE OF MAJOR OR COLLEGE**

Any change in status of a Graduate status student is executed via a GS-1 form. Therefore, the *Change of College or Major* forms are not applicable for graduate students. The procedure is for the student to transfer his folder to the new college. The new program will then issue a GS-1 form to admit him as a graduate or post-baccalaureate status, whichever is appropriate.

The College and Major Change form should *not* be used to change graduate status students; it is used to change post-baccalaureate, non-degree majors, and undergraduates only.

### **THE TRAVELING SCHOLAR PROGRAM**

The University participates in a Traveling Scholar Program, enabling a graduate student to take advantage of special resources available on another campus but not available on his own campus: special course offerings, research opportunities, unique laboratories, and library collections.

A traveling scholar must receive the approval of his own graduate advisor and the appropriate faculty member at the host university, then be formally approved by the graduate deans at the respective institutions.

The scholar will be registered at the host university and pay regular fees there. He will receive a waiver of admission requirements and the application fee of the host university. Credit for work, which is guaranteed, will be recorded at the home university.

Normally, traveling scholars are limited to one quarter of off-campus study. They are not entitled to mileage or per diem payments but the home university may, at its option, continue its financial support in the form of fellowships or graduate assistantships without any work obligation to be discharged at either university. Appropriate forms are available in the Office of Graduate Studies.

## **STUDENT'S COMMITTEE**

The student's advisory committee (or advisor) should be influential in designing a program of study for the student. The committee will provide continual guidance and is the principal mechanism for evaluating the student's progress.

Advisors and advisory committees will be appointed by the dean of the College in cooperation with the Department or appropriate unit in which the student is enrolled. Advisory committees must have at least three (3) members.

## **STUDENT'S PROGRAM OF STUDY**

A total program of study must be established for each student prior to completion of 12 hours of graduate credits or his first quarter of full time work. This program must be developed by the student in cooperation with his advisor or committee and should be approved by the appropriate College Dean. A copy of the program and names of the student's advisor or committee members will be filed with the Office of Graduate Studies prior to the start of the student's second quarter.

## **COURSE LOADS**

Graduate students applying for assistance under Public Law 89-358 (Veterans' Readjustment Benefits Act of 1966) must register for 9 credits per quarter to qualify for certification as a full-time student. Post-baccalaureates must register for 12 credits. Normally, the maximum load for graduate students is 15 quarter hours.

## **COURSES AND CREDITS**

Courses numbered 5000-5999 are primarily for beginning graduate students. If these courses are used for an undergraduate degree, they may not be used for a graduate degree. Courses numbered 6000-6999 are exclusively for graduate students. At least one half of the course requirements of the student's graduate program of study must be at the 6000 level.

The Computer Science Program is the only exception to this course distribution requirement.

Undergraduate registration in 6000 level graduate courses is allowed only with prior approval, utilizing the Graduate Studies GS-7 form.

No more than 9 hours of 4000 level work may be utilized in a graduate program of study. Courses of 3000 level and below may not be utilized in a graduate program of study without prior permission from the Graduate Council.

No more than nine (9) hours of independent study credit will be accepted in the program of study.

## **THESIS AND NON-THESIS DEGREES**

At least 36 credits of course work must be earned exclusive of thesis for thesis degree. Thesis instructions for students are available in the Office of Graduate Studies.

At least 50% of the credits offered for the non-thesis degree must be in a single field of concentration. A research report is required for this degree.

## **CREDIT BY EXAMINATION—INDEPENDENT STUDY**

Credit by examination may be utilized to satisfy course requirements, but not credit hour requirements.

## **THESIS-LANGUAGE EXAMINATIONS**

Thesis and language examination requirements are at the option of the respective degree programs.

## **GRADES AND SCHOLARSHIP**

Acceptable grades for students pursuing graduate study are A, B and S. A student whose GPA falls below 3.0 on his graduate program of study will be considered to be on academic provisional status. After twelve hours of continued unsatisfactory performance, the student will normally be dropped from the graduate program.

A grade of D or below cannot be accepted in a graduate program of study and a grade of C cannot be accepted for a 4000-level course in a graduate program of study.

A course may be repeated for a better grade; however, no forgiveness procedure will apply. An accumulation of more than eight (8) hours of C, D, F or unresolved I work is grounds for automatic dismissal from a degree program.

## **REGENCY OF WORK**

Courses completed more than seven years prior to the quarter in which the degree is earned may not be used toward meeting degree requirements.

## **RESIDENCE REQUIREMENTS**

At least 33 credits must be earned at UCF. Residence credits may be earned through enrollment in courses offered on campus, at UCF Residence Centers or at other locations where UCF courses are taught by UCF faculty.

## **FINAL QUARTER REGISTRATION**

Students must be registered in any quarter in which UCF faculty or facilities are utilized. Unless the graduate program certifies to the Office of the Registrar that no UCF resources will be utilized, a student **must** be registered in the quarter of graduation.

## **EXAMINATIONS**

An end-of-program (final) comprehensive examination is required of all students. This examination may consist of a thesis defense or an examination of course work material or both.

## **APPLICATION FOR DEGREE**

The student must file an Intent to Graduate form in the Office of the Registrar during the first week of the quarter in which graduation is anticipated. If the student then fails to graduate that quarter, the Intent to Graduate form must be refiled in the quarter when graduation is next anticipated.

## **UCF EMPLOYMENT**

Normally the employment of full-time graduate students will be limited to a half-time work load (20 hours/week).

# ACADEMIC PROGRAMS

Each college requires work in the Environmental studies program in addition to its respective curricula.

## ENVIRONMENTAL STUDIES PROGRAM

The Environmental Studies Program presents to each student an opportunity to gain an insight into an organized body of knowledge designed to enhance the student's ability to make intelligent decisions in a world of the future. This program provides the student with an acquaintance of many of the major areas of academic inquiry. It permits the student to make a more meaningful choice of a major and provides insights into areas from which he may select courses for elective credit.

## ENVIRONMENTAL STUDIES (69 QUARTER HOURS REQUIRED)

### BASIC PROGRAM (54 QUARTER HOURS REQUIRED)

#### COMMUNICATIONS

10

(Select one course from each group)

##### I. Composition

ENC 1103

##### II. Speech

SPC 1014

##### III. Communications Options

CRW 2020, ENC 1135, ENC 3355, LIN 2200, LIN 2701, LIT 2020 or any course with the prefix SPC

### CULTURAL AND HISTORICAL FOUNDATIONS?

11-12

(Select one course from each group)

##### I. Western Humanities

HUM 2200

##### II. Humanities & Fine Arts

Any course offered by the College of Humanities and Fine Arts in Art, Literature (English or Foreign), History, Humanities, Music, Philosophy, Religion or Theatre.

##### III. History

Any course in History offered by the College of Humanities and Fine Arts.

### MATHEMATICAL SCIENCES

7-8

(Select from two groups)

##### I. Mathematics

MAC 1104, 1114, 1132, 2154, 3233, 3253, 3254, 3311, 3312, 3313; MAE 1810, 2811; MAT 1033; MGF 1124; MHF 2300

##### II. Statistics

STA 2014, 3023, 3032

### III. Computer Science

CAP 3001; COC 1100; COP 1110, 2510, 2511, 3215

### IV. Philosophy (Logic)

PHI 2130

## SOCIAL SCIENCES\*

12-13

### (Select at least one course from each group)

#### I. ECO 2000 or ECO 2023, ECO 2013

POS 2041 or POS 3001

GEO 3602 or GEO 3470

#### II. PSY 2013, PSY 2014

SOC 2000, SOC 2001

ANT 3000, ANT 3410

COM 1000

## SCIENTIFIC ENVIRONMENT

11-13

### (Select from at least two groups)

#### I. Biological Sciences

BSC 1010C, 1020C, 1030C; BOT 1010C;

MCB 2013C; ZOO 1010C, 1020

#### II. Earth Sciences

ECI 3603; GEO 1200C, 3370; GLY 1000, 1100

#### III. Physical Sciences

AST 1005; CHM 1034, 2200, 2205L, 2045, 2046, 2047; EGN 1380, 1381;

OCE 1012; PHY 2040, 2041C, 2042C, 2050C, 2051C, 2052C, 3014C,

3015C, 3016C; PSC 1512

\* After the completion of a year of foreign language, a student may substitute language for any 4 hours of credit in Cultural and Historical Foundations and 4 hours of credit in Social Sciences. The remaining hours may be used in the General Elective area of the student's major. For placement in language classes, see page 152.

## ADVANCE PROGRAM (15 QUARTER HOURS REQUIRED)

In addition to courses required to satisfy the basic Environmental Studies Program, a student must successfully complete at least one upper division course in 5 colleges other than the college in which the major is completed for a total of at least 15 quarter hours of credit. A student majoring in the General Studies program must complete an upper division course in any five of the colleges for a total of at least 15 credit hours to meet this requirement.

## MAJOR IN GENERAL STUDIES

### PURPOSE

The General Studies curriculum is a university-wide general purpose program leading to the Bachelor of Arts in General Studies or Bachelor of Science in General Studies degree. The determination of whether the Arts or Science degree shall be awarded will be determined by the course areas selected.

The program is administered through the office of the Associate Vice

President for Academic Affairs and is designed for liberal education and academic flexibility. It recognizes that, apart from the professional curricula, there are many combinations of courses which can be structured into meaningful programs to meet the needs of individual students.

The General Studies program has two main purposes:

1. It accommodates students who desire a liberal, non-professional education encompassing several fields.
2. It provides a means for students to start a productive university education while delaying decision on professional curricula until the sophomore year.

Students who are undecided as to their major may pursue the General Studies program until they can select a specific major area.

Students fulfilling the requirements for a degree in General Studies must complete either the UCF Basic Environmental Studies Program or the General Education requirement at a Florida State Junior College. In addition, 15 quarter hours of Advanced Environmental courses are required as outlined on the previous page.

The General Studies student must complete a minimum of four course area groupings in which at least three colleges are represented. A minimum of 22 quarter hours must be completed in each area with an additional 23 quarter hours to be completed in a fifth area or used to strengthen one or more of the four course area groupings. However, students choosing only four course area groupings may include a maximum of 12 quarter hours of general electives in completing their degree program.

The areas of Education and Engineering may be used twice provided a specific concentration corresponding to a traditional major is chosen for one of the area course groupings.

In addition to the University-wide degree requirements shown on page 47, a minimum grade point average of 2.0 must be achieved in each course grouping.

## **COURSE AREA GROUPINGS**

### **AIR FORCE ROTC**

**S.S.\*\***

For students who take and complete the Air Force R.O.T.C. four year or two year upper division programs.

### **HEALTH RELATED SCIENCES**

**H.R.P.\*\***

Allied Health Sciences, Communicative Disorders, Medical Record Administration, Medical Technology, Nursing, Radiologic Sciences, Respiratory Therapy and other Health Related Professions.

### **BEHAVIORAL SCIENCES**

**S.S.\*\***

Anthropology, Psychology, Sociology, and Social Welfare.

### **BIOLOGICAL SCIENCES**

**N.S.\*\***

Biology, Botany, Microbiology, and Zoology.

**BUSINESS ADMINISTRATION****B.A.\*\***

Accounting, Economics‡, Finance, General Business Administration, Management, and Marketing.

**COMMUNICATION****S.S.\*\***

Journalism, Radio-Television, Speech and general courses in Communication.

**EDUCATION\*****E.D.\***

Business Education, Library Science, Physical Education, Teaching Analysis, Vocational Education and selected courses from Elementary and Secondary Education.

**ENGINEERING****ENGR\*\***

Selected courses from the Engineering core and departmental offerings. A maximum of 9 quarter hours from the following courses may be used in the Environmental Studies and General Studies program: EGN 3842, 4843, 4844, 4814, 4033, 4813, 4823, 4824, 4815, 4825, 4832, and 5035.

**FINE ARTS****H.F.A.\*\***

Art, Music, Theatre.

**HUMANITIES****H.F.A.\*\***

English, Foreign Literature, History, Humanities, Philosophy, and Religion.

**LANGUAGES****H.F.A.\*\***

French, German, Italian, Russian, Spanish.

**MATHEMATICAL SCIENCES****N.S.\*\***

Computer Science, Mathematics, and Statistics.

**PHYSICAL SCIENCES****N.S.\*\***

Astronomy, Chemistry, Forensic Science, Geography (Physical), Geology, Physics, and general courses in the Earth and Space Sciences.

**SOCIAL SCIENCES****S.S.\*\***

Allied Legal Services, Criminal Justice, Economics‡, Geography (Social), Political Science, and Public Administration.

‡ This course shown in two areas.

\* Consult your advisor. Many ED courses require concurrent public school practicum.

\*\* The current seven colleges are: Business Administration (B.A.); Education (ED.); Engineering (ENGR.); Health Related Professions (HRP.); Humanities and Fine Arts (H.F.A.); Natural Sciences (N.S.); and Social Sciences (S.S.).

# COLLEGE OF BUSINESS ADMINISTRATION

## UNDERGRADUATE PROGRAMS

Accountancy (BSBA)  
Economics (BSBA)  
Finance (BSBA)  
General Business Administration (BSBA)  
Management (BSBA)  
Marketing (BSBA)

## GRADUATE PROGRAMS

Accountancy (MS)  
Applied Economics (MA)  
Business Administration (MBA)

# COLLEGE OF BUSINESS ADMINISTRATION

**DEAN:** *C. Eubanks*, CB 210, Phone 275-2181

**ASSISTANT DEAN:** *W. Kilbride*, CB 216, Phone 275-2136

The goal of the College of Business Administration is to assist in the maximum development of individual potential for accomplishment as a person and as a responsible member of society by preparing students for entry into professional positions in business and government. The various programs of study offered by the College are designed to assist the student in obtaining a sound academic preparation for the career of his choice and become a valuable member of society.

The degree Bachelor of Science in Business Administration with the following majors is offered by the College of Business Administration:

Accountancy	General Business Administration
Economics	Management
Finance	Marketing

## ENVIRONMENTAL STUDIES PROGRAM

The Environmental Studies Program for the College of Business Administration is similar to the general requirements for all students of the University. The College specifically recommends a number of courses for inclusion as part of the Environmental Studies Program. It is strongly recommended that students consult an advisor in the College of Business Administration before embarking on a course of study.



Students in the College of Business Administration cannot receive credit for the following course: MAN 3705, GEB 3004, ECO 2000, EGN 3842, and FIN 3100.

## COMMON BODY OF KNOWLEDGE

The following common course work required of all majors, provides a foundation in major areas of business administration.

ACC 2304	Financial Acctg I	3 hours
ACC 2324	Financial Acctg II	3 hours
	or ACC 3003 Financial Acctg	5 hours
BUL 3111	Legal Envir of Business	3 hours
ECO 2023	Prin of Micro	4 hours
ECO 2013	Prin of Macro	4 hours
MAC 1104	Coll Alg or MAC 3233 Calc	4 hours
STA 3023	Fund of Prob & Stat	4 hours
ECO 3411	Qtn Meth & Bus Dec Anl	4 hours
CAP 3001	Comp Fund for Bus App	4 hours
ENC 3352	Prof Report Writing	3 hours
FIN 3403	Finance	5 hours
MAN 3010	Mgmt & Org Behavior	3 hours
MAR 3023	Marketing	5 hours
MAN 3151	Hum Behav & Interpers Rel	3 hours
MAN 3504	Bus Oper Mgmt	3 hours
MAN 4720	Bus Policies	4 hours

## GRADE POINT AVERAGE REQUIREMENTS

For graduation the student must have maintained a minimum 2.0 GPA in course work taken in the College of Business Administration and a minimum 2.0 GPA in the course work required in the major.

## STUDENT LOAD—MAXIMUM

A student who is enrolled in 15 quarter hours of course work is considered to be carrying a normal academic load. Students desiring to take 19 or more quarter hours of course work must obtain permission from the department chairperson of their major area.

## COMMUNITY/JUNIOR COLLEGE TRANSFERS

Community/Junior College students who plan to transfer to the College of Business Administration at the University of Central Florida are advised to:

1. Complete the entire university-parallel program at the Community-Junior College (the Associate of Arts Degree) including:
  - A. the general education requirements prescribed by the Community/Junior College.
  - B. the one-year accounting and economics sequences (sophomore year).
  - C. a course in College Algebra
  - D. a course in Statistics

- Professional courses should not be taken at a community/junior college in the areas of Management, Marketing, Real Estate, or Finance. These professional areas are third and fourth year course areas in the College of Business Administration and cannot be satisfied with Community/Junior College course.

## MINOR

The College of Business Administration offers a minor consisting of 29-30 quarter hours.

Business Administration.

Required courses: ACC 3003; ECO 2023, 2013; FIN 3403; MAN 3010; MAR 3023; one 3000/4000 level business course elective.

## DEPARTMENT OF ACCOUNTANCY

**Chairman:** C. Avery, CB 403, Phone 275-2463

**Faculty:** Busch, Chang, S. Cossaboom, Danese, Fischer, Grierson, Johnson, Lanier, Marquardt, Paton, Phillips, Poor, Powell, Salter, Shepard

Accountancy is normally selected as a major by the student who is preparing for industrial, governmental, or public accounting. The size and nature of the employing organization determines the scope of the industrial accountant's activities but, broadly defined, the following duties are illustrative: design and installation of accounting systems, preparation of financial statements and reports, cost accounting, internal auditing, interpretation and analysis of budgets, and preparation of tax returns.

In today's complex society, the Certified Public Accountant performs a specialized professional service to investors, bankers, businesses and governmental units of all sizes. The CPA's best known function is to audit—or, to conduct an objective examination and analysis of a company's financial statements for the purpose of expressing his independent opinion as to whether or not the statements fairly present the organization's financial position and results of operations.

## BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: ACCOUNTANCY

### Degree Requirements

- University graduation requirements  
(See page 47)
- Environmental Studies Program  
(See page 66)
- Required Courses
  - Business Common Body of Knowledge
  - |          |                             |         |
|----------|-----------------------------|---------|
| ACC 3101 | Intermediate Accounting I   | 3 hours |
| ACC 3121 | Intermediate Accounting II  | 5 hours |
| ACC 3141 | Intermediate Accounting III | 5 hours |
| ACC 3401 | Cost Accounting             | 4 hours |

ACC 4201	Advanced Accounting	5 hours
ACC 4421	Cost Analysis	4 hours
ACC 4501	Federal Income Tax Accounting	5 hours
ACC 4601	Auditing	5 hours
ACC 4934	Current Selected Topics	2 hours
ECP 4703	Managerial Economics	3 hours

#### 4. Restricted Electives

Special qualifications for satisfying this program's requirements:

- A minimum grade of "C" must be earned in each accounting course completed
- A transfer student to this program must take a minimum of eighteen (18) quarter hours or four (4) courses in accountancy at the University of Central Florida.

#### 5. Electives

Total Quarter Hours Required 180

## DEPARTMENT OF ECONOMICS

**Chairman:** *F. Raffa*, CB 444, Phone 275-2465

**Faculty:** *Haulman, Hicks, D. Hosni, Joseph, Kilbride, Klages, Shockley, White, Winchester, Xander*

The discipline of economics is defined in several ways. It is most frequently described as the study of how man uses limited resources to satisfy his wants. Within this framework, the economist is concerned with (1) the functioning of the economy as a whole and (2) the functioning of individual units within the economy, particularly the business firm and the consumer.

Courses in economics are designed to provide a sound grasp of tools of analysis and measurement, as well as the ability to apply systematic analysis to problems of business.

## BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: ECONOMICS

### Degree Requirements

#### 1. University graduation requirements

(See page 47)

#### 2. Environmental Studies Program

(See page 66)

#### 3. Required Courses

- |             |   |         |
|-------------|---|---------|
| a. Business | College common body of knowledge                    |         |
| b. ACC 3301 | Managerial Accounting                               | 3 hours |
| ECO 3101    | Intermediate Price Theory                           | 4 hours |
| ECO 3203    | Intermediate Money, Income and<br>Employment Theory | 4 hours |
| ECO 4503    | Public Finance in the American Economy              | 3 hours |
| FIN 3233    | Money and Banking                                   | 4 hours |

#### 4. Restricted Electives

All economics majors will be required to take five economics courses beyond the above major required economic courses.

#### 5. Electives

Total Quarter Hours Required

180

## DEPARTMENT OF FINANCE

**Chairman:** W. Reiff, CB 436, Phone 275-2525

**Faculty:** Budina, Chambers, Cheney, R. Cossaboom, Hitt, Millican, McKenna, Veit

The program in finance is designed to provide the student with a broad knowledge in the areas of business and corporation finance and investments. The program provides the student with the theoretical background and the tools of analysis required for making effective judgments in finance.

The study of finance prepares the student for careers in business financial management and with financial institutions. Commercial banks, savings and loan associations, insurance companies, and investment firms represent some of the financial institutions seeking the student who majors in finance.

## BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: FINANCE

### Degree Requirements

#### 1. University graduation requirements

(See page 47)

#### 2. Environmental Studies Program

(See page 66)

#### 3. Required Courses

a. Business	College common body of knowledge	
ACC 3301	Managerial Accounting	3 hours
b. FIN 3502	Investments	4 hours
FIN 3303	Financial Institutions	4 hours
FIN 3453	Financial Models	4 hours
ECP 4703	Managerial Economics	3 hours

#### 4. Restricted Electives

(Select 4 courses)

RMI 3015	Risk and Insurance	4 hours
FIN 3233	Money and Banking	4 hours
REE 3040	Real Estate	4 hours
FIN 3324	Commercial Bank Administration	4 hours
FIN 4514	Security Analysis	4 hours
FIN 4414	Financial Management	4 hours
FIN 4524	Portfolio Management	4 hours

#### 5. Electives

Total Quarter Hours Required

180

## GENERAL BUSINESS ADMINISTRATION

This program offers only an extension of the general coursework offered in the Common Body of Knowledge and provides no specific identification in Business Administration for a field of study. Students are encouraged, therefore, to review carefully the other programs of study following this section and then consult appropriate department chairmen in the College of Business Administration prior to selecting this program to make certain it appropriately contributes to career objectives.

## BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: GENERAL BUSINESS ADMINISTRATION

### Degree Requirements

1. University graduation requirements  
(See page 47)
2. Environmental Studies Program  
(See page 66)
3. Required Courses
  - a. Business College common body of knowledge
  - b. ACC 3301 Managerial Accounting 3 hours
  - ECP 4703 Managerial Economics 3 hours
  - ECO 4503 Public Finance in the American Economy 4 hours
  - FIN 3502 Investments
  - or
  - FIN 3233 Money and Banking 4 hours
  - or
  - FIN 3303 Financial Institutions
  - MAN 3301 Personnel Management 4 hours
  - MAN 4004 Planning and Control 4 hours
  - MAR 3613 Marketing Research 5 hours
4. Restricted Electives  
At least two additional courses from a minimum of two areas in the College of Business Administration.
5. Electives

Total Quarter Hours Required 180

## DEPARTMENT OF MANAGEMENT

**Chairman:** R. Reidenbach, CB 343, Phone 275-2376

**Faculty:** Berry, Bogumil, Burnette, Callarman, Comish, Eubanks, Gallagher, Jones, Martin, McCartney, A. Schou, C. Schou, Wilson

The study of management includes an investigation into the areas of organization theory, personnel management, and production management. An understanding of organizations and the process by which they develop and influence behavior is important to the study of general management.

A student majoring in management may find a wide variety of career opportunities in business, industry, or government.

# BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: MANAGEMENT

## Degree Requirements

1. University graduation requirements  
(See page 47)
  2. Environmental Studies Program  
(See page 66)
  3. Required Courses
    - a. Business College common body of knowledge
    - b. ACC 3301 Managerial Accounting 3 hours
    - ECP 4703 Managerial Economics 3 hours
    - MAN 3301 Personnel Management 4 hours
    - MAN 4004 Planning & Control 4 hours
    - MAN 4201 Organization Theory 4 hours
    - MAN 4510 Production Management Problems 4 hours
  4. Restricted electives (Select a minimum of 3 courses)

MAN 4722	Decision Systems Analysis	4 hours
MAN 4724	Managing Decision Systems	4 hours
MAN 4310	Personnel Problems	4 hours
MAN 4401	Industrial Relations	4 hours
MAN 4150	Human Relations in Management	4 hours
COM 3110	Business and Professional Communication	4 hours
  5. Electives
- Total Quarter Hours Required 180

# DEPARTMENT OF MARKETING

**Chairman:** G. Paul, CB 420, Phone 275-2442

**Faculty:** Davis, Fuller, Manske, McAleer, Rubin, Teeple

Marketing encompasses the total system of interacting business activities designed to plan, price, promote, and distribute want-satisfying products and services to present and potential customers.

The marketing curriculum concentrates on developing the student's ability to understand, interpret, and measure market demand and to understand the blending of product differentiation, pricing strategies, promotional strategies, and physical distribution so as to optimize the efficiency of the total system and the profits of the individual firm. Students majoring in marketing find a variety of career opportunities.

# BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: MARKETING

## Degree Requirements

1. University graduation requirements  
(See page 47)

## 2. Environmental Studies Program

(See page 66)

## 3. Required Courses

a. Business	College common body of knowledge	
ACC 3301	Managerial Accounting	3 hours
b. MAR 3503	Consumer Market Behavior	4 hours
MAR 3403	Sales Management	4 hours
MAR 3613	Marketing Research	5 hours
ECP 4703	Managerial Economics	3 hours
MAR 4713	Marketing Policies and Strategies	4 hours

## 4. Restricted Electives

Minimum of 3 courses with a maximum of one in PSY, COM area

MAR 4263	International Business Operations	3 hours
MAR 3603	Marketing Models and Logistics	4 hours
MAR 3303	Advertising Management	4 hours
MAR 4203	Channels of Distribution Management	4 hours
MAR 4703	Current Marketing Problems	4 hours
INP 3102, SOP 3004, or COM 3110		4 hours

## 5. Electives

Total Quarter Hours Required 180

# COLLEGE OF BUSINESS ADMINISTRATION GRADUATE PROGRAMS

The College of Business Administration offers curricula leading to the Master of Business Administration degree, the Master of Science degree with a specialization in accountancy and the Master of Arts degree in Applied Economics.

## ADMISSION REQUIREMENTS

### 1. University Admission Requirements

(See pages 34 and 60)

### 2. College Admission Requirements

- a. Admission is normally open to the student with a baccalaureate degree from an accredited college or university, with a minimum of 3.0 grade point average (based on a 4.0 system) while registered as an upper division undergraduate student and an acceptable score on the Graduate Management Admission Test. An acceptable score on the Graduate Record Examination is required for admission to the Master of Arts degree program in Applied Economics. Consideration will also be given in admission decisions to the applicant's intellectual development during the course of his previous academic career, his extracurricular activities, employment experience, and other evidences of motivation for graduate study. No previous training in business is required, thus the graduate degree programs are open to graduates in education, engineering, arts, science, and other fields as well as business. The applicant will not be considered for regular graduate status until his score on the GMAT or GRE, a transcript showing proof of attainment of the Bachelor's degree and the transcripts of all other colleges attended have been submitted to the Director of Admissions of the University. The applicant must arrange for transcripts to be submitted by the proper officials of the institutions which he attended. Transcripts in the possession of an applicant cannot be accepted. It is the applicant's responsibility to make arrangements to take the GMAT or GRE prior to the expected date of enrollment and to direct the Educational Testing Service to mail the test score to the Director of Admissions, University of Central Florida.
- b. Enrollment in Business Administration graduate courses (5000/6000 level) is limited to students who have been accepted and classified with regular graduate status or admission categories in the MBA, MS with specialization in accountancy or MA in Applied Economics programs. The College of Business Administration must have the student's completed application for admission on file prior to registration.



# UNIVERSITY GRADUATE PROCEDURES

See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.

## MASTER OF BUSINESS ADMINISTRATION

**Program Coordinator:** *W. Reiff*, CB 427, Phone 275-2137

The program of study for the Master of Business Administration degree is primarily concerned with the advanced study of broad business concepts and relationships. The purposes are (a) to develop depth of knowledge of the business functions, (b) to strengthen the analytical tools of the individual for use in research necessary to resolve business problems, (c) to expose the student to decision-making concepts and practices, and (d) to encourage a logical and analytical approach to business problems.

### Degree Requirements

1. University Graduate Policies and Procedures: See the current UCF Graduate Procedure Manual available in the Office of Graduate Studies.
2. Prerequisites: The following prerequisites and/or foundation courses must normally be completed before a student may enroll in required/elective 6000 level graduate courses. Students completing their last prerequisite course(s) may register for 6000 level graduate courses in the same quarter if they are classified as regular status graduate students. Quarter hours are shown in parentheses.

ACC 2304,

2324

Financial Accounting I and II (3, 3)

or

ACC 3003

Financial Accounting (5)

or

ACC 5004

Financial Accounting Concepts (4)

BUL 3111

Legal Environment of Business (3)

or

BUL 5125

Business Environment and Business Law (3)

ECO 2023

Principles of Microeconomics (4)

ECO 2013

Principles of Macroeconomics (4)

or

ECO 5055

Economic Concepts (4)

STA 3023

Fundamentals of Probability and Statistics (4)

and

ECO 3411

Business and Economic Statistics (4)

or

ECO 5413

Statistics for Business and Economics (4)

FIN 3403

Finance (5)

or

FIN 5405

Financial Concepts (4)

MAN 3010

Managerial and Organizational Behavior (3)

MAN 3151

Human Behavior & Interpersonal Relations (3)

MAN 3504

Business Operations Management (3)

or

MAN 5051	Management and Production Concepts (4)
MAR 3023	Marketing (5)
or	
MAR 5055	Marketing Concepts (4)

Prerequisite courses must normally have been satisfactorily completed within the past five years at an accredited college or university. Prerequisites may be satisfied through completion of the equivalent foundation course or through credit by examination.

3. Required Courses: The following core courses are required.

ACC 6734	Accounting Analysis	3 hours
ECO 6111	Economic Analysis of the Firm	3 hours
ECO 6415	Statistical Models for Business	3 hours
MAR 6716	Marketing Policy	3 hours
FIN 6436	Capital Management and Analysis	3 hours
FIN 6426	Financial Management of Current Operations	3 hours
MAN 6055	Planning and Control Analysis	3 hours
MAN 6206	Analysis of Organizational Behavior	3 hours
MAN 6814	Operations Research Models for Business	3 hours
MAN 6896	Systems Analysis for Business Problem Solving	3 hours
MAN 6721	Business Policy and Responsibility	3 hours
MAR 6918	Research Methods	3 hours
		36 hours

4. Restricted Electives: Each student will complete at least nine hours of approved electives from 6000 level courses. Students may make selections from any 6000 level offerings in the College of Business Administration, or, by petition, certain graduate courses which may be open to them in other colleges and approved by the College of Business Administration. A graduate elective course may be substituted for one graduate required course in the student's undergraduate major area if the student has completed a baccalaureate degree in Business Administration within the previous five years.

5. Thesis: Not required.

6. Examinations: Satisfactory completion of a written comprehensive examination is required for the MBA degree. The comprehensive examination on major areas of study in the program normally will be taken during the final quarter of course work.

Total Quarter Hours 45

## MASTER OF SCIENCE: ACCOUNTANCY

**Program Coordinator:** C. Avery, CB 403, Phone 275-2463

The Master of Science with a specialization in accountancy stresses the development of advanced accounting skills to provide resources for decision making and problem solving in public, private and government accounting. Course work is practice oriented, emphasizing quantitative techniques and computer skills. Courses offered within the MS required

program satisfy the requirements of the State Board of Accountancy Rule 21A-8.03 (5th year in accountancy) and Rule 21A-13.03 (professional education).

### Degree Requirements

1. University Graduate Policies and Procedures: See the current UCF Graduate Procedures Manual available in the Office of Graduate Studies.
2. Prerequisites: In addition to the prerequisites listed for the MBA program, the following courses must be completed.

#### Prerequisite Undergraduate Accounting Courses:

ACC 2304, 2324	Financial Accounting I, II (3,3)	
or		
ACC 3003	Financial Accounting (5)	
ACC 3101, 3121, 3141	Intermediate Accounting I, II, III (3, 5, 5)	
ACC 3401	Cost Accounting (4)	
ACC 4201	Advanced Accounting	5 hours
ACC 4421	Cost Analysis	4 hours
ACC 4601	Auditing	5 hours
ACC 4501	Federal Income Tax Accounting	5 hours

Prerequisite courses must normally have been satisfactorily completed within the past five years at an accredited college or university. Prerequisites may be satisfied through completion of the equivalent foundation course or through credit by examination.

3. Required Courses: The Master of Science specialization in Accountancy is awarded upon satisfactory completion of a graduate program of 45 quarter hours; 39 hours in the core and 6 hours of graduate elective courses. The required graduate courses for the MS program are as follows:

ACC 6805	Contemporary Accounting Theory	5 hours
ACC 6735	Computers and Information Systems in Accounting	5 hours
ACC 6611	Advanced Auditing	5 hours
ACC 6411	Cost Accounting for Management Decisions	5 hours
ACC 6511	Taxation	5 hours
ACC 6866	Specialized Accounting Problems	5 hours
ACC 6918	Directed Independent Research	3 hours
or		
MAR 6918	Research Methods	3 hours
ECO 6111	Economic Analysis of the Firm	3 hours
ECO 6415	Statistical Models for Business	3 hours
		39 hours

4. Restricted Electives. Six hours of graduate course work, including MAN 6721 if no prior course in Business Policy, approved by the Department.
5. Thesis: The MS does not require a thesis. However, students wishing to do research may (with the approval of their advisor) choose among the

following options: (1) independent study; (2) a major research project and written report for 6 hours credit (ACC 6918); or (3) a thesis for a maximum of six elective graduate credits.

6. Examinations: Satisfactory completion of an end of program comprehensive examinations is required.

Total Quarter Hours Required

45

## MASTER OF ARTS: APPLIED ECONOMICS

**Program Coordinator:** *W. Reiff*, CB 427, Phone 275-2137

The program of study for the Master of Arts Degree in Applied Economics is designed to provide specialization in economics for those persons desiring careers as economists in the academic, governmental, business, and financial communities.

### Degree Requirements

1. University Graduate Policies and Procedures: See the current UCF Graduate Procedure Manual, available in the Office of Graduate Studies.
2. Prerequisites: Unless a specific graduate economics course has no undergraduate prerequisites, the following prerequisites (or equivalents) must be completed before enrolling in 6000-level graduate economics courses:

ECO 5055 Economic Concepts

ECO 5413 Statistics for Business and Economics

When classified as a regular graduate student, a student may register simultaneously for both prerequisite and 6000-level graduate courses providing such 6000-level courses have no specific prerequisites. Undergraduate equivalent prerequisite coursework must have been satisfactorily completed within the past five years at an accredited college or university if used to meet the prerequisites requirement.

3. Required Courses:

ECO 6111 Economic Analysis of the Firm 3 hours

ECO 6115 Price Theory 3 hours

ECO 6204 Aggregate Economics—Income,  
Unemployment and Growth 3 hours

ECO 6206 Business Cycles and Forecasting 3 hours

ECO 6415 Statistical Models for Business 3 hours

ECO 6918 Research Methods

or

MAR 6918 Research Methods 3 hours

18 hours

4. Restricted Electives: At least eighteen hours may be taken from elective courses offered by the Department. Up to nine hours of graduate credit may be accepted from coursework offered by other qualified graduate programs upon approval of the Department.
5. Thesis and Internship: A thesis is optional and may not exceed nine hours of graduate credit. Students may also petition to enroll in an internship. The internship is optional and may not exceed six hours of graduate

credit. An internship will require enrollment in ECO 6938—Special Topics (3 hours) and ECO 6918—Research Report (3 hours).

6. Examination: Satisfactory completion of a comprehensive examination consisting of an oral defense of the thesis or of the assignments associated with the internship.

Total Quarter Hours Required

45

# COLLEGE OF EDUCATION

## UNDERGRADUATE PROGRAMS

### COMPREHENSIVE K-12

- Library Media Specialist (BA)
- Physical Education (BA)
- Visual Arts Education (BA)

### ELEMENTARY EDUCATION

- Elementary Education (BA)

### SECONDARY EDUCATION

- Business Education (Comprehensive) (BA)
- English Language Arts Education (BA)
- Foreign Language Education (BA)
- Mathematics Education (BA)
- Science Education (BA)
- Social Science Education (BA)
- Speech Education (BA)
- Technical/Vocational Education (BA)

## GRADUATE PROGRAMS

### ELEMENTARY EDUCATION

- Elementary Education (MA) (M.Ed)
- Exceptional Child (MA) (M.Ed)

### COMPREHENSIVE K-12

- Administration & Supervision (MA) (M.Ed)
- Guidance (MA) (M.Ed)
- Library Media Specialist (MA) (M.Ed)
- Music Education (MA) (M.Ed)
- Physical Education (MA) (M.Ed)
- Reading Specialist (MA) (M.Ed)
- School Psychology (MS)
- Visual Arts Education (MA) (M.Ed)

### SECONDARY EDUCATION

- Business Education (Comprehensive) (MA) (M.Ed)
- English Language Arts Education (MA) (M.Ed)
- Foreign Language Education (MA) (M.Ed)
- Mathematics Education (MA) (M.Ed)
- Science Education (MA) (M.Ed)
- Social Science Education (MA) (M.Ed)
- Speech Education (MA) (M.Ed)
- Vocational Education (MA) (M.Ed)

### DOCTORAL PROGRAMS

- Administration & Supervision (Ed.D)
- Community and Junior College Instruction (Ed.D)
- Curriculum & Instruction (Ed.D) (Ed.S)
- Elementary Education (Ed.D) (Ed.S)
- Counseling Education (Ed.D) (Ed.S)

# COLLEGE OF EDUCATION

**Dean:** C. Miller, ED 328, Phone 275-2366

**Associate Dean:** R. Cowgill, ED 328, Phone 275-2366

**Assistant Dean:** N. McLain, ED 115, Phone 275-2436

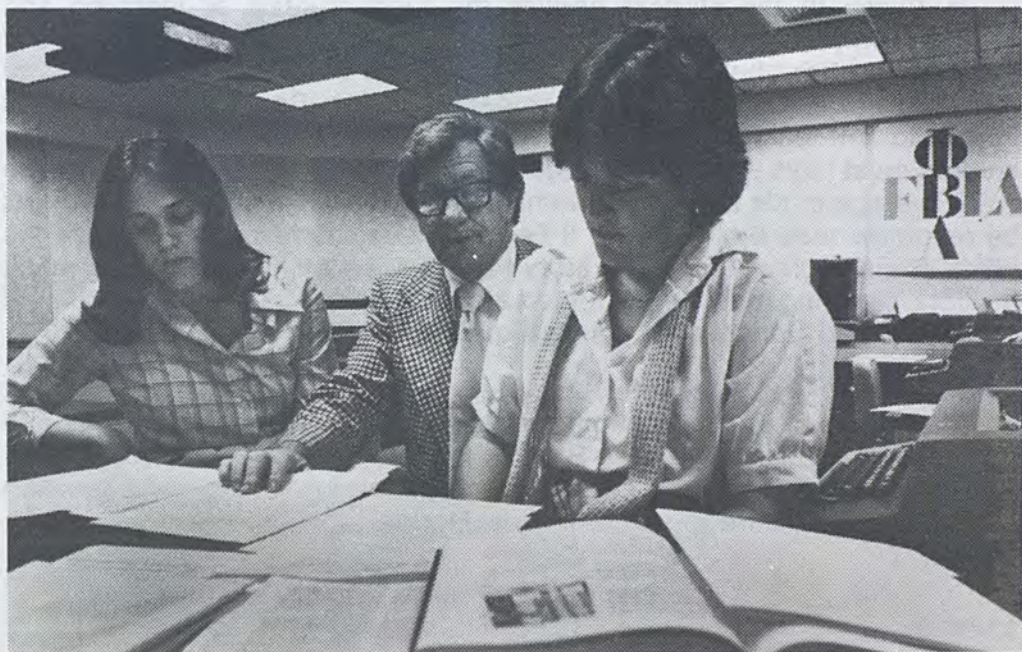
Students who are planning a career in teaching in the elementary or secondary schools should enroll in this College. Programs are offered leading to the Bachelor of Arts, Master of Education and Master of Arts degree in Education.

The professional program is concerned primarily with the interrelated and interdependent areas of Specialized Preparation and Professional Preparation.

In general, specialized preparation in subject matter areas for secondary education majors is offered by the other colleges, while specialized elementary education content courses are offered by the College of Education.

The professional sequence, a responsibility of the College of Education, is designed for developing:

- A. Insights into the processes of school curriculum and organization.
- B. Understanding of how learning takes place with methods and procedures needed for successful teaching.
- C. An understanding of the society in which schools function.
- D. An awareness in the individual of his relationship with students and the community.
- E. A realization of the challenges and responsibilities in the field of education and a basic philosophy of education.



Considerable emphasis is given to providing all education majors with an opportunity to have cooperatively planned learning experiences in a laboratory setting, specifically designed to blend realistic practical experience with theoretical knowledge. In most instances elementary and secondary schools in Central Florida serve as educational laboratories for the College of Education.

## **UNDERGRADUATE CAREER TEACHER PROGRAM**

Students are encouraged to enroll in the College of Education as early as the freshman year. Junior transfer students will enter Phase I of the professional education sequence during their first quarter.

The Career Teacher Program consists of three distinct Phases:

### **PHASE I—TEACHING ANALYSIS**

This is required of all education students and designed to acquaint the student with basic teaching procedures, pre-instructional planning, performance evaluation, and the developmental-behavioral characteristics of children. Various aspects of the teaching profession are analyzed, providing a basis for the students deciding whether or not to pursue teaching as a career. Any university student of sophomore level may enroll in Phase I.

### **PHASE II—DEVELOPMENTAL**

Developmental activities are structured for the prospective teacher to develop specific teaching skills and to expand his teaching field knowledge. Laboratory experiences in Phase II are jointly planned by public school personnel and university faculty and are conducted in approved student teaching centers. To be admitted to Phase II a student must have an overall 2.0 academic average, have successfully completed Phase I requirements, and demonstrated competency in written and oral communication skills.

### **PHASE III—APPLICATION**

In Phase III the student applies the fundamentals of teaching and academic knowledge attained in Phases I and II. Under the supervision of a selected teacher, the student is responsible for developing and executing plans. A full quarter is devoted to student-teaching. Concurrent enrollment in the student teaching seminar is required. To be admitted to Phase III, a student must have satisfied the requirements for Phase I and Phase II; have a 2.2 average in his area of academic specialization; a 2.0 overall average; be recommended by the Phase II Teaching Team; and be accepted by the office of the Professional Laboratory Program. An application for Phase III, Student Teaching must be submitted at least one quarter before enrollment for Winter and Spring quarters, two quarters ahead for Fall quarter.

### **CERTIFICATION FOR TEACHING**

All College of Education undergraduate curricula fulfill State of Florida certification requirements for a Rank III Florida Teaching Certificate. There is an "interstate" agreement with several states for College of Education graduates who desire to teach outside Florida.



## PROFESSIONAL LABORATORY PROGRAM

**Director:** *H. Haughee*, ED 214, Phone 275-2401

The UCF program for students planning a career in teaching is considered innovative and functional because of early and continuous field experience with school children which attempts to blend theoretical consideration with the practical. Cooperative planning and articulation with school personnel assures appropriate activities in educational settings.

## DEPARTMENT OF ELEMENTARY EDUCATION

**Chairman:** *R. Martin*, ED 243, Phone 275-2161, 275-2162.

**Faculty:** *Anderson, Beadle, Bird, Blume, Chin, Cox, Esler, Green, Harlacher, Hynes, Joels, Manning, Merritt, Midgett, J. Miller, M. Miller, Monteleone, Olson, Palmer, Poe, Thompson, Waits*

The career Elementary Education Program is planned for students interested in the education of young children, six through twelve years of age. Students who major in elementary education are qualified to teach grades one through six upon graduation and receipt of a Florida teaching certificate.

An elementary education major must have the following preparation: (1) a broad general education (environmental studies); (2) a specialized knowledge of content, techniques and materials needed to teach different elementary school subjects such as art, language arts, mathematics, music, physical education, science and social studies; and (3) professional study which includes planned laboratory activities with children in schools identified as Teacher Education Centers. Center activities are scheduled during the junior and senior years of study and provide for the application and synthesis of theoretical learnings and the development of teaching competencies.

## BACHELOR OF ARTS: ELEMENTARY EDUCATION

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 60)
2. Special college and/or department requirements  
(See pages 85 and 87)
3. Required Courses

#### Professional Education

##### Phase I

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	4 hours

##### Phase II

RED 3012	Basic Foundations of Reading	3 hours
EDE 3942	Elem School Student Teaching/ Block A	3 hours
EDE 3943	Elem School Student Teaching/ Block B	3 hours

EDE 3411	Teaching & Evaluation Elem School	3 hours
EDE 3301	Teaching Strategies in Elem School	3 hours
Phase III		
EDE 3201C	Elementary School Curriculum	2 hours
EDE 4943	Elem School Student Teaching/ Block C	9 hours
EDG 4938	Student Teaching Seminar	3 hours
Specialization		
MAE 3310	Teaching Math in the Elem School	3 hours
MAE 3311	Math Programs in the Elem School	3 hours
MUE 3401	Music in the Elementary School	4 hours
LAE 3414	Literature for Children	4 hours
RED 3310	Reading in the Elementary School	3 hours
SCE 3310	Teaching Science in the Elem School	3 hours
SSE 3312	Teaching Soc Sci in the Elem School	3 hours
LAE 4314	Language Arts in the Elementary School	4 hours
ARE 4313	Art in the Elementary School	4 hours
RED 4519	Classroom Diagnosis and Treatment of Reading Difficulties	3 hours
SCE 4111	Science Programs in the Elem School	3 hours
SSE 4113	Social Sci Programs in the Elem School	3 hours
HLP 4460	Teaching Elem School Health & Phy Ed	3 hours



4. Restricted Electives (Area of Academic Concentration) A minimum of 12 quarter hours is required in a related field of academic concentration. Elementary Education majors are advised to select courses leading to certification to teach English, mathematics, social sciences, or sciences in the junior high school, which also may increase employability in a middle school or departmentalized elementary school; or Early Childhood Education; or Exceptional Student Education.

5. Electives

Total Quarter Hours Required

180

### AREAS OF SPECIALIZATION

1. Early Childhood Education (Nursery and Kindergarten). In combination with preparation to teach grades one through six, requirements may be met for preparation/certification to teach kindergarten (9 quarter hour minimum).
2. Exceptional Student Education (Educable Mentally Retarded). In combination with preparation to teach grades one through six, a partial specialization is available which is concerned with knowledge, methods, and materials essential to teach children with intellectual disabilities (EMR); learning disabilities; or who are emotionally handicapped (12 q.h. may be scheduled at the undergraduate level; remaining requirements at the graduate level).
3. Music Education. Certification in Music Education is offered cooperatively with the Department of Music, College of Humanities and Fine Arts.

## DEPARTMENT OF PHYSICAL EDUCATION

**Chairman:** *J. Powell*, ED 144, Phone 275-2595

**Faculty:** *Clark, Cleland, Gergley, Higginbotham, Hunter, H. P. Martin, Renner, Rohter*

The Physical Education program offers a comprehensive curriculum designed to certify a student to teach as a physical education specialist in grades K through 12. Areas of study are: (1) Environmental Studies; (2) General Professional Preparation; (3) Area of Specialization; and (4) Electives.

Physical Education major students will be required to complete successfully the Required Professional Courses (Phase I, II, III) as outlined on the next page. Physical Education major students in Phase II will be provided a teacher-coaching experience in Teacher Education Centers during two quarters (one quarter on an elementary level, one level on a middle school-junior high school level) of their junior year. The courses listed in Phase II—Developmental, will be scheduled concurrently.

In Phase III (senior year), the student is enrolled full time for one quarter as a student teacher in an accredited elementary or secondary school under the direction of a selected supervising teacher.

The Department of Physical Education has identified courses acceptable for completing an undergraduate minor. Students desiring to complete a minor should contact the chairman of the Department for information.

## BACHELOR OF ARTS: PHYSICAL EDUCATION

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 89)
3. Required Courses

### Professional Education

#### Phase I

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	5 hours

#### Phase II

PET 3461C	Teaching Elementary School PE	3 hours
EDE 3943	Elementary School Student Teaching	3 hours
PET 3420	P.E. & Total School Program	3 hours
PET 3450C	Physical Education Instructional Analysis	3 hours
PET 4510C	Measurement & Evaluation in P.E.	3 hours
ESE 3940	Secondary School Student Teaching	3 hours

#### Phase III

EDG 4938	Student Teaching Seminar	3 hours
EDE 4943	Elementary School Student Teaching	9 hours
or		
ESE 4943	Secondary School Student Teaching	9 hours

### Specialization

ZOO 3733C	Anatomy	5 hours
PEO 3011C	Instructional Analysis of Team Sports	2 hours
PEO 3341C	Instructional Analysis of Tennis	2 hours
PEQ 3101C	Instructional Analysis of Aquatics	2 hours
PEP 3201C	Instructional Analysis of Gymnastics and Tumbling	2 hours
PEO 3121C	Instructional Analysis of Golf	2 hours
PEP 3421C	Instructional Analysis of Wrestling	2 hours
DAA 3700	Choreography of Contemporary Dance	2 hours
DAE 3301	Instructional Analysis of Rhythmics	2 hours
PET 3453	Coaching Theory	3 hours
LEI 3433C	School and Community Recreation	3 hours
PET 4340C	Kinesiomechanics	3 hours
PET 4370C	Exercise Physiology—Cardiovascular	4 hours
PET 4371C	Exercise Physiology—Respiratory	4 hours
PET 4230C	Human Performance	4 hours
PET 4620C	Rehabilitation Training Techniques	3 hours
PET 4410	Organization and Administration of Physical Education	3 hours

4. Restricted Electives  
None

5. Electives

17 quarter hours may be used as electives or may be utilized to work towards certification in either or both of the related areas of science or health education.

Total Quarter Hours Required

180

## **AREAS OF SPECIALIZATION**

1. Health Education. Health Education certification may be obtained by completing 27 quarter hours of courses which are offered through the College of Education and various other colleges within the University. For further information, see any Physical Education advisor.

## **DEPARTMENT OF SECONDARY EDUCATION**

**Chairman:** *H. Hall*, ED 344, Phone 275-2286

**Faculty:** *Armstrong, Brumbaugh, Clarke, Fardig, Fowler, Gurney, Harrow, McGee, E. Miller, Park, Paugh, Siebert, Sorg, West*

The program in Secondary Education is for prospective teachers who have an interest in working with adolescent students in a specific academic area at the middle, junior or senior high school levels. Major specializations are available in Biology, Business Education, Chemistry, English, Foreign Language, Mathematics, Physics, Social Studies, and Speech.

Students in Secondary Education have teaching laboratory experience for one quarter in the junior year at selected secondary school Teacher Education Centers. Daily attendance at four one-half-day sessions in the practical setting is used to supplement university theory classes. A quarter of full-time student teaching is also required at the senior level. Students are encouraged to clear their working and class schedules during field experience quarter to allow them to devote full time to student teaching.

### **Technical/Vocational Education**

The Technical/Vocational Education degree is for individuals in industrial-technical areas or selected health occupations who wish to teach their vocations in secondary or post-secondary schools. To be eligible for the degree, students must have worked full time in the occupation for at least two years and must demonstrate competence in the areas in which they wish to teach.

A maximum of 45 quarter hours of earned credit, credit by examination or credit granted through licensing may count toward a degree. Associate of Arts and Associate of Science Degree holders must meet all university requirements for the Bachelor of Arts Degree. However, up to 18 quarter hours of the 90 hour senior institution requirement may be waived.

### **MINOR**

The Department of Secondary Education offers a minor of Executive Secretary consisting of 35 quarter hours.

Required courses: BTE 1060, 1061, 1062, 2063, 2064, 2065, 3151, 3152, 3266, 4154, and 4265.

### **BACHELOR OF ARTS: BUSINESS EDUCATION (Comprehensive)**

#### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)

### 3. Required Courses

#### Professional Education

##### Phase I

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	4 hours

##### Phase II

BTE 3391	Business Instructional Analysis	4 hours
ESE 3321	Teaching Strategies	4 hours
ESE 3322	Teaching Techniques	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours

##### Phase III

EDG 4938	Student Teaching Seminar	3 hours
ARE 4944	Secondary School Student Teaching (C)	9 hours

##### CORE

ACC 2304	Financial Accounting I	3 hours
ACC 2324	Financial Accounting II	3 hours
BTE 1060	Introductory Typewriting	3 hours
BTE 1061	Type Production I	3 hours
BTE 1062	Type Production II	3 hours
BTE 3266	Office Technology	4 hours
BTE 4154	Office Simulation	4 hours
BUL 3111	Legal Environment of Business	3 hours
CAP 3001	Comp Funds—Bus I	3 hours
ECO 2023	Microeconomics	4 hours
ECO 2013	Macroeconomics	4 hours
ENC 3352	Professional Report Writing	3 hours
EVT 4066	Principles and Practices of Vocational Education	4 hours

#### 4. Restricted Electives (See specialization requirements listed below)

RED 4333	Teaching Reading in the Content Areas	3 hours
----------	---------------------------------------	---------

#### 5. Electives

Total Quarter Hours Required 180

### AREAS OF SPECIALIZATION

#### 1. Comprehensive (Select one)

BTE 2063	Principles of Shorthand I	3 hours
BTE 2064	Principles of Shorthand II	3 hours
BTE 2065	Principles of Shorthand III	3 hours
BTE 3151	Shorthand Dictation	3 hours
BTE 3152	Shorthand Transcription	3 hours
BTE 4265	Office Systems Procedures	3 hours
BTE 4392	Bus Instructional Analysis II	3 hours
BTE 4393	Bus Instructional Analysis III	3 hours
BTE 4154	Office Simulation	4 hours

#### 2. Basic Business and Accounting

ACC 3301	Management Accountancy	3 hours
ACC 3101	Intro Acctg I	3 hours
BTE 4393	Bus Instructional Analysis III-Accy	3 hours

CAP 3002	Computer Fund Bus Applications—Bus II	3 hours
MAN 3010	Management and Organization Behavior	3 hours
MAR 3023	Marketing	5 hours
MAR 3503	Consumer Market Behavior	4 hours

## **BACHELOR OF ARTS: ENGLISH LANGUAGE ARTS EDUCATION**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)
3. Required Courses

#### **Professional Education**

##### **Phase I**

EDF 3603	Teaching Analysis	4 hours
EDF 3255	Classroom Management & Learning	4 hours

##### **Phase II**

ESE 3321	Teaching Strategies	4 hours
ESE 3322	Teaching Techniques	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours
LAE 3335	English Instructional Analysis	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours

##### **Phase III**

EDG 4938	Student Teaching Seminar	3 hours
ESE 4943	Secondary School Student Teaching (C)	9 hours

#### **Composition**

CRW 2020	Principles of Creative Writing	3 hours
ENC 1103	Composition I	4 hours
ENC 1135	Exploring Literature through Writing	3 hours
ENG 3412	Writing Skills	3 hours
LAE 4342	Teaching Language and Composition	3 hours

#### **Literature**

AML 3101	American Literature 1588-1865	3 hours
AML 3107	American Literature 1865-1914	3 hours
AML 3111	American Literature since 1914	3 hours
ENL 2011	English Literature to 1625	3 hours
ENL 2018	English Literature 1626-1798	3 hours
ENL 2025	English Literature 1798-1914	3 hours
ENL 3028	British Literature since 1914	3 hours
ENL 4131	Reading in Shakespeare	3 hours
LAE 4464	Literature for Adolescents	3 hours
LIT 2020	Literary Analysis	3 hours

#### **Language**

ENG 4550	Modern English Grammar or	4 hours
LIN 4304	Transformational Grammar	3 hours
LIN 3010	Principles of Linguistics	3 hours

Speech			
	SPC 1014	Fundamentals of Oral Communications	3 hours
Reading			
	RED 4333	Teaching Reading in Content Areas	3 hours
4. Restricted Electives			
	3000-4000	Contemporary Literature Electives	3 hours
5. Electives			
		<b>Total Quarter Hours Required</b>	<b>180</b>

## **BACHELOR OF ARTS: FOREIGN LANGUAGE EDUCATION**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)
3. Required Courses

#### **Professional Education**

##### **Phase I**

EDF 3603	Teaching Analysis	4 hours
EDF 3255	Classroom Management & Learning	4 hours

##### **Phase II**

ESE 3321	Teaching Strategies	4 hours
ESE 3322	Teaching Techniques	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours
FLE 3333	Foreign Language Instructional Analysis	4 hours
FLE 4380	Oral Teaching of Foreign Languages	3 hours

##### **Phase III**

ESE 4943	Secondary School Student Teaching (C)	9 hours
EDG 4938	Student Teaching Seminar	3 hours

4. Restricted Electives  
(See Areas of Specialization below)
- |  |           |                                       |          |
|--|-----------|---------------------------------------|----------|
|  | RED 4333  | Teaching Reading in the Content Areas | 3 hours  |
|  | 3000-4000 | French or Spanish Electives           | 20 hours |
5. Electives
- |  |  |                                     |            |
|--|--|-------------------------------------|------------|
|  |  | <b>Total Quarter Hours Required</b> | <b>180</b> |
|--|--|-------------------------------------|------------|

### **AREAS OF SPECIALIZATION**

#### **1. French Language**

A specialization in French Language requires the following courses:

FLE 3063	Language as Human Behavior	3 hours
FRE 1100	Elementary Language and Civilization	4 hours
FRE 1101	Elementary Language and Civilization	4 hours
FRE 1102	Elementary Language and Civilization	4 hours
FRE 2200	Intermediate Language and Civilization	4 hours



FRE 2201	Intermediate Language and Civilization	4 hours
FRE 2202	Intermediate Language and Civilization	4 hours
FRE 3240	French Conversation	4 hours
FRE 3420	French Composition	4 hours
FRW 3100	Survey of French Literature	4 hours
FRW 3101	Survey of French Literature	4 hours
FRW 3102	Survey of French Literature	4 hours

## 2. Spanish Language

A specialization in Spanish Language requires the following courses:

FLE 3063	Language as Human Behavior	3 hours
SPN 1100	Elementary Language and Civilization	4 hours
SPN 1101	Elementary Language and Civilization	4 hours
SPN 1102	Elementary Language and Civilization	4 hours
SPN 2230	Intermediate Language and Civilization	4 hours
SPN 2231	Intermediate Language and Civilization	4 hours
SPN 2232	Intermediate Language and Civilization	4 hours
SPN 3240	Spanish Conversation	4 hours
SPN 3420	Spanish Composition	4 hours
SPW 3100	Survey of Spanish Literature I	4 hours
SPW 3101	Survey of Spanish Literature II	4 hours
SPW 3102	Survey of Spanish Literature III	4 hours

## **BACHELOR OF ARTS: MATHEMATICS EDUCATION**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)
3. Required Courses

### Professional Education

#### Phase I

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	4 hours

#### Phase II

ESE 3321	Teaching Strategies	4 hours
ESE 3322	Teaching Techniques	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours
MAE 3330	Mathematics Instructional Analysis	4 hours

#### Phase III

ESE 4943	Secondary School Student Teaching (C)	9 hours
EDG 4938	Student Teaching Seminar	3 hours

### Mathematics

COP 2510	Programming I	3 hours
MAC 1104	College Algebra	4 hours
MAC 1114	College Trigonometry	4 hours
MAC 2154	Analytic Geometry	3 hours
MHF 2300	Logic and Proof in Mathematics	4 hours

MAS 3203	Introduction to Number Theory	3 hours
MAS 3103	Linear Algebra I	4 hours
MAS 3104	Linear Algebra II	4 hours
MAC 3311	Calculus I	4 hours
MAC 3312	Calculus II	4 hours
MAC 3313	Calculus III	4 hours
MTG 4216	Modern Geometries I	4 hours
MTG 4233	Non Euclidean and Projective Geometry	3 hours
STA 3023	Fundamentals of Probability and Statistics	4 hours
MAE 4636C	Mathematics Laboratory Methods	3 hours
4. Restricted Electives		
RED 4333	Reading in Content Areas	3 hours
3000-4000	Mathematics Electives	6 hours
5. Electives		
Total Quarter Hours Required		180

## **BACHELOR OF ARTS: SCIENCE EDUCATION**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)
3. Required Courses

#### **Professional Education**

##### **Phase I**

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	4 hours

##### **Phase II**

ESE 3321	Teaching Strategies	4 hours
ESE 3322	Teaching Techniques	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours
SCE 3330	Science Instructional Analysis	4 hours

##### **Phase III**

ESE 4943	Secondary School Student Teaching (C)	9 hours
EDG 4938	Student Teaching Seminar	3 hours

4. Restricted Electives
 

RED 4333	Teaching Reading in the Content Areas	3 hours
	Science Electives 3000-4000 level (See Areas of Specialization)	12 hours
  5. Electives
- |                              |  |     |
|------------------------------|--|-----|
| Total Quarter Hours Required |  | 180 |
|------------------------------|--|-----|

## **AREAS OF SPECIALIZATION**

1. Biology  
A specialization in Biology requires the following courses:

## Biological Sciences

BOT 1010C	General Botany	4 hours
BSC 1010C	Basic Biology	5 hours
PCB 3043C	Principles of Ecology	4 hours
PCB 3063C	Genetics	4 hours
MCB 2013C	General Microbiology	4 hours
SCE 4374	Science Laboratory Teaching	3 hours
ZOO 1010C	General Zoology	4 hours
ZOO 3733C	Human Anatomy	5 hours

## Chemistry

BCH 3313	Clinical Biochemistry	4 hours
CHM 1034	General Chemistry—Fundamentals	5 hours
CHM 2200	General Chemistry—Organics	4 hours
CHM 2205L	Organic Biochem Lab	1 hour
CHM 2046L	Chemistry Fundamentals Laboratory	1 hour

## 2. Chemistry

The specialization of Chemistry requires the following courses:

### Chemistry

CHM 2045	Chemistry Fundamentals I	4 hours
CHM 2046	Chemistry Fundamentals II	3 hours
CHM 2047	Chemistry Fundamentals III	3 hours
CHM 2046L	Chemistry Fundamentals Laboratory	1 hour
CHM 2120C	Analytical Foundations	2 hours
CHM 3121C	Analytical Chemistry I	3 hours
CHM 3122C	Analytical Chemistry II	3 hours
CHM 3210	Organic Chemistry I	4 hours
CHM 3211	Organic Chemistry II	3 hours
CHM 3212	Organic Chemistry III	3 hours
CHM 3211L	Organic Laboratory Techniques	2 hours
SCE 4374	Science Laboratory Teaching	3 hours

### Mathematics

MAC 1104	College Algebra	4 hours
MAC 1114	College Trigonometry	4 hours
MAC 2154	Analytic Geometry	3 hours
MAC 3111	Calculus I	4 hours
MAC 3112	Calculus II	4 hours
MAC 3113	Calculus III	4 hours

## 3. Physics

The specialization of Physics requires the following courses:

### Physics

AST 1005	Astronomy I	4 hours
PHY 2040	General Physics I	4 hours
PHY 2041	General Physics II	4 hours
PHY 2042	General Physics III	4 hours
PHY 2041L	General Physics Laboratory I	1 hour
PHY 2042L	General Physics Laboratory II	1 hour
PHY 3101	Modern Physics	3 hours
PHY 3421	Optics and Wave Motion	3 hours
PHY 3752C	Physics of Scientific Instruments	4 hours

PHY 3802L	Intermediate Physics Laboratory	4 hours
SCE 4374	Science Laboratory Teaching	3 hours

**Mathematics**

MAC 1104	College Algebra	4 hours
MAC 1114	College Trigonometry	4 hours
MAC 2154	Analytic Geometry	3 hours
MAC 3311	Calculus I	4 hours
MAC 3312	Calculus II	4 hours
MAC 3313	Calculus III	4 hours

**BACHELOR OF ARTS:  
SOCIAL SCIENCE EDUCATION**

**Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)
3. Required Courses

**Professional Education**

**Phase I**

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	4 hours

**Phase II**

ESE 3321	Teaching Strategies	4 hours
ESE 3322	Teaching Techniques	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours
SCE 3330	Science Instructional Analysis	4 hours

**Phase III**

ESE 4943	Secondary School Student Teaching (C)	9 hours
EDG 4938	Student Teaching Seminar	3 hours

**Social Studies**

AMH 3310	American Social History	4 hours
AMH 3350	American Political History	4 hours
AMH 3370	American Economic History	4 hours
ECO 2000	Fundamentals of Economics	3 hours
EUH 2000	Ancient and Medieval Civilization	4 hours
EUH 2001	Renaissance to the French Revolution	4 hours
EUH 2002	Modern European Civilization	4 hours
GEO 3370	Resource Geography	3 hours
POS 2041	American National Government	4 hours
SOC 2000	General Sociology	4 hours
SSE 4633	Trends in Secondary School Social Science	3 hours

**4. Restricted Electives**

RED 4333	Teaching Reading in the Content Areas	3 hours
3000-4000	Geography Elective	4 hours

Student must have additional credits in history, political science, and sociology with at least 12 credits in one area. 20 hours

**5. Electives**

**Total Quarter Hours Required 180**

## BACHELOR OF ARTS: SPEECH EDUCATION

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)
3. Required Courses

### Professional Education

#### Phase I

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	4 hours

#### Phase II

ESE 3321	Teaching Strategies	4 hours
ESE 3322	Teaching Techniques	4 hours
ESE 3940	Secondary School Student Teaching (A)	3 hours
SED 3335	Speech Instructional Analysis	4 hours

#### Phase III

ESE 4943	Secondary School Student Teaching (C)	9 hours
EDG 4938	Student Teaching Seminar	3 hours

### Speech and Communications

COM 1000	Basic Communication	4 hours
COM 3311	Communication as a Behavioral Science	4 hours
LIN 2200	English Phonetics and American Dialects	5 hours
ORI 2001	Interpretation I	3 hours
SED 4371	Directing Extracurricular Speech Activities	3 hours
SPC 1014	Fundamentals of Oral Communication	3 hours
SPC 3425	Group Interaction and Decision Making	4 hours
SPC 3511	Argumentation and Debate	4 hours
SPC 3542	Persuasion: Motivation	4 hours
SPC 3605	Speech Composition	4 hours



4. Restricted Electives		
RED 4333	Reading in the Content Areas	3 hours
3000-4000	Electives taken from SPC 3250, SPC 3301, SPC 3601, SPC 4350	
	Students must have an additional twelve credits in Drama, Journalism or Speech Pathology	12 hours
5. Electives		
	Total Quarter Hours Required	180

**BACHELOR OF ARTS  
TECHNICAL/VOCATIONAL EDUCATION  
Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 91)
3. Required Courses

**Professional Education**

Phase I

EVT 3063	Essential Teaching Skills in Voc Ed.	4 hours
EDF 3255	Classroom Management and Learning	4 hours

Phase II

EVT 3365	Methods of Tchg. in Voc. Ed. Subjects	4 hours
EVT 3366	Instructional Materials for Voc. Ed.	4 hours
EVT 3367	Evaluation of Vocational Instruction	4 hours
EVT 3815	Management of Vocational Classroom and Lab	3 hours
EVT 3062	Professional Role of the Voc. Tchr.	4 hours
EVT 3562	Special Needs of Voc. Students	3 hours
EVT 4066	Principles and Practices of Voc. Ed.	4 hours
EVT 4368	Advanced Teaching Techniques for Voc. Ed.	4 hours

Phase III

EDG 4941	Directed Field Experience	12 hours
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4. Restricted Electives (See the Areas of Specialization)		
RED 4333	Reading in the Content Area	3 hours
5. Electives		
	Total Quarter Hours Required	180

**AREAS OF SPECIALIZATION**

1. Health Occupations  
Students may complete a specialization in a Health Occupations area by meeting the requirements for teacher certification set forth in the Florida Accreditor Code and by submitting evidence of two years work experience at the journeyman, technician, or trained employee level.  
45 hours
2. Industrial-Technical  
Students may complete a specialization in a skilled trade area by successfully passing both the *written* and the *performance* portions of

the Occupations Competency Test in that area. There is a \$125 administration fee charged for the test and it is normally given in the Fall and Spring Quarters. The test must be successfully completed before the student is eligible for EDG 4941, Directed Field Experience. Two years of work experience is required.

- Specific skilled trade tests are available in the following Occupational Industries:

Automotive	Food
Aviation	Graphic Arts
Building	Machine
Drafting	Metal
Electrical	Personal Service
Electronics	Wood

## DEPARTMENT OF TEACHING ANALYSIS

**Chairman:** D. Hernandez, ED 320, Phone, 275-2426

**Faculty:** Barr-Johnson, Bollet, Cornell, Dziuban, Hiatt, Hoover, Kavanaugh, Kysilka, Olson, Percy, Rothberg, Sciortino, Shadgett, Sullivan, Sulloway, Toler, Weidenheimer, Wood.

Teaching Analysis serves two basic functions with the College of Education. First, it provides courses which meet University and state certification requirements in the Foundations area. Specifically, EDF 3603 Teaching Analysis (4QH) meets social foundations requirements and EDF 3255, Classroom Management and Learning (4QH) meets psychological foundations requirements. Successful completion of these courses meets requirements of Phase I, Analysis of Teaching; which is prerequisite for entry into Phase II, Development.

Second, Teaching Analysis houses two K-12 programs leading to the Bachelor of Arts Degree in Visual Arts Education and Library/Media Specialist.

## BACHELOR OF ARTS: LIBRARY MEDIA SPECIALIST

### Degree Requirements

- University graduation requirements  
(See pages 47 and 66)
- Special college and/or department requirements  
(See pages 85 and 101)
- Required Courses

#### Professional Education

##### Phase I—Analysis

EDF 3603	Teaching Analysis	4 hours
EDF 3255	Classroom Management & Learning	4 hours

##### Phase II—Development

EDG 3032C	Humanistic Aspects of School Programs	4 hours
LIS 4428	Utilization of Educational Media	4 hours
EDE 3943	Student Teaching	3 hours
ESE 3940	Student Teaching	3 hours

Phase III—Application

EDG 4938	Student Teaching Seminar	3 hours
ESE 4943	Student Teaching	9 hours

Library

LIS 3016	Intro. to Media Services	4 hours
LIS 3412	Media Center Operation	4 hours
LIS 4422	Principles of Media Center Administration	4 hours
LIS 4731	Organization of Media and Information	4 hours
LIS 4540	Interaction Techniques in Media Services	4 hours
LIS 4510	Development of Media Collections	4 hours
LIS 4601	Reference Sources and Services	4 hours
LIS 4310	Production of Materials for Media Center	4 hours
RED 4333	Teaching Reading in the Content Areas	3 hours

4. Restricted Electives 8 hours  
Electives in supportive areas to be selected on advice of Library/Media counselor.

5. Electives

Total Quarter Hours Required 180

**BACHELOR OF ARTS: VISUAL ARTS EDUCATION**

**Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 85 and 101)
3. Required Courses

Professional Education

Phase I

EDF 3255	Classroom Management & Learning	4 hours
EDF 3603	Teaching Analysis	4 hours
ARE 4313	Art in the Elementary School	3 hours
ARE 4344	Secondary School Art Instructional Analysis	3 hours

Phase II—Development

EDG 3032C	Humanistic Aspects of School Programs	4 hours
EDE 3943	Student Teaching	3 hours

Block B

ESE 3940	Student Teaching	3 hours
LIS 4428	Utilization of Educational Media	4 hours

Phase III—Application

ESE 4943	Student Teaching	9 hours
EDG 4938	Student Teaching Seminar	3 hours

Production

ART 2201C	Design Fundamentals I	3 hours
ART 2202C	Design Fundamentals II	3 hours
ART 2203C	Design Fundamentals III	3 hours
ART 2300C	Drawing Fundamentals I	3 hours
ART 2301C	Drawing Fundamentals II	3 hours



ART 3230C	Design in Advertising	3 hours
ART 3600C	Photography	3 hours
ART 3510C	Painting	3 hours
ART 3400C	Printmaking	3 hours
ART 3110C	Ceramics	3 hours
ART 4130C	Fibers, Fabrics, Textiles and Synthetics	3 hours
ART 4166C	Metals, Woods, Leathers and Stones	3 hours
ARE 4448	Crafts in the School	4 hours

Criticism. Select two (2).

ARH 2050	The History of Art I	3 hours
ARH 2051	The History of Art II	3 hours
ARH 2052	The History of Art III	3 hours
ARH 4800	Theory and Criticism of the Visual Arts	3 hours

Curriculum

ARE 4440	2-D Instructional Materials	4 hours
ARE 4443	3-D Instructional Materials	4 hours
ARE 4441	Graphic Instructional Materials	4 hours
ARE 4643	Continuing Art Progress in Schools	3 hours

4. Restricted Electives

Must be selected with advice of Visual Arts counselor and may vary based on prerequisite deficiencies.

5. Electives

Total Quarter Hours Required

180



# COLLEGE OF EDUCATION GRADUATE PROGRAMS

## MASTER OF ARTS; MASTER OF EDUCATION

**Program Coordinator:** *N. McLain*, ED 115, Phone 275-2436

The College of Education offers advanced courses for students, who have a baccalaureate degree, to meet certificate requirements for professional or personal updating, for transfer to other institutions (subject to the acceptance criteria of the other institution), or for earning the Master of Education or Master of Arts degree.

The Master of Education degree is for people with a background in education who are interested primarily in K-12 grade positions. Master of Arts degrees have been designed for fulfilling the needs of people with non-educational backgrounds who want to become qualified for teaching and other leadership roles in elementary, secondary and in some instances, post secondary positions. Master of Arts degrees are also available in a few areas by special arrangements for educators in private and governmental agencies not under certification regulations.

The degree programs for the Florida Rank II, Post Graduate certificate are designed to develop a high level of proficiency in educational personnel, in three categories:

- A. Core—expansion of background in research, learning developmental and measurement factors.
- B. Curriculum—improvement of skill in program planning and instructional techniques.
- C. Subject field content—extension of knowledge in his specialization field. Certification in the specialties may be pursued independently of a degree program.

## MASTER OF EDUCATION ADMISSION REQUIREMENTS

1. University Admission Requirements  
(See pages 34 and 60)
2. College or Program Admission Requirements

Course work must be completed for a State of Florida Teaching Certificate in the area of specialization. While not required for admission, student teaching (undergraduate or graduate level) or 3 years teaching experience is required for any full (type 4) Florida certificate. Three years teaching experience is required for certification in Administration or Supervision.

### **Degree Requirements**

1. University Graduate Policies and Procedures: See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.

2. Prerequisites: None
3. Required Courses: EDF 6418, Research Methods; various other courses, practice or internships required in specific programs.
4. Restricted Electives: Specified by advisors in programs.
5. Research Report: Required; 4 hours of credit.
6. Examinations: Written comprehensive examination required.

Total Quarter Hours Required	45-60 (varies with specialty)
Thesis Option	None
Non-Thesis Option	None

## **MASTER OF ARTS ADMISSION REQUIREMENTS**

1. University Admission Requirements  
(See pages 34 and 60)
2. College or Program Admission Requirements

### **Degree Requirements**

1. University Graduate Policies and Procedures: See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.
2. Prerequisites: Varies with the program; contact the program coordinator.
3. Required Courses: EDF 6481, Research Methods; others required in specific programs.
4. Restricted Electives: Specified by advisors in programs.
5. Research Report: Required; 4 hours of credit.
6. Examinations: Written comprehensive examination required.

Total Quarter Hours Required	54-60 (varies with specialty)
Thesis Option	None
Non-Thesis Option	None

### **AREAS OF SPECIALIZATION**

Administration & Supervision  
 Business Education (Comprehensive)  
 Elementary Education  
 English Language Arts Education  
 Exceptional Child  
 Foreign Language Education  
 Guidance  
 Library Media Specialist  
 Mathematics Education  
 Music Education  
 Physical Education

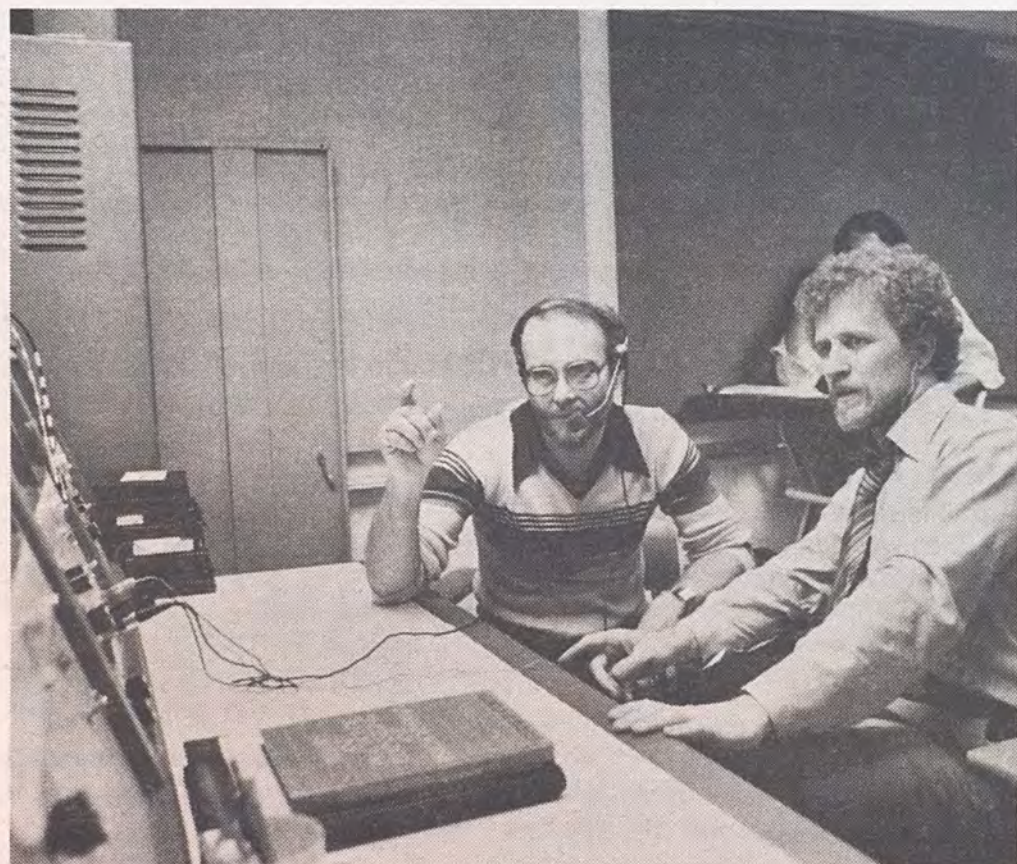
Reading Specialist  
School Psychology (MS)  
Science Education  
Social Science Education  
Speech Education  
Visual Arts Education  
Vocational Education

## **COOPERATIVE DOCTORAL PROGRAM**

Florida Atlantic University in Boca Raton offers two (Ed.D.) doctoral programs through the College of Education. One is in administration and supervision, which is for people interested in decision-making positions in school organizations. The second degree, in curriculum and instruction, with an emphasis on a content subject field discipline, is designed primarily for the junior college teacher. The subject field areas possible in curriculum and instruction are limited to the fields in which a master's degree is already offered at either UCF or FAU.

The University of Florida, through cooperative programs, offers Doctor of Education and Educational Specialist degrees. The fields involved are Instructional Leadership, Counselor Education, Childhood Education.

Contact the College of Education Graduate Program Coordinator for further information.



# COLLEGE OF ENGINEERING

## UNDERGRADUATE PROGRAMS ENGINEERING

- Civil Engineering (BSE)
- Electrical Engineering (BSE)
- Engineering Mathematics & Computer Systems (BSE)
- Environmental Engineering (BSE)
- Industrial Engineering (BSE)
- Mechanical Engineering (BSE)

## ENGINEERING TECHNOLOGY

- Design Technology (BET)
- Electronics Technology (BET)
- Environmental Control Technology (BET)
- Operations Technology (BET)

## GRADUATE PROGRAMS ENGINEERING

- Civil Engineering (MSE)
- Electrical Engineering (MSE)
- Engineering (MS)
- Engineering Mathematics & Computer Systems (MSE)
- Environmental Engineering (MSE)
- Industrial Engineering (MSE)
- Mechanical Engineering (MSE)

## ENVIRONMENTAL SYSTEMS MANAGEMENT (MSESM)

## DOCTOR PROGRAM

- Electrical Engineering (Ph.D)

# COLLEGE OF ENGINEERING

**Dean:** *R. Kersten*, EN 207, Phone 275-2156

**Associate Dean:** *G. Schrader*, EN 212, Phone 275-2156

## PROFESSIONAL COLLEGE OF ENGINEERING

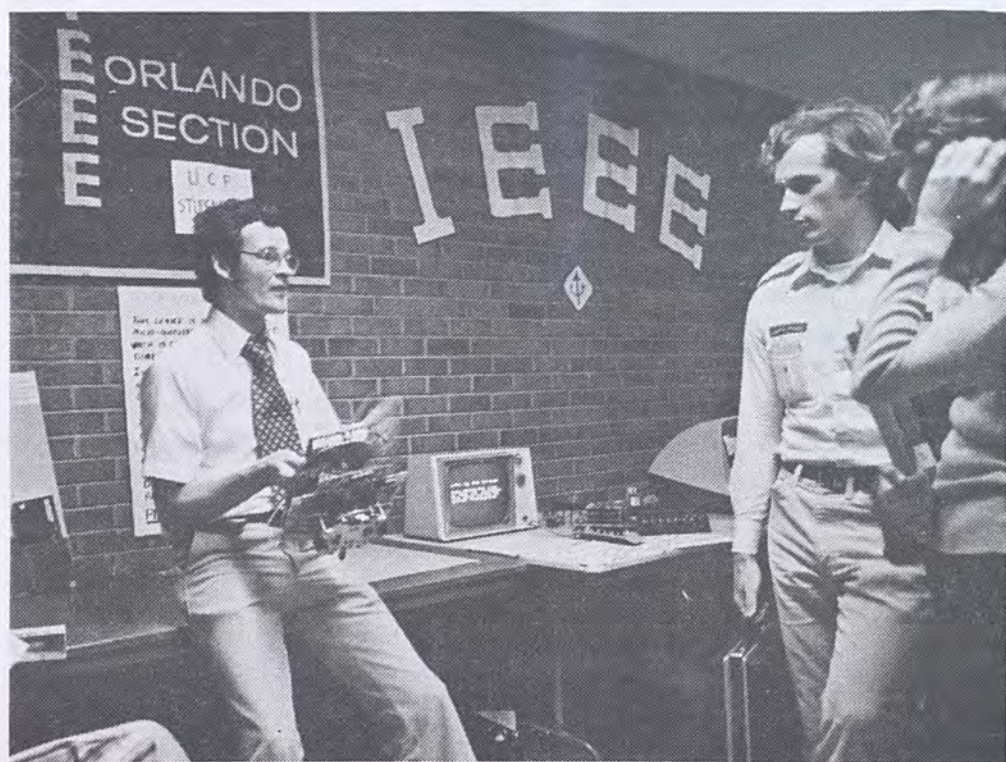
The Professional College of Engineering at the University of Central Florida was formally organized by the Engineering faculty in the Fall of 1974. The objective of the Professional College of Engineering is to produce well qualified, competent graduates from outstanding accredited programs for the practice of engineering and to conduct research and service responsive to the State of Florida and National needs. To achieve high professional status, the Professional College of Engineering has developed a unique and outstanding educational program to serve the people of Florida by providing engineering education in specifically selected professional disciplines.

## ENGINEERING CURRICULUM

The Engineering curriculum is directed toward professional objectives which are best met by completing the baccalaureate degree program followed by additional professional education at the graduate level leading to the Master of Science in Engineering.

The satisfactory completion of an engineering curriculum of a minimum of 192 quarter hours, including environmental studies courses, an engineering core curriculum, and both required and elective courses of study in an engineering option of the student's choice, leads to the degree of Bachelor of Science in Engineering. Graduates of the College of Engineering may pursue a wide variety of careers in private practice, industry, education, and government. As of Fall 1977, it is the policy of the Professional College of Engineering that all graduates from the Engineering Curriculum who receive the Bachelor of Science in Engineering or Master of Science in Engineering degrees must have taken the Fundamentals of Engineering examination (Examination of the Florida State Board of Professional Engineers and Land Surveyors or equivalent) as a graduation requirement. This policy will apply to all students entering UCF as of Fall 1977.

Students who wish to be admitted to full freshman standing in engineering studies in the College should present certain secondary school units in addition to the minimum University requirements. A total of  $3\frac{1}{2}$  units is required in mathematics, including advanced algebra, geometry, and trigonometry. Calculus is recommended. The laboratory sciences chosen must include at least one unit in physics and one in chemistry. One unit of biology is strongly recommended.



Students who have omissions or deficiencies in subject matter preparation may be required to complete additional university credit course work which may not be applied toward an engineering degree. The most common deficiencies that must be removed before beginning regular engineering course work are algebra, trigonometry, general physics, English and general chemistry.

Subject to the general grade and residence requirements of the University, provisional credit will be granted for transferred course work equivalent to that required in University of Central Florida's engineering program. These provisional credits will become final only after the student has demonstrated his ability to do satisfactory work at the University. Transfer credits in pre-engineering from a junior college will be used to satisfy freshman and sophomore level requirements only. Typically, students who have completed the A.A. degree (or equivalent education) with calculus, chemistry, physics, engineering graphics, and a course in computer science (with FORTRAN) can complete the B.S.E. program in two additional years. The status of a student and the specific credits acceptable toward his degree will be determined by the Dean of the College.

## **ENGINEERING TECHNOLOGY CURRICULUM**

Satisfactory completion of an engineering technology curriculum of 192 quarter hours, including environmental studies courses, an engineering technology core curriculum, and required and elective courses in a selected technology module of the student's choice, leads to the degree of Bachelor of Engineering Technology. Technology graduates may also seek a wide variety of careers in private practice, industry, and government. Programs of study are applications oriented and are designed to assist the student in attainment of his career objectives.

Students who wish to be admitted to the engineering technology program must possess an Associate of Science (or equivalent education) degree in an appropriate engineering technology area. The engineering technology program provides junior and senior year education. Freshman and sophomore year technology education must be taken at a community college or equivalent. Typically students who have completed the A.S. degree in technology should complete the BET program in two additional years. The status of a student and the specific credits acceptable toward his degree will be determined by the Dean of the College. Provisional credits accepted for transferred course work will become final only after a student has demonstrated his ability to do satisfactory work at the University. Students from engineering programs may transfer into the engineering technology program at the junior level.

## **STUDENT PERFORMANCE**

Prior to enrolling in courses at the 3000 level, each student must: (1) receive approval from the office of the Dean of Engineering, and (2) secure from his advisor an approved course of study for his remaining work. Generally, students with a 2.0 grade point average (C average), or higher will receive approval.

Counseling is provided in order that the student may be aided in making his choice of major. Required and elective courses for each area are listed later in this Bulletin and changes or substitutions may be made only with the approval of the Dean.

Any student whose written or spoken English in any course is unsatisfactory may be reported by the instructor to the Dean. The Dean may assign supplementary work, including additional course work, consistent with the needs of the student. The granting of a degree may be delayed until the work is satisfactorily completed.

A student enrolled in the College as an undergraduate must fulfill all University degree requirements including the Environmental Studies Program, as well as the specialized curriculum requirements for the particular degree option being pursued. To be certified for graduation, a student must achieve a "C" grade point average (2.0) overall and in the courses in his major (option), and upper division core courses within the College.

## **BACHELOR OF SCIENCE IN ENGINEERING DEGREE PROGRAM**

Engineering is one of the most important evolutionary forces in civilization today. The professional engineer should assume a leading role not only in the conceptual and planning stages but also in the design, manufacturing, construction, operation, and management phases of various engineering facilities and programs. At the same time, the professional engineer should understand that engineering innovation is a means of solving problems in our society and accept a large measure of social responsibility for significant engineering developments.

The professional engineer is the key individual in a team of technical specialists which includes engineering design specialists, engineering operations and management specialists, and engineering technicians. It is the purpose of the University of Central Florida's engineering program to provide the broad university level educational opportunities requisite for preparing qualified individuals to make effective contributions through careers in engineering and applied science in our technologically oriented society.

The principal areas of study in the engineering curriculum are devoted to the basic sciences, mathematics and the fundamentals of engineering problem solving. These courses are not training courses for any of the mechanical or manipulative skills, but rather are planned to provide preparation for development, planning, design, research, graduate work; and with certain electives, for operation, production, testing, maintenance and management. This program prepares the student for professional registration, and for the pursuit of graduate work in engineering. In addition, basic engineering programs are increasingly being considered as appropriate preparation for advanced study in other professional areas, e.g., law, medicine, architecture. For assistance and counsel in planning a program, each student will be assigned an advisor from the instructional staff in his chosen area of interest.



## ENGINEERING CORE REQUIREMENTS<sup>1</sup>

The engineering core consists of basic engineering sciences subject matter and is common to all options. Because this requirement is a substantial part of the Bachelor's degree program, it gives the student time to become adjusted and to choose a field of specialization for which he is best suited.

COP 3215	Programming and Numerical Methods	3 hours
EGN 1111	Engineering Graphics	3 hours
EGN 1380, 1381	Chemical Foundations of Engineering	6 hours
EGN 1510	Creative Design	4 hours
EGN 2382	Engineering Concepts	4 hours
EGN 3311	Engineering Analysis-Statics	4 hours
EGN 3321	Engineering Analysis-Dynamics	4 hours
EGN 3331	Mechanics of Materials	5 hours
EGN 3343	Thermodynamics	4 hours
EGN 3353	Fluid Mechanics	4 hours
EGN 3363	Structure and Properties of Materials	4 hours
EGN 3373	Principles of Electrical Engineering	4 hours
EGN 3375	Electrical Devices and Systems	4 hours
EGN 3383	Electrical Science	4 hours
EGN 3613	Engineering Economics Analysis	3 hours
EGN 3703	Systems Analysis	3 hours
or		
EGN 4714	Linear Control Systems	4 hours
EGN 3704	Engineering and the Environment	3 hours
EGN 4624	Engineering Administration	3 hours
EGN 4634	Operations Research	3 hours
ENC 3355	Professional Report Writing	3 hours
MAC 2154	Analytic Geometry	3 hours
MAP 3305	Differential Equations	4 hours
MAC 3311, 3312, 3313	Calculus	12 hours
MAC 3314	Intermediate Calculus	4 hours
PHY 3101	Modern Physics	3 hours
PHY 3421	Optics and Wave Motion	3 hours
STA 3032	Probability and Statistics for Engineers	3 hours
Biological or Earth Science Elective		3 hours

<sup>1</sup> Includes scientific requirements and advanced program electives of the Environmental Studies

## DEPARTMENT OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCES

**Chairman:** *M. Wanielista*, EN 410, Phone 275-2841

**Faculty:** *Block, Brown, Carroll, Fagan, Hartman, Jenkins, Kersten, McLellon, Mohan, Muiga, Taylor, Yousef*

The Department of Civil Engineering and Environmental Sciences offers an option in Environmental Engineering and an option in Civil Engineering. The Environmental Engineering option is concerned primarily with the interaction of man and his environment, and the planning, design, and control of

systems for environmental quality management, with emphasis on the water environment. The Civil Engineering option is primarily concerned with fundamental civil engineering design and analysis skills in such areas as structures, soil mechanics, sanitary engineering, and transportation. Environmental and civil engineers are responsible for research, development, planning, design, and construction of structures and processes that form the basis of contemporary civilization.

Programs of study are available within these options which enable the student to pursue an integrated sequence of courses in major fields. These include not only basic and fundamental civil and environmental engineering disciplines, but also specialized support courses in areas of environmental and water resources engineering, structures and geotechnical engineering, and transportation and urban systems engineering. These courses reflect contemporary developments and trends in these engineering disciplines.

The curriculum in Environmental Engineering (leading to a B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

## **BACHELOR OF SCIENCE IN ENGINEERING: CIVIL ENGINEERING**

### **Degree Requirements**

1. University graduation requirements  
(See page 47)
  2. Environmental studies requirements  
(See page 66)
  3. Engineering core requirements  
(See page 111)
  4. Required Courses
 

CES 4124	Structural Engineering Analysis	4 hours
CES 4605	Structural Steel Design	4 hours
or		
CES 4704	Structural Concrete Design	4 hours
ECI 4305	Geotechnical Engineering I	4 hours
ENV 4404	Environmental Engineering—Water Supply	4 hours
ENV 4504	Environmental Engineering—Wastewater	4 hours
TTE 4004	Transportation Engineering	4 hours
TTE 4504	Urban Planning	3 hours
  5. Restricted Electives  
 Technical Electives are to be courses consistent with department objectives and chosen with the approval of the student's faculty advisor and department chairman. 12 hours
  6. Electives  
None
- Total Quarter Hours Required 192

## **BACHELOR OF SCIENCE IN ENGINEERING: ENVIRONMENTAL ENGINEERING**

### **Degree Requirements**

1. University graduation requirements  
(See page 47)
  2. Environmental studies requirements  
(See page 66)
  3. Engineering core requirements  
(See page 111)
  4. Required Courses

EES 4202	Environmental Engineering—Chemical Foundations I	3 hours
EES 4204	Environmental Engineering—Chemical Foundations II	3 hours
ENV 4119	Air Pollution	3 hours
ENV 4404	Environmental Engineering—Water Supply	4 hours
ENV 4434	Sanitary Systems Design	3 hours
ENV 4504	Environmental Engineering—Wastewater	4 hours
  5. Restricted Electives  
Technical Electives are to be courses consistent with department objectives and chosen with the approval of the student's faculty advisor and department chairman. 19 hours
  6. Electives  
None
- Total Quarter Hours Required 192

## **DEPARTMENT OF ELECTRICAL ENGINEERING AND COMMUNICATION SCIENCES**

**Chairman (Acting):** *E. Erickson*, EN 315, Phone 275-2786

**Faculty:** *Harden, Harris, McCarter, Mathews, Patz, Petrasko, Phillips, Riad, A., Riad, S., Simons, Towle, Walker*

Electrical Engineers are primarily concerned with the development and utilization of devices and systems which are based on electrical phenomena. The range of application includes computer systems, electronics, control systems, electrical power utilization, communication systems, medical instrumentation, etc. The electrical engineer can find professional challenges in virtually every facet of modern technology.

The option in Electrical Engineering is designed to present the basic electrical engineering principles which are common to this broad spectrum of application. In addition, courses are offered which present in-depth studies of specific electrical engineering subdisciplines such as computer engineering, electrical networks and electronics, electromagnetic fields and microwaves, electromechanics and control, power transmission and utilization, communication and information theory, and solid state systems and devices.

Many modern scientific developments are either essentially electrical in character or depend on electrical equipment and technique. Electrical Engineering graduates will find a broad employment opportunity in the field since it enters into much of industry and service where power is utilized, intelligence transmitted, and control exercised over physical, chemical, or mechanical operations. The curriculum in Electrical Engineering (leading to the B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

## **BACHELOR OF SCIENCE IN ENGINEERING: ELECTRICAL ENGINEERING**

### **Degree Requirements**

1. University graduation requirements

(See page 47)

2. Environmental studies program

(See page 66)

3. Engineering core requirements

(See page 111)

4. Required Courses

EEL 3122C	Electrical Networks	4 hours
EEL 3307C	Electronic Engineering	4 hours
EEL 3470	Electromagnetic Fields	4 hours
EEL 4342C	Logical Component Design	4 hours
EEL 3502C	Signal Analysis and Communications	4 hours

5. Restricted Electives

Technical Electives are to be courses consistent with department objectives and chosen with the approval of the student's faculty advisor and department chairman. 18 hours

6. Electives

None

Total Quarter Hours Required

192



# ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS

**Chairman:** G. Whitehouse, EN 412, Phone 275-2236

**Faculty:** Bauer, Carroll, Hagedoorn, Klee, Patz, Towle

In contemporary professional engineering practice, and in research and development activities there is an increasing need for engineers with a high degree of training and capability in the application of mathematics and computers to the modeling, simulation and solution of complex technical problems. Many of our modern industries and governmental organizations are involved in the design and analysis of highly complex equipments and systems often requiring rigorous mathematical treatment which can only be carried out effectively through the use of modern, high speed, digital/analog/hybrid computer facilities. The computer has become an indispensable partner to the aerospace systems designer, the microelectronic circuit designer, the environmental systems analyst, the industrial manager, and many other professional engineering oriented activities. Thus, students majoring in Engineering Mathematics and Computer Systems will enjoy a broad spectrum of challenging opportunities.

The option is inter-disciplinary and allows considerable flexibility in tailoring programs to fit individual student interest. The curriculum in Engineering Mathematics and Computer Systems is fully accredited by the Engineers' Council for Professional Development.

## BACHELOR OF SCIENCE IN ENGINEERING: ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS

### Degree Requirements

1. University graduation requirements

(See page 47)

2. Environmental studies program

(See page 66)

3. Engineering core requirements

(See page 111)

4. Required Courses

ECM 4124	Engineering Mathematical Systems	3 hours
ECM 4504	Mini-Computers in Engineering Systems	4 hours
ECM 4814	Real Time Mini-Computer Systems	4 hours
EEL 4342	Logical Component Design	4 hours
EGN 4714	Linear Control System	4 hours
ESI 4144	Engineering Applications of Computer Methods	4 hours
ESI 4503	Numerical Methods in Systems Analysis	3 hours

5. Restricted Electives

Technical Electives are to be courses consistent with department objectives and chosen with the approval of the student's faculty advisor and department chairman. 13 hours

6. Electives

None

Total Quarter Hours Required

192

# DEPARTMENT OF INDUSTRIAL ENGINEERING & MANAGEMENT SYSTEMS

**Chairman:** G. Whitehouse, EN 412, Phone 275-2236

**Faculty:** Bauer, Doering, Gambrell, Hosni, Klee, Linton, Park, Schrader, White, Tuliano

The option in Industrial Engineering is concerned principally with the design, improvement, and installation of integrated systems of men, materials, and equipment for operations through the application of the principles of the engineering, mathematical, physical, and behavioral sciences.

The program of study available within this option enables the student to pursue an integrated series or sequence of courses in the major field which includes not only basic and fundamental courses but specialized courses as well, in the areas of management standards development, production and inventory control, project management, work analysis and design, management information systems, computer simulation, operations research, industrial facilities planning and design, and human engineering. These specialized courses reflect the contemporary developments and trends in each of these areas with emphasis on uses of the digital computer in appropriate courses.

There is a growing tendency on the part of industry, government and institutions to select engineering personnel for managerial positions. Because of this the IEMS courses are oriented to systems management principles and concepts so as to enable the Industrial Engineering graduate to accept and succeed in these opportunities. The curriculum in Industrial Engineering (leading to the B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

## BACHELOR OF SCIENCE IN ENGINEERING: INDUSTRIAL ENGINEERING

### Degree Requirements

1. University graduation requirements  
(See page 47)
2. Environmental studies program  
(See page 66)
3. Engineering core requirements  
(See page 111)

#### 4. Required Courses

EIN 3315	Management Standards	4 hours
EIN 4116	Industrial Information Systems	3 hours
EIN 4243	Human Engineering	3 hours
EIN 4332	Management Control Systems	3 hours
EIN 4364	Industrial Facilities Planning and Design	4 hours
ESI 4503	Numerical Methods in Systems Analysis	3 hours
ESI 4524	System Simulation With Digital Computers	3 hours

#### 5. Restricted Electives

Technical Electives are to be courses consistent with department objec-

tives and chosen with the approval of the student's faculty advisor and department chairman. 16 hours

6. Electives  
None

Total Quarter Hours Required

192

## **DEPARTMENT OF MECHANICAL ENGINEERING AND AEROSPACE SCIENCES**

**Chairman (Acting):** *J. Hartman*, EN 115, Phone 275-2416

**Faculty:** *Beck, Bishop, Chang, Evans, Hagedoorn, Minardi, Nimmo, Nuckolls, Rapson, Smith, Varney, Ventre, Wall, Worbs*

The Department of Mechanical Engineering and Aerospace Sciences is primarily concerned with dynamic physical systems such as transportation, production and energy conversion. Because such systems involve an energy source, the mechanical or aerospace engineer is concerned with the application of the basic laws of the engineering sciences to the conversion, transfer and control of the energy. When dealing with problems of this nature, the engineer must consider the economic constraints and the social implications of the solutions which he proposes.

The Mechanical Engineering option provides the student with the opportunity to pursue his educational objectives within the framework of this broad theme. Primary emphasis is given to the departmental sub-disciplines of aerospace sciences, measurements systems engineering, mechanical systems design and control, energy conversion and power systems, thermal sciences and engineering acoustics.

The program is specifically designed to give the student a broad-based undergraduate engineering sciences program in order that he will have sufficient knowledge to converse with specialists in other fields of engineering and to analyze on his own the more basic problems in these fields. By judiciously selecting courses from the department subdisciplines, a firm foundation is laid in order that the student will obtain the theoretical tools and the design methodology to pursue successfully a career in the mechanical or aerospace engineering professions. The Curriculum in Mechanical Engineering (leading to the B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

### **BACHELOR OF SCIENCE IN ENGINEERING: MECHANICAL ENGINEERING**

#### **Degree Requirements**

1. University graduation requirements  
(See page 47)
2. Environmental studies program  
(See page 66)
3. Engineering core requirements  
(See page 111)

#### **4. Required Courses**

EML 3106      Thermodynamics of Mechanical Systems      4 hours

EML 3262	Kinematics and Kinetics of Machines	3 hours
EML 3303	Measurement Systems	3 hours
EML 3502	Machine Design and Analysis	4 hours
EML 4142	Heat Transfer	4 hours
EML 4222	Vibration Analysis	4 hours
EML 4505	Engineering Design	3 hours
EML 4412L	Mechanical Engineering Laboratory	2 hours

5. Restricted Electives

Technical Electives are to be courses consistent with department objectives and chosen with the approval of the student's faculty advisor and department chairman. 11 hours

6. Electives

None

Total Quarter Hours Required

192

## DEPARTMENT OF ENGINEERING TECHNOLOGY

**Chairman:** *R. Denning*, EN 118, Phone 275-2268

**Faculty:** *Bullard, Griffith, Head, Holbaugh, Hubler, Osborne*

The Engineering Technology Degree Program at UCF includes only the upper division (junior and senior years) and is designed primarily for the student who has completed an A.S. degree in Engineering Technology or an equivalent program at a community college. The community college two-year associate of science program is designed to provide the student with the training necessary to become an engineering technician. The upper division Bachelor of Engineering Technology program at the University of Central Florida is designed to advance the engineering technician to the engineering technologist level.

The four year engineering technology graduate will provide a vital link in the engineering—fabrication/construction—facility operations chain. He will be practice and applications oriented while at the same time, possessing a broad and comprehensive education in the field. As such he will be key individual in teams of technical specialists dealing with the environment today. Completion of the required curriculum will prepare qualified individuals to make significant contributions to society and will allow them to progress into responsible technical and management positions.

Principal areas of study in the engineering technology curriculum, building on a sound base attained through the AS degree, will include mathematics and communications. In addition, substantial additional work will be taken in the technical sciences and technical specialty. The courses will include theory and practice along with training. Hence they will provide a sound technical base for subsequent work. For assistance and counsel in planning a program, each student will be assigned an advisor to assist him in selecting the best course sequence to meet his career objectives.

The areas of specialization (modules) in Engineering Technology are concerned principally with the details of design, maintenance, operation, environmental monitoring and the fabrication/construction functions. The work of the technologist is in direct support of the engineer and the emphasis is on material results and details as constructed, within the



broader conceptual and systems processes of the engineer.

Four engineering technology modules (options) are offered as shown. The courses listed in each module are recommended for all students electing to pursue that option. Any deviation from the recommended course in the option must be approved by the Department Chairman and the Dean.

## BACHELOR OF ENGINEERING TECHNOLOGY

### Degree Requirements

1. University graduation requirements  
(See page 47)
2. Environmental studies program (See page 66)
  - Basic (54 hours)
  - Community College (39 hours)<sup>1</sup>
  - UCF (15 hours)
  - Advanced (15 hours)

### 3. Required Courses

The program to be taken at UCF requires a total of 192 quarter hours. Assuming good articulation with the Associate of Science Program being transferred, the following courses will be required:

Transferred from Community College		
Lower Level Technical Specialty <sup>2</sup>		48 hours
Environmental Studies (Includes Science & Math)		39 hours
Related Studies		9 hours
<b>TOTAL (Maximum transfer)</b>		<b>96 hours</b>

#### Additional Environmental and Related Studies

ENC 3355	Professional Report Writing	3 hours
MAC		
3253-3254	Applied Calculus	8 hours
Advanced ESP program		15 hours
Additional Science Environment		4 hours

<sup>1</sup> Includes algebra, trigonometry, basic science, English, speech or report writing, humanities and social sciences. At least one course each in chemistry, physics and computer science should be completed at the Community College. Credit shown is maximum transferable under this program.

<sup>2</sup> Includes one course in computer programming.

ECO 2000	Economics and Man	3 hours
<b>TOTAL</b>		<b>27 hours</b>

### Engineering Technology Core

ETE 4111	Electricity and Electronics	5 hours
ETG 3502	Applied Statics	4 hours
ETG 4510	Applied Dynamics	4 hours
ETG 4530	Strength of Materials	4 hours
ETI 3421	Materials and Processes	4 hours
ETI 3671	Technical Economic Analysis	3 hours
ETM 3310	Applied Fluid Mechanics	4 hours
ETM 4201	Applied Thermodynamics	4 hours
<b>TOTAL</b>		<b>32 hours</b>

Area of Specialization (see below) 31 hours

Total Minimum Hours Required  
(Community College 96, UCF 96) 192 hours

## AREAS OF SPECIALIZATION

### 1. Design Technology Module

The specialization in Design Technology will present the student with the knowledge and skills needed for application to problems concerning specifications, calculations, and procedures involving the design, redesign, testing and operations of mechanical parts, units and assemblies. Typical community college AS Degree programs used for entrance to UCF's Design Technology specialization are Mechanical, Drafting Design, Aerospace and Air Conditioning Technologies.

#### Required Courses (20 hours)

ETC 4410	Structural Design	4 hours
ETE 4735	Electro-Mechanical Design	4 hours
ETI 3440	Product Design	4 hours
ETM 4403	Applied Kinematics	4 hours
MAP 3401	Problem Analysis	4 hours

#### Upper Level Technical Electives (11 hours)

At least two courses must be selected from the courses listed below.

BCN 3761	Contracts and Specifications	3 hours
ETG 4910	Senior Project	3 hours
ETM 4512	Applied Design of Machine Elements	4 hours
ETM 4590	Design Integration	3 hours
ETM 4750	Air Conditioning Design	4 hours

### 2. Electronics Technology Module

The specialization in Electronics Technology is designed to present the electronics principles beyond the first two years of study that are essential for installation, operation, maintenance and design support or electrical/electronics equipment and facilities. Typical community college AS Degree programs used for entrance to UCF's Electronics Technology specialization are Electronic, Electrical and Instrumentation Technologies. A minimum of 20 quarter hours of basic electronics must be included in the AS Degree program.

#### Required Courses (20 hours)

ETE 3122	Electronics Circuits	4 hours
ETE 3632	Digital Circuits	4 hours
ETE 4161	Senior Systems Lab	2 hours
ETE 4326	Feedback Control	3 hours
ETE 4422	Communications Systems	3 hours
MAP 3401	Problem Analysis	4 hours

#### Electives (11 hours)

At least two courses must be selected from the courses listed below.

ETE 4210	Servo Mechanisms	4 hours
ETE 4423	Communication Systems II	4 hours
ETE 4432	Antennas and Propagation	3 hours
*ETE 4541	Power Transmission	4 hours
*ETE 4562	Power Utilization	4 hours

ETE 4650	Microcomputers	4 hours
ETE 4661	Computer Systems	4 hours
ETE 4735	Electro-Mechanical Design	4 hours

\* Note: ETE 4541 or ETE 4562 may be substituted for either, but not both ETM 3310 or ETG 4530.

### 3. Environmental Control Technology Module

The specialization in Environmental Control Technology is designed to give the student upper level courses in water, wastewater, air pollution, solid wastes, sampling and analysis, and control processes that are essential for environmental operations control. Typical community college AS Degree programs used for entrance to UCF's Environmental Control Technology specialization are Environmental Control, Civil, and Chemical Technologies.

#### Required Courses (19 hours)

ETI 4700	Occupational Safety	3 hours
ETM 3314	Hydraulics/Hydrology	3 hours
EVS 3220	Wastewater Treatment	3 hours
EVS 3240	Water Supply Systems	3 hours
EVS 4233	Treatment Plant Analysis and Control	3 hours
MAP 3401	Problem Analysis	4 hours

#### Electives (12 hours)

At least two courses must be selected from the courses listed below.

BCN 3761	Contracts and Specifications	3 hours
EVS 4101	Environmental Sampling and Analysis	3 hours
EVS 4362	Air Pollution Control	3 hours
EVS 4682	Solid Wastes Management	3 hours

### 4. Operations Technology

The module in Operations Technology is designed to present the management operations, supervisory and methods courses that are essential for operations control in the sales, service, manufacturing and construction industries. The curriculum is designed to accept a broad range of AS Degree backgrounds and develop the management and supervisory skills necessary to produce a marketable skill. AS Degree programs with emphasis on Architectural, Building Construction, Aerospace, Automotive Services, Civil, Computer, Fire Control, Drafting and Graphics, Industrial Management or Supervision, Quality Control and Surveying Technologies are normally acceptable.

#### Required Courses (19 hours)

ETI 3611	Work Analysis	3 hours
ETI 3651	Computer Methods in Industry	3 hours
ETI 3654	Cost Estimating and Analysis	3 hours
ETI 4640	Process Planning and Scheduling	3 hours
ETI 4700	Occupational Safety	3 hours
MAP 3401	Problem Analysis	4 hours

### Electives (12 hours)

At least two courses must be selected from the courses below.

BCN 3761	Contracts and Specifications	3 hours
BCN 4220	Construction Methods	3 hours
ETC 4410	Structural Design	4 hours
ETI 3690	Technical Sales	3 hours
ETI 3440	Product Design	4 hours
ETI 4110	Industrial Quality Control	3 hours
ETI 4452	Plant Maintenance Operations	3 hours
ETI 4661	Plant Layout & Material Handling	3 hours
ETM 4750	Applied Air Conditioning	4 hours



# COLLEGE OF ENGINEERING GRADUATE PROGRAMS

The College of Engineering offers the Master of Science, the Master of Science in Engineering, the Master of Science in Environmental Systems Management and the Doctor of Philosophy (jointly with the U of F) in Electrical Engineering degrees.

These programs are designed to provide for advanced professional engineering education (MSE) or specialized education in selected areas (MS or MSES). It is the objective of the College of Engineering to produce well-qualified, competent graduates from outstanding accredited programs for the professional practice of engineering and to conduct research and service responsive to the needs of the State of Florida and the Nation.

It has long been recognized that the minimum educational qualification for entry into the engineering profession is the five-year B.S.E./M.S.E. program. This unique "professional school" program is geared to educating practitioners of the profession. The program is clearly in the interests of protecting the health, safety, and general welfare of the public and recognizes the unique statutory (Florida Status Chapter 471) and accreditation (Engineers' Council for Professional Development) requirements imposed on those who teach and administer the program.

## MASTER OF SCIENCE IN ENGINEERING

**Program Coordinator:** *B. Mathews*, EN 211, Phone 275-2156

Advanced professional engineering competencies are achieved through the M.S.E. program. This program is intended for those who have attained an engineering bachelor's degree. Based on the very strong undergraduate, inter-departmental, college-wide engineering core plus option approach, this program leads to the M.S.E. degree, also based on an interdisciplinary approach, but at the department level. Thus the effective and efficient unified core approach is continued through the master's level.

The Master of Science in Engineering programs are fully accredited by the Engineers' Council for Professional Development (ECPD).

### Admission Requirements

1. University Admission Requirements  
(See pages 34 and 60)
2. College Admission Requirements
  - a. Applicants for the M.S.E. program must have the B.S.E. or equivalent from an ECPD accredited engineering curriculum in the appropriate discipline area.
  - b. Applicants for the M.S. or M.S.E.S.M. programs must present baccalaureate credentials appropriate to the specialized area of study.

### Degree Requirements

1. University Graduate Policies and Procedures  
See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.

2. Prerequisites: Engineering Bachelor's Degree or Equivalent.
  3. Required Courses: At least one advanced course in each departmental sub-discipline beyond B.S.E. requirements 19-26 hours
  4. Restricted Electives: Additional subdiscipline-specialty courses 9-15 hours  
 Additional advanced mathematics, computer systems, natural sciences, engineering sciences, or appropriate supportive areas (beyond B.S.E. core requirements or equivalent) 9-15 hours
  5. Thesis or Research Report: Students must be registered in the quarter in which application for graduation is filed 9 or 3 hours
  6. Examination: Oral defense of thesis or research report is required. Satisfactory completion of comprehensive examination may be required.
- Total Quarter Hours Required (M.S.E. Program) 45

## MSE AREAS OF SPECIALIZATION

### Departmental Specialization Core Course Requirements

Each student will select, with the approval of his graduate committee, departmental core courses as noted below for the professional options. Additional course work may be selected in one of the subdiscipline specialty areas to provide program depth. The student is referred to the course description section of the catalog for further information.

1. CIVIL ENGINEERING OPTION: The core requirements will be met by the following courses.
 

CES 6606	Steel Design (3)	
or		3 hours
CES 6707	Concrete Design (3)	
ECI 5215	Hydraulic Engineering	4 hours
ECI 5306	Geotechnical Engineering II	4 hours
ENV 6436	Water and Wastewater Systems Design	3 hours
TTE 5204	Traffic Engineering (4)	
or		4 hours
TTE 5720	Design Elements of Transportation Systems (4)	
2. ELECTRICAL ENGINEERING OPTION: At least one course from each of five subdiscipline groupings other than the chosen specialization area.
  - Communications Systems
  - Systems Control
  - Digital Systems
  - Electromagnetic Theory
  - Electronic Circuits
  - Optical Communications Systems
  - Signal and Circuit Theory
3. ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS OPTION: The core requirements for all students will be met by the following courses.
 

ECM 5135	Analytical Methods in Engineering	3 hours
ECM 5235	Analytical Methods in Engineering	3 hours

EEL 6349	Computer System Design	3 hours
EEL 6717	Digital Computer Systems	3 hours
MAP 5405	Engineering Mathematical Analysis	3 hours
ECM 5505C	Minicomputer Application in Engineering	4 hours
		19 hours

4. ENVIRONMENTAL ENGINEERING OPTION: The student will take the following Environmental Engineering Core and Specialty Courses.

ENV 5625	Water Resources Engineering	4 hours
ENV 6015	Unit Operations and Process of Sanitary Engineering I	4 hours
ENV 6016	Unit Operations and Processes of Sanitary Engineering II	4 hours
ENV 6017	Unit Operations and Processes Laboratory	2 hours
ENV 6106	Atmospheric Pollution Control	3 hours
ENV 6356	Solid Wastes Management	4 hours
		21 hours

In addition, the student will take at least one course from each of the two following areas:

1. Transportation and Urban Systems Engineering
2. Structures and Geotechnical Engineering

5. INDUSTRIAL ENGINEERING OPTION: The core requirements for all students will be met by the following courses.

EIN 5117	Management Information Systems	4 hours
EIN 6215	System Safety	3 hours
EIN 6337	Production and Inventory Control	4 hours
EIN 6357	Engineering Economic Analysis	3 hours
STA 5156	Probability for Engineers	3 hours
ESI 5234	Engineering Reliability & Qual. Assur.	3 hours
ESI 6316	Operations Research	3 hours
STA 5326	Statistics for Engineers	3 hours
		26 hours

6. MECHANICAL ENGINEERING OPTION: The core requirements for all students will be met by the courses listed:

CES 5102	Intermediate Mechanics of Materials	4 hours
EML 5271	Intermediate Dynamics	3 hours
EML 6154	Conduction Heat Transfer	3 hours
or		
EML 6155	Convection Heat Transfer	4 hours
or		
EML 6157	Radiation Heat Transfer	3 hours
EML 6306	Experimental Measurements	3 hours
EML 6530	Principles of Design	3 hours
EML 6609	Environmental Thermodynamics	3 hours
EML 6710	Gas Dynamics	4 hours
or		
EML 6712	Mechanics of Viscous Flow	4 hours
		23-24 hours

## MASTER OF SCIENCE

**Program Coordinator:** B. Mathews, EN 211, Phone 275-2156

This graduate program is designed to provide the competent student in engineering or other selected fields an opportunity to specialize in a particular subject area within engineering. Normally this objective may be attained through the satisfactory completion of graduate-level course work and research endeavor.

### Admissions Requirements

1. University Admission Requirements  
(See pages 34 and 60)
2. Program Admission Requirements  
(See page 107 for College Administration Requirements)

### Degree Requirements

1. University Graduate Policies and Procedures  
See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies
  2. Prerequisites: Baccalaureate credentials appropriate to the specialized area of study.
  3. Required Courses 24-30 hours
  4. Restricted Electives: Additional advanced mathematics (beyond MAC 3314), computer systems, natural sciences, engineering sciences, or appropriate supportive areas. 12 hours
  5. Thesis or Research Report: 9 or 3 hours
  6. Examinations: Oral defense of thesis or research report is required. Satisfactory completion of a comprehensive examination may be required.
- Total Quarter Hours Required (M.S. Program) 45

## MASTER OF SCIENCE IN ENVIRONMENTAL SYSTEMS MANAGEMENT

**Program Coordinator:** B. Mathews, EN 211, Phone 275-2156

The College of Engineering offers graduate work leading to the Master of Science in Environmental Systems Management. The program is designed to provide for advanced professional and specialized education in selected areas of engineering and science related to the management and control of our natural environment.

The program provides for the preparation of engineering specialists for service in environmental related occupations by allowing concentrated study in a limited number of subdisciplines. The program is open to those who have closely related to the environmental sciences and environmental or systems engineering.



## Admission Requirements

1. University Admission Requirements  
(See pages 47 and 66)
2. Program Admission Requirements  
(See page 123 for College Admission Requirements)

## Degree Requirements

Degree requirements vary depending upon student interests and background. Interested students should consult the chairman of the Civil Engineering and Environmental Sciences Department.

Total Quarter Hours Required

45

## DOCTOR OF PHILOSOPHY DEGREE

The College of Engineering is participating in a Cooperative Doctoral program in Electrical Engineering with the University of Florida. Interested students should consult with the chairman of the Electrical Engineering and Communication Sciences Department.



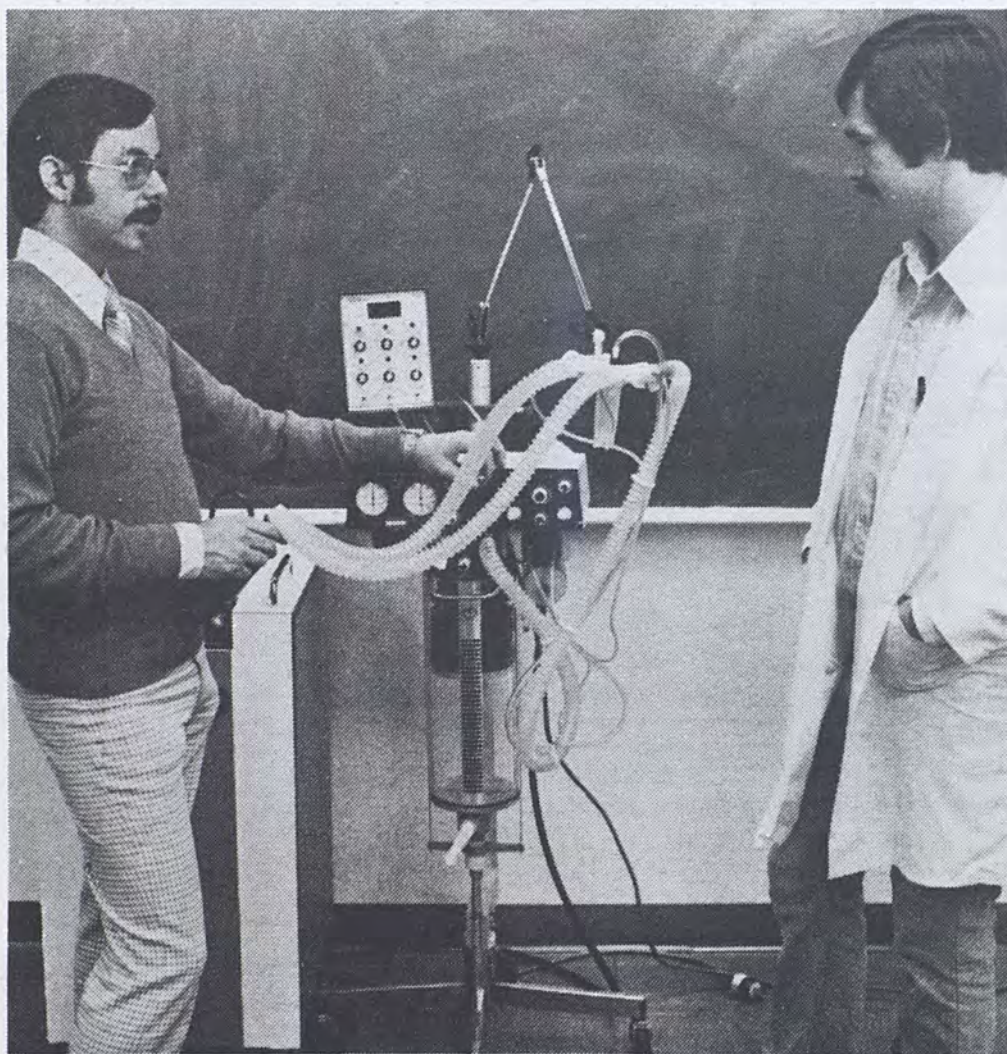
# COLLEGE OF HEALTH RELATED PROFESSIONS

## UNDERGRADUATE PROGRAMS

Communicative Disorders (BA)  
Medical Record Administration (BS)  
Medical Technology (BS)  
Nursing (BS)  
Radiologic Sciences (BS)  
Respiratory Therapy (BS)

## OTHER PROGRAMS

Pre-Occupational Therapy  
Pre-Physical Therapy



## **COLLEGE OF HEALTH RELATED PROFESSIONS**

**Dean:** *O. Elder*, BL 329, Phone 275-2406

To meet the needs of students and the community the College of Health Related Professions was established in 1978. Included in the College are programs in Communicative Disorders, Medical Record Administration, Medical Technology, Nursing, Radiologic Sciences, and Respiratory Therapy. In addition to the six degree programs the College offers a core area of Health Sciences to broaden the student's understanding of the health care system as well as provide counseling in pre-physical and pre-occupational therapy. The College believes that through a liberal arts education and an intensive study in a specific health related area a graduate will be a valuable asset to health care in the nation as well as Florida.

### **GENERAL REQUIREMENTS FOR THE BACHELORS DEGREE**

All programs in the College of Health Related Professions are limited access programs. Applications to a limited access program must be completed before March 1 preceding the quarter in which the student plans to begin the limited access program. Before acceptance a student must have completed a suitable background of course work and have accomplished a minimum grade point average of 2.5.

In addition to University and program requirements each student in a limited access program in the College of Health Related Professions will be required to complete the following:

- |             |   |
|-------------|---|
| 1. HSC 3328 | U. S. Health Care Systems                       |
| 2. HSC 4101 | Organization and Management for Health Agencies |

## **COMMUNICATIVE DISORDERS**

**Director:** *T. Mullin*, CB 117, Phone 275-2121

**Faculty:** *Bennett, Buckham, Ingram*

The primary goal of the Communicative Disorders program is the preparation of clinical specialists in Speech and Language Pathology and Audiology. The undergraduate offerings are consistent with the philosophies of the American Speech and Hearing Association in that most of the coursework is designed to give the student the theoretical foundations on which to build competent clinical skills. An on campus clinic as well as external affiliations including area public schools, community speech and hearing centers, hospital clinics, physicians offices, industrial settings and a mobile diagnostic unit are available for the development of various clinical competencies.

### **MINOR**

The Program of Communicative Disorders offers a minor in Communicative Disorders consisting of a minimum of 32 quarter hours.

Required courses: SPA 3001, SPA 4030, SPA 4201, SPA 4402, SPA 4210, and LIN 3710.

## BACHELOR OF ARTS: COMMUNICATIVE DISORDERS

### Degree Requirements

1. University graduation requirements

(See pages 47 and 66)

2. Special college and/or department requirements

(See page 129)

3. Required courses

SPA 3001	Introduction to Communicative Disorders	4 hours
LIN 3710	Biolinguistics	4 hours
SPA 2112	Basic Phonetics	6 hours
SPA 3101	Physical Bases of Speech and Hearing	6 hours
SPA 4030	Basic Audiology	6 hours
SPA 3550	Clinical Methods	6 hours
SPA 4201	Communicative Disorders-Articulation	6 hours
SPA 4402	Communicative Disorders-Language	6 hours
SPA 4210	Communicative Disorders-Voice	6 hours
SPA 4222	Communicative Disorders-Stuttering	6 hours
SPA 3052	Clinical Observation & Practice	3 hours
SPA 4552	Differential Diagnosis in Communicative Disorders	6 hours
SPA 4323	Aural Habilitation	6 hours
SPA 4250	Organic Speech Disorders	6 hours

4. Restricted Electives

5. Electives

Total Quarter Hours Required

180

The Board of Regents has authorized planning for a Masters of Arts in Communicative Disorders: (Anticipated Fall 1979 Implementation) Specific information may be obtained by contacting the Director of Communicative Disorders.

## PROGRAM IN MEDICAL RECORD ADMINISTRATION

**Director:** M. Neill, BL 304, Phone 275-2741

**Faculty:** C. Barr

The Medical Record Administration program leads to a baccalaureate degree in Medical Record Administration and meets the accreditation requirements of the American Medical Association (AMA) and the American Medical Record Association (AMRA).

The medical record administrator is a member of the modern hospital team and is the professional responsible for (1) supervision and acquisition of complete medical records on each patient cared for by the medical team, (2) design and management of patient information systems regulating processing, storing, retrieval, and collecting statistics and releasing health information, and (3) providing assistance to hospital administration and the medical staff in developing criteria for medical care evaluation studies by abstracting medical data and preparing statistical reports.

Before applying to the professional phase of the program, students are advised to have completed courses in biology, anatomy with lab, physiology with lab, statistics, data processing and typing.

Personal qualifications include a keen intellect, initiative and organization, and above average ability for standards of accuracy and detail. Communication skills as well as diplomacy and tact in dealing with people are desirable assets.

Upon completion of the approved program, the student is eligible to take the national examination administered by the American Medical Record Association to qualify as a Registered Record Administrator.

Employment opportunities are excellent with unlimited career possibilities combined with excellent salaries and rapid advancement into positions of leadership.

## **BACHELOR OF SCIENCE: MEDICAL RECORD ADMINISTRATION**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements 7 hours  
(See page 129)  
(HSC 3338 & HSC 5336)
3. Required Courses
 

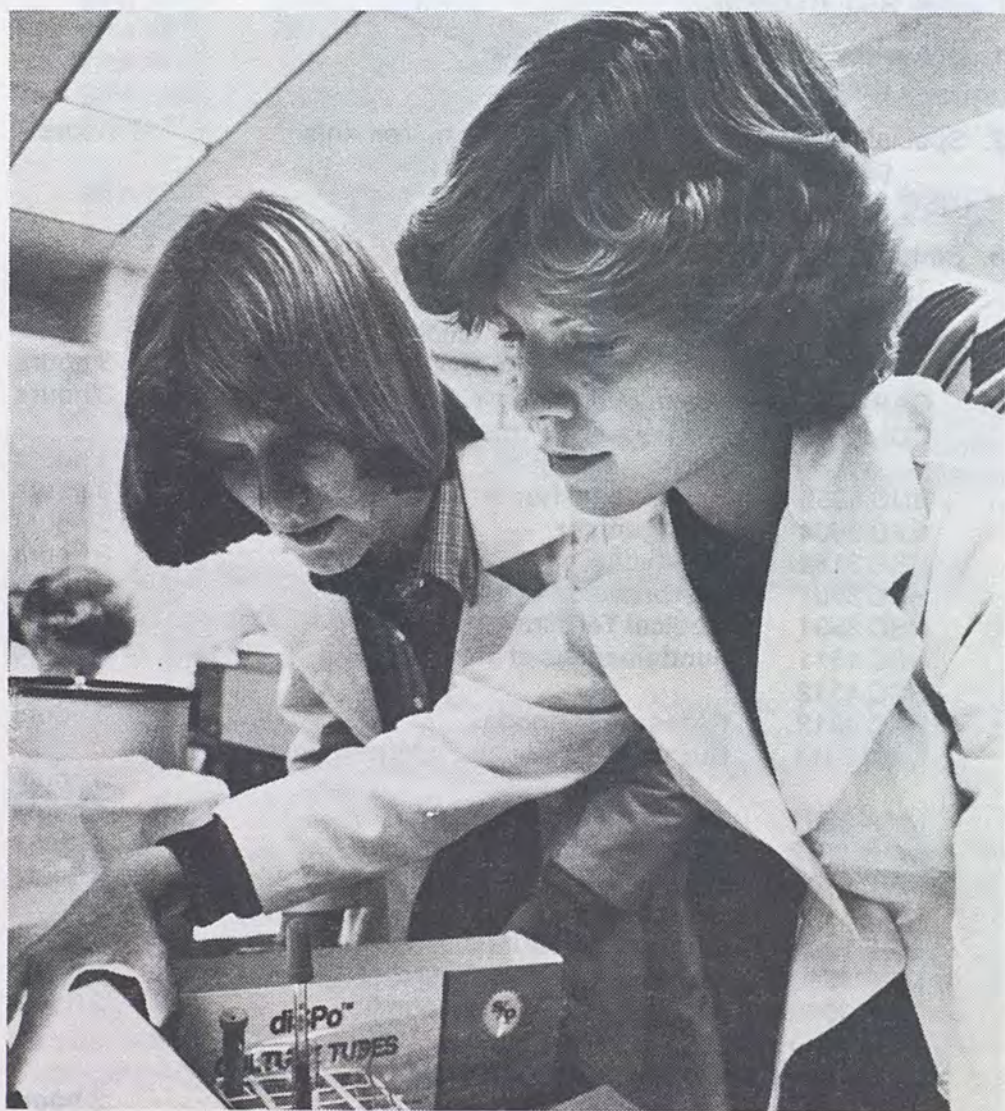
BSC 1010C	Basic Biology	5 hours
CAP 3001	Computer Fundamentals for Business Application I	3 hours
CAP 4401	Health Information Computer Systems	3 hours
COM 3110	Business and Professional Communication	4 hours
ENC 3355	Professional Report Writing II	3 hours
GEB 3004	Management	3 hours
HSC 3152	Health Law	3 hours
HSC 3501	Interpretation of Clinical Tests	3 hours
HSC 3531	Medical Terminology	5 hours
HSC 4511	Fundamentals of Medicine I & II	8 hours
HSC 4512		
HSC 4912	Research Methods	3 hours
MAN 3151	Human Behavior and Interpersonal Relations	3 hours
MAN 3301	Personnel Management	4 hours
MAN 4722	Decision Systems Analysis	4 hours
MRE 3101C	Medical Record Administration I	3 hours
MRE 3110C	Medical Record Administration II	5 hours
MRE 3202C	Coding Procedures	5 hours
MRE 3210C	Health Information Retrieval Systems	3 hours
MRE 3800	Directed Experience I and II	2 hours
MRE 3810		
MRE 4304	Medical Record Department Management	3 hours

MRE 4312C	Analysis of Medical Record Department Operations	3 hours
MRE 4400C	Health Care Records	5 hours
MRE 4410	Medical Care Evaluation Procedures	3 hours
MRE 4420	Health Legislation	3 hours
MRE 4830	Directed Experience III	2 hours
MRE 4831	Directed Experience IV	2 hours
MRE 4835	Management Affiliation	4 hours
PCB 3703C	Human Physiology	5 hours
STA 2014	Fundamentals of Statistics	4 hours
ZOO 3733C	Human Anatomy	5 hours

4. Restricted Electives: To be selected in consultation with faculty advisor  
13 hours

5. Electives 9 hours

Total Quarter Hours Required 182



# PROGRAM IN MEDICAL TECHNOLOGY

**Director:** *M. Kangelos*, BL 303, Phone 275-2741

**Faculty:** *Morrison*

The medical technologist is involved in medical diagnosis, treatment, surveillance, management, research, and education. He/she uses highly sophisticated equipment such as electronic cell counters, automated analyzers, computers, and microscopes in the examination of body tissues and fluids.

The curriculum is designed to give students a thorough background in the physical and biological sciences; to develop the understanding, skills and abilities essential to assume leadership roles in management and education; to develop high level of proficiency in the clinical laboratory and to develop an awareness for continuing education needed for professional growth.

The degree in Medical Technology will be awarded upon completion of the University's didactic program and an affiliated clinical program approved by the Committee on Allied Health Education and Accreditation of the American Medical Association in collaboration with the National Accrediting Agency for Clinical Laboratory Sciences. Students make separate applications to the affiliated hospitals during their junior year.

Upon receiving the degree in Medical Technology, the graduate is eligible to take the certification examinations of the Board of Registry, American Society of Clinical Pathologists; National Certification Agency for Medical Laboratory Personnel and other certifying agencies and for a license in the State of Florida.

## BACHELOR OF SCIENCE: MEDICAL TECHNOLOGY

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special College requirements  
(See page 129)
3. Required Courses

BSC 1010C	Basic Biology	5 hours
MCB 2013C	General Microbiology	4 hours
MCB 3030C	Biology of Microorganisms	5 hours
MCB 3203C	Pathogenic Microbiology	4 hours
PCB 3233	Immunology	3 hours
PCB 3703C	Human Physiology	5 hours
CHM 2045, CHM 2046, CHM 2047	Chemistry Fundamentals I, II, and III	10 hours
CHM 2046L	Chemistry Fundamental Laboratory	1 hour
CHM 2120C	Analytical Fundamentals	2 hours
CHM 3121 C	Analytical Chemistry I	3 hours
CHM 3210	Organic Chemistry I	4 hours
BCH 3313	Clinical Biochemistry	4 hours

CHM 2205L	Organic Biochemistry Laboratory	1 hour
MAC 1132	College Algebra and Trigonometry	5 hours
STA 3023	Fundamentals of Probability and Statistics	4 hours
PHY 2050C, PHY 2052C	College Physics I and III	8 hours
CAP 3001	Computer Fundamentals for Business Applications I	3 hours
GEB 3004	Management	3 hours
ENC 3355	Professional Report Writing II	3 hours
MLS 3220	Techniques in Clinical Microscopy	3 hours
MLS 3265L	Techniques in Clinical Chemistry	4 hours
MLS 3305	Hematology	4 hours
MLS 3549	Immunohematology	4 hours
MLS 3549C	Coagulation, Immunopathology Fundamentals	4 hours
MLS 4830C, MLS 4831C, MLS 4832C, MLS 4833C	Clinical Practice I, II, III, and IV	16 hours
MLS 4405	Clinical Pathogenic Microbiology	4 hours
MLS 4625C, MLS 4630C	Advanced Clinical Chemistry I and II	7 hours
MLS 4550	Clinical Immunohematology	4 hours
MLS 4320C	Advanced Hematology and Coagulation	4 hours
MLS 4420C	Clinical Mycology	2 hours
MLS 4431C	Clinical Parasitology	3 hours
MLS 4511	Clinical Serology	3 hours
MLS 4213C	Body Fluids	2 hours
MLS 4910	Clinical Research Project	1 hour

4. Restricted electives none

5. Electives none

Total Quarter Hours Required 188

## NURSING PROGRAM

**Program Director:** L. Eldredge, BL 103, Phone: 275-2744

**Faculty:** Aloj, Gordon, McLean

The practice of professional nursing requires a minimum of a baccalaureate education; the nursing program at UCF leads to a BSN degree. The professional provides high level nursing care and in collaboration with other members of the health professions, is able to plan for and deliver comprehensive health care. The professional nurse functions as a nurse-generalist with the ability to assume primary care performance in clinical nursing; health maintenance and preventive teaching; as well as the ability to gradually assume the leadership role. The baccalaureate program provides the foundation for graduate study in nursing.

The objectives are to plan learning experiences that will stimulate the student to analytical thinking, self-directiveness and to be responsible for his/her own decisions and actions.



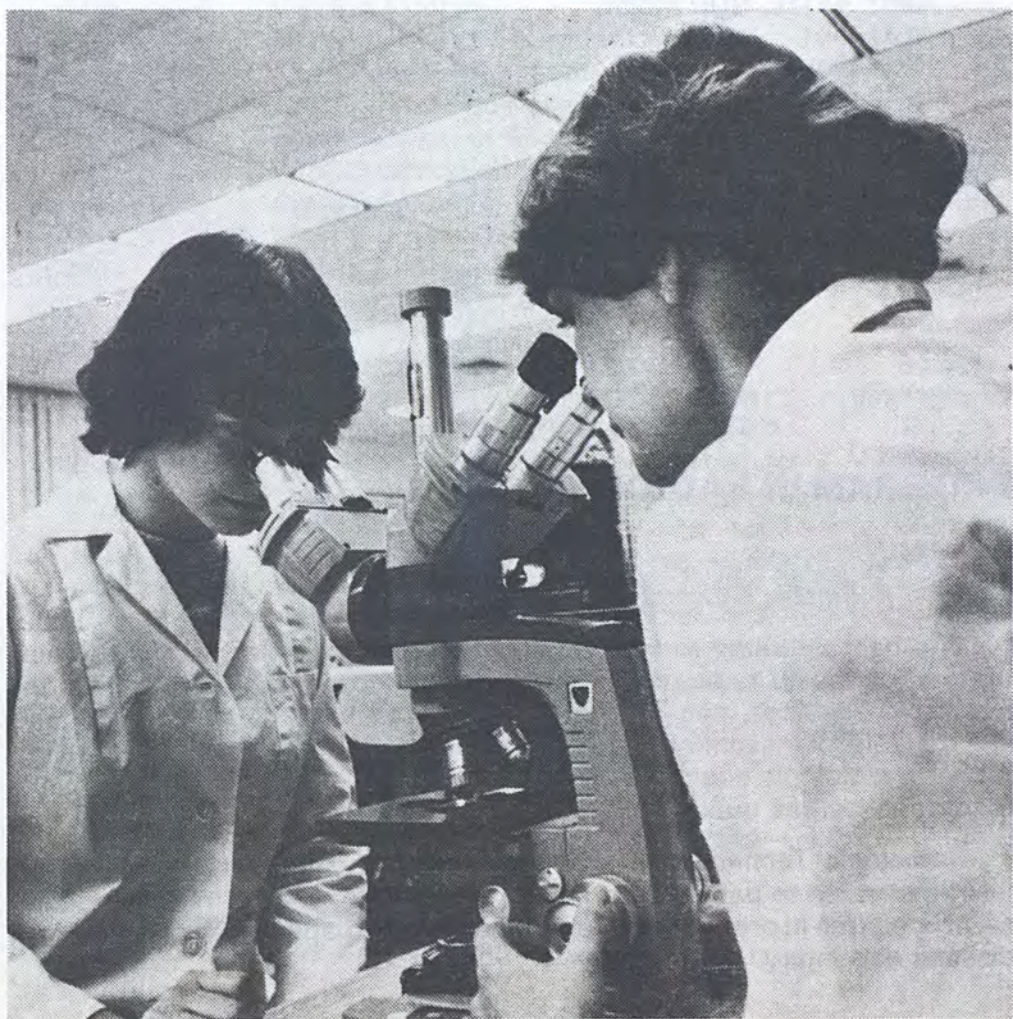
Acceptance to the registration at the University does not constitute admission to the upper division nursing major. *Separate application must be made directly to the nursing program's office* prior to March 1 of the year in which the prerequisites have been met, to be considered an applicant. A minimum grade point average of 2.5 and a minimum grade of a C in the major and prerequisite courses is required for admission and continuation in the upper division nursing major.

Special consideration and individual evaluation will be made for all R.N.'s. However, completion of the A.A. degree or the Environmental Studies Program is strongly recommended.

## **BACHELOR OF SCIENCE: NURSING**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college requirements  
(See pages 129 and 134)



### 3. Required Courses

MAC 1104	College Algebra	4 hours
STA 2014	Principles of Statistics	4 hours
BSC 1010C	Basic Biology	5 hours
MCB 2013C	General Microbiology	4 hours
ZOO 3733C	Human Anatomy	5 hours
CHM 1034	General Chemistry (Fundamentals)	5 hours
CHM 2200	General Chemistry (Organic)	4 hours
NUU 3105,	Nursing Seminar I, II, III, IV, V, and VI	
NUR 3619, 3135, 4208, 4412, NUU 4226		12 hours
NUR 3405C	Nursing Principles and Practices for Daily Living	6 hours
HUN 3	Human Nutrition	4 hours
NUR 3725C	Pathophysiology & Physical Assessment	
NUR 3726C	I and II	6 hours
NUR 3618C	Nursing During Alterations in Life Patterns	8 hours
NUR 3134, 4207, 4411, NUU 4225	Scientific Theories of Nursing I, II, III and IV	21 hours
NUR 3134L, 4207, 4411L, NUU 4225L	Nursing Intervention I, II, III and IV	22 hours
NUU 4301	Critical Inquiry	3 hours
NUR 4905	Nursing Independent Study	3 hours
NUR 4290C	Special Nursing Topics	1-3 hours

### 4. Restricted Electives

SOW 3104	Human Growth and Development	4 hours
PCB 3703 C	Human Physiology	5 hours
ENC 3355	Professional Report Writing II	3 hours
	To be selected in consultation with faculty advisor	12 hours

### 5. Electives

Total Quarter Hours Required 184

## PROGRAM IN RADIOLOGIC SCIENCES

**Director:** M. Jo Geren, SC 232, Phone 275-2747

**Faculty:** Bosmeny, Edwards, Graham

The baccalaureate radiologic science program is designed to provide the graduate with radiography skills, extended in-depth education in the radiologic sciences, and management and instructional skills. Graduates are capable of assuming leadership roles in the community as radiographers, radiologic educators, program directors and department administrators, as well as quality assurance coordinators.

Radiologic Technologists (radiographers) are integral members of a team dedicated to patient care. Their primary role is to perform the technical procedures in producing X-ray studies for the diagnosis and treatment of disease and injury.

The program is approved by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates are eligible to take the national certifying examination administered by the American Registry of Radiologic Technologists.

Application deadline is March 1 for acceptance into the upper division which begins with Summer quarter.

## **BACHELOR OF SCIENCE: RADIOLOGIC SCIENCES**

### **Degree Requirements**

1. University graduation requirements

(See pages 47 and 66)

2. Special college requirements

(See pages 129 and 136)

3. Required Courses

BSC 1010C	Basic Biology	5 hours
CAP 3001	Computer Fundamentals for Business Applications I	3 hours
ENC 3355	Professional Report Writing II	3 hours
MAC 1104	College Algebra	4 hours
PHY 2050C, PHY 2051C, PHY 2052C	College Physics I, II, and III	12 hours
RTE 2002	Fundamentals of Radiologic Technology	3 hours
RTE 3831	Clinical Education Orientation	2 hours
RTE 3806	Clinical Education II	6 hours
RTE 3816	Clinical Education III	6 hours
RTE 3826	Clinical Education IV	6 hours
RTE 3528C	Radiographic Procedures I	4 hours
RTE 3549	Radiographic Procedures II	4 hours
RTE 3566	Special Radiographic Procedures	3 hours
RTE 3412	Principles of Radiographic Exposure I	4 hours
RTE 3457C	Principles of Radiographic Exposure II	3 hours
HSC 4511	Fundamentals of Medicine I	3 hours
RTE 3156	Pathophysiology	3 hours
RTE 3684C	Radiologic Physics I	4 hours
RTE 3387	Radiologic Physics II	3 hours
RTE 4876	Clinical Education V	6 hours
RTE 4843	Clinical Education VI	4 hours
RTE 4853	Clinical Education VII	4 hours
RTE 4945	Clinical Education VIII	4 hours
RTE 4569	Imaging in Diagnostic Radiography	3 hours
RTE 4569L	Directed Clinical Study Imaging	2 hours
RTE 4205C	Quality Assurance Management	3 hours
RTE 4935	Radiologic Science Seminar	1 hour
STA 3023	Fundamentals of Probability & Statistics	4 hours
ZOO 3733C	Human Anatomy	5 hours
PCB 3703C	Human Physiology	5 hours

#### 4. Restricted Electives

##### Option I—Group A (all courses)

ACC 3003	Financial Accounting (or equivalent)	5 hours
MAN 3010	Management & Organizational Behavior	3 hours
RTE 4207	Quantitative Methods of Radiology Management	3 hours
RTE 4209	Radiological Administrative Practice	4 hours
RTE 4209L	Directed Clinical Study in Management	2 hours

##### Option II\*—Group A (all courses)

EDP 3004	Educational Psychology	4 hours
EVT 3062	Professional Role of the Vocational Teacher	4 hours
EVT 3063	Essential Teaching Skills in Vocational Education	4 hours
RTE 4253	Curriculum Planning in Radiologic Technology	3 hours
RTE 4256	Analysis of Instruction in Radiologic Technology	4 hours
RTE 4256L	Directed Clinical Study in Education *Required for Florida Teaching Certification	2 hours

#### 5. Electives

Total Quarter Hours Required

1 hour  
188

## PROGRAM IN RESPIRATORY THERAPY

**Director:** *J. Stephen Lytle, SC 226, Phone 275-2748*

**Faculty:** *D. Johnson, Worrell*

**Medical Director:** *Robert Snyder*

Respiratory Therapy is one of the newest and fastest growing of the health professions. The field over the past thirty years from the days of oxygen tents and iron lungs to the high level technology that modern respiratory therapists see today. Today's respiratory therapist provides a variety of services within the hospital. Emergency resuscitation using external heart massage and artificial respiration is one of the therapist's most important functions. The therapist serves as an important medical team member in such emergencies as heart attacks, near-drownings, shock, and automobile accidents. The therapist may also perform diagnostic pulmonary function tests and arterial blood gas analysis to aid the physician in his diagnosis of respiratory disease. Oxygen administration, the delivery of aerosol medications, humidity therapy, administration of positive pressure breathing, and rehabilitation of patients with chronic respiratory diseases are also among the duties of the respiratory therapist. One of the therapist's most challenging roles involves working with the critically ill patient. With the advent of sophisticated medical research, surgical techniques, and technology the need for qualified respiratory therapists has grown tremendously. Therapists are also actively involved in the care of premature infants with respiratory diseases.

Following admission to the upper division, students in the Respiratory

Therapy program will follow the curriculum listed below. After completing the professional core requirements the student will have options for professional specialization as outlined in the curriculum. Students admitted to the program who have an Associate of Science degree in Respiratory Therapy will have their curriculum planned on an individual basis. Respiratory Therapy course credit from other institutions will be applied toward completion of the program requirements only upon successful completion of credit by examination.

The Respiratory Therapy Program is accredited by the American Medical Association in collaboration with the Joint Review Committee for Respiratory Therapy Education.

## **BACHELOR OF SCIENCE: RESPIRATORY THERAPY**

### **Degree Requirements**

1. University graduation requirements

(See pages 47 and 66)

2. Special college requirements

(See pages 129 and 138)

3. Required courses

BSC 1010C	Basic Biology	5 hours
MCB 2013C	General Microbiology	4 hours
ZOO 3722C	Human Anatomy	5 hours
PCB 3703C	Human Physiology	5 hours
CHM 1034	General Chemistry	5 hours
CHM 2046L	Chemistry Fundamentals Laboratory	1 hour
CHM 2200	Introductory Organic Chemistry	3 hours
BCH 3313	Clinical Biochemistry	4 hours
PHY 3050C	College Physics I, II, III	12 hours
PHY 2051C		
PHY 2052C		
MAC 1104	College Algebra	4 hours
STA 3023	Fundamentals of Probability and Statistics	4 hours
CAP 3001	Computer Fundamentals for Business Applications I	3 hours
MAN 3006	Management and Organization Behavior	3 hours
EVT 4006	Philosophy and Principles of Technical Education	4 hours
ENC 3355	Professional Report Writing II	3 hours
HSC 4511	Fundamentals of Medicine I	3 hours
RET 3031	Introduction to Clinical Practice	1 hour
RET 3026	Introduction to Respiratory Equipment	3 hours
RET 3027	Respiratory Equipment Laboratory	1 hour
APB 3263	Pulmonary Physiology	3 hours
APB 3263L	Pulmonary Physiology Laboratory	1 hour
RET 3264	Respiratory Equipment Function	3 hours
RET 3265L	Respiratory Equipment Function Laboratory	1 hour
RET 3442	Cardiopulmonary Instrumentation	3 hours

RET 3244	Life Support Systems	3 hours
RET 3245L	Life Support Systems Laboratory	1 hour
APB 3600	Introduction to Pharmacology	3 hours
RET 3483	Assessment of Respiratory Diseases	3 hours
RET 4414	Pulmonary Function Studies	3 hours
RET 4415L	Pulmonary Function Laboratory	1 hour
APB 4610, APB 4650	Medical Pharmacology I and II	6 hours
RET 4435	Chest Medicine	3 hours
RET 4034	Problems in Patient Management	2 hours
RET 4714	Respiratory Pediatrics	3 hours
RET 3874	Clinical Practice I	5 hours
RET 3875	Clinical Practice II	5 hours
RET 4876	Clinical Practice III	5 hours
RET 4877	Clinical Practice IV	5 hours
RET 4878	Clinical Practice V	5 hours

4. Restricted Electives for Professional Specialization.

Students should choose a minimum of 6 quarter hours from those courses listed below or others approved by the program director.

RET 4284	Cardiopulmonary Diagnostics	3 hours
RET 4285L	Cardiopulmonary Diagnostics Laboratory	1 hour
RET 4616	Cardiopulmonary Services	3 hours
EVT 4380	Methods of Teaching Technical Vocational Subjects	5 hours
MCB 3203C	Pathogenic Microbiology	4 hours
PCB 3233	Immunology	3 hours
RET 4262	Neonatal Mechanical Ventilation	3 hours
RET 4104	Respiratory Therapy Educational Systems	2 hours

5. Electives

Total Quarter Hours Required

None

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# COLLEGE OF HUMANITIES & FINE ARTS

## UNDERGRADUATE PROGRAMS

- Art (BA)
- Art (BFA)
- English (BA)
- Foreign Language Combination (BA)
- French (BA)
- History (BA)
- Humanities (BA)
- Humanities and Fine Arts (BA)
- Music (BA)
- Music Education (BA)
- Philosophy (BA)
- Spanish (BA)
- Theatre (BA)

## GRADUATE PROGRAMS

- English (MA)

## COLLEGE OF HUMANITIES AND FINE ARTS

**Dean:** *C. Micarelli*, FA 509D, Phone 275-2251

**Associate Dean:** *H. Smith*, FA 509B, Phone 275-2600

The College of Humanities and Fine Arts endeavors, along with the other six colleges of the University, fulfill the general aims of the University of Central Florida. This College has the responsibility of preparing specialists in the principal disciplines of the humanities and the fine arts. The following major study programs are presently offered: art, English, foreign languages (French, Spanish), history, humanities, music, philosophy and theatre. Any one of these majors may be combined with a core of Business Administration courses designed to prepare a student for administrative work within his major. This Humanities and Fine Arts-Administration program is described below. Besides these majors, courses are offered in film, German, Italian, religion and Russian. In addition to preparing specialists in the various disciplines of the College, the College of Humanities and Fine Arts cooperates with the other six colleges of the University in the Environmental Studies Program in offering electives suitable to all students.

### PRE-LAW

The College of Humanities and Fine Arts also offers sound preparation for subsequent study in Law. The quality of undergraduate education for the legal profession, according to the Association of American Law Schools,<sup>1</sup> is grounded in three basic skills and insights: comprehension and expression in words, critical understanding of the human institutions and values with which the law deals, and creative power in thinking.

In defining a proper prelaw curriculum, the Association stresses breadth

and flexibility in undergraduate prelaw education, and cites specifically History, Philosophy and English, among others, as valid academic preparation.

The College of Humanities and Fine Arts, in its seven departments, provides programs intended to develop the skills and insights fundamental to the later attainment of legal competence. History, Philosophy, English, and the major in Humanities and Fine Arts seem particularly appropriate programs of study for the student considering law school. See additional information in History, English, and Humanities, Philosophy and Religion. Each department has an advisor to counsel pre-law students regarding core courses and recommended electives.

### **INTERDISCIPLINARY STUDIES**

The College of Humanities and Fine Arts offers a major in Humanities and Fine Arts for the student who desires a broad exposure to courses in the College without the need to specialize in one department. It is a flexible program whose purpose is a liberal education and general background in the Humanities and Fine Arts. The course requirements for the College Major are 30 upper division hours in one department and 36 upper division hours in two other departments with not less than 12 in any one. A typical program follows:

Basic Program (basic ESP and electives or AA Degree)	90 hours
Main area	30 hours
Secondary area	24 hours
Secondary area	12 hours
Upper Division ESP	15 hours
Electives	9 hours
Total	180 hours

Contact Dr. Harry Smith (FA 509B, Phone 275-2600) for information on this major.

### **HFA-ADMINISTRATION PROGRAM**

The College of Humanities and Fine Arts in conjunction with the College of Business Administration offers a program which combines a major in one of the areas of the College of Humanities and Fine Arts with a number of selected courses in the College of Business Administration. This combination of concentrations will prepare the student to assume an administrative position in one of the fields of the Humanities and Fine Arts and will also afford the opportunity of going on for a Master's Degree in Business. The required administration courses are in addition to the requirements for a major in one of the college's departments. (Contact Person: E. Hotaling, FA 140, Phone 275-2867).

### **PROFICIENCY REQUIREMENT**

All students, both freshmen and transfer students, who enroll for the first time in the College of Humanities and Fine Arts during or after the Fall Quarter of 1976 are required to pass an English writing proficiency examination in order to graduate. This examination is given every quarter and



should be completed by transfer students before the last 45 quarter hours of course work are begun and by four-year students during their sophomore year. Students must register with the English Department by the end of the second week of classes during the quarter in which they plan to take the examination. Details of the nature of the test, time of testing, return of corrected tests etc., may be obtained in the English Department.

A student enrolled in the College of Humanities and Fine Arts must fulfill all of the University requirements and the requirements set by the department of his major.

To be certified for graduation, a student must achieve a "C" (2.0 grade point average) in courses of his major field.

## MINOR

The College of Humanities and Fine Arts and the College of Social Sciences jointly offer a minor in Afro-American Studies consisting of a minimum of 24 quarter hours. Required courses: AMH 3570, ENG 4574, LIT 4324, SOC 3720. The student should be advised by the Program advisor prior to registration.

<sup>1</sup>Association of American Law Schools and the Law School Admission Council, *Prelaw Handbook: Official Law School Guide, 1973-74.*



## DEPARTMENT OF ART

**Acting Chairman:** C. Wellman, FA 525, Phone 275-2676

**Faculty:** Chavda, Eyfells, Guadnek, Lotz, Miyamoto, Skoglund

The curriculum in Art provides thorough grounding in visual expression and an opportunity for specialized professional preparation in art history and in the studio areas of drawing, painting, printmaking, photography, graphic design, film, sculpture, and ceramics, and combination specializations in drawing-printmaking, sculpture-ceramics and photography-printmaking.

The Department of Art offers programs leading toward both the Bachelor of Arts (B.A.) degree and the Bachelor of Fine Arts (B.F.A.) degree.

The University reserves the right to hold for exhibition purposes work done in classes.

### MINOR

The Department of Art offers a minor consisting of a minimum of 33 quarter hours.

Required courses: ARH 2050, 2051, 2052; ART 2201, 2202, 2203, 2300; 12 quarter hours of art studio specialization at the 3000-4000 level. The minor in Art can be taken in any of the existing studio concentrations except in Art History.

### BACHELOR OF ARTS: ART

#### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See page 141)
3. Required Courses  
Varies with Specialization
4. Restricted Electives  
Varies with Specialization
5. Electives

To be selected primarily from upper level courses outside the Department, with the approval of the student's advisor.

Total Quarter Hours Required 180

### AREAS OF SPECIALIZATION

#### 1. Art History

##### Required Courses

ARH 2050, 2051, 2052 History of Art I, II, III 9 hours

##### Restricted Electives

##### a) Any two:

ART 2201C, 2202C, 2203 C Design Fundamentals I, II, III 6 hours

ART 3630C or RTV 3310

##### b) Any one:

ARH 4020 Developing Visual Creativity 4 hours

PHI 3800      Aesthetics  
THE 4072      Principles of Motion Picture Art

- c) Studio Courses  
Any two studio courses — 6 hours
- Specialization  
3000 and 4000 level courses in Art History 21 hours
- Language and comprehensive Examination  
A satisfactory grade in a comprehensive art history examination and a reading knowledge of one foreign language are required.  
Total Quarter Hours in Art courses or approved cognates—46 hours

## 2. Art (Studio Areas)

### Required Courses

ART 2201C,  
ART 2202C      Design Fundamentals I, II 6 hours  
ART 2300,      Drawing Fundamentals I, II, Intermed.  
2301C, 3330C      Draw I 9 hours  
ARH 2050,      History of Art I, II, III 9 hours  
ARH 2051, 2052

### Restricted Electives

- a) Either  
ART 2203C      Design Fundamentals III or 3 hours  
ART 3630C      Film Design 3 hours
- b) Any one: 4 hours  
ARH 4020      Developing Visual Creativity  
PHI 3800      Aesthetics  
THE 4072      Principles of Motion Picture Art
- c) Art History  
Any 3000 and 4000 level Art History Course 3 hours
- d) Upper Division  
Electives in Art 11 hours  
Specialization  
3000 and 4000 level courses in one Studio Area, not to include any required courses stated above (see Areas of Studio Specialization below) 15 hours

### Portfolio Requirement

For the B. A. degree a selective portfolio of work, representing the student's accomplishment in the major Studio Specialization and acceptable to the Studio Faculty, will be submitted during the final Senior quarter.

Total Quarter Hours in Art Courses or approved cognates—60 hours

Areas of Studio Specialization: Ceramics, Drawing, Film, Graphic Design, Painting, Photography, Printmaking, Sculpture.

## BACHELOR OF FINE ARTS: ART

The B.F.A. degree is recommended for those students who successfully petition for admission to ART 4965 and who intend to pursue work in the Arts at the graduate level.

### Degree Requirements

1. University graduation requirements

(See pages 47 and 66)

2. Special college and/or department requirements

(See page 141)

3. Required Courses

ARH 2050,, 2051, 2052 History of Art I, II, III	9 hours
ART 2201C, 2202C, 2203C Design Fundamentals I, II, III	9 hours
ART 3630C Film Design	3 hours
ART 2300C, Drawing Fundamentals I, II	6 hours
ART 2301C	
ART 3330C, 3331C, 3332C Intermediate Drawing I, II, III	9 hours
ART 4965 Senior Studio and Exhibition*	3 hours

4. Restricted Electives

a) ART History and Theory

Any 3000 and 4000 level Art History and Theory Courses

14-15 hours

b) Any one:

4 hours

PHI 3800 Aesthetics

THE 4072 Principles of Motion Picture Art

c) Upper Division Electives in Art

11-12 hours

d) Specialization

3000 and 4000 level courses\*\* in one Studio Area, not to include any required courses listed above (see Areas of Studio Specialization below)

21 hours

5. Electives

To be selected primarily from upper level courses outside the Department, with the approval of student's advisor.

Total Quarter Hours in Art courses or approved cognates—90 hours

Total Quarter Hours Required—180 hours

Areas of Studio Specialization: Drawing, Graphic Design, Painting, Photography, Printmaking, Sculpture, Drawing and Printmaking combination, Sculpture and Ceramics combination, and Photography and Printmaking combination.

\*The procedure for admission to ART 4965 (Senior Studio and Exhibition) requires a formal application and portfolio submission by the student to the

Department Chairman and the Studio Faculty, no earlier than the first quarter of the student's senior year (upon completion of 135 quarter hours). After successfully petitioning for admission to ART 4965, the student must complete no less than 45 quarter hours at UCF, of which at least 20 quarter hours must be in ART courses. A grade of C or better in ART 4965 is required for graduation.

\*\*The combination specializations in Drawing and Printmaking, Sculpture and Ceramics, and Photography and Printmaking require 15 quarter hours of upper division work in each half of the combinations: a total of 30 quarter hours for the combination.



## **DEPARTMENT OF ENGLISH**

**Chairman:** *R. Grove*, FA 432, Phone 275-2212

**Faculty:** *Adicks, Barnes, Browne, Combs (Emeritus), Donnelly, Hartman, McCown, Omans, Price, Schiffhorst, Sommer, Umphrey, Wyatt*

The UCF English Department is responsible for the effective teaching of literature in English, including World Literature, as well as expository and creative writing. It serves not only the special needs of those students concentrating in literature or in writing but also the broad needs of the University by offering courses in expository writing and literature to students from other departments.

The Department of English offers a pre-law program which stresses skill in writing, language, and literature. This program offers training that will increase the student's chance of law school entry and effective performance while in law school. For further information please see the Department Chairman.

### **MINOR**

The Department of English offers a minor consisting of a minimum of 24 quarter hours.

Required courses: 12 quarter hours selected from among the following: ENL 2011, ENL 2018, ENL 2025, AML 3101, AML 3107, AML 3111, ENL 3028. In addition the student must complete 12 quarter hours of other English courses that are selected in consultation with an advisor from the Department of English.

### **BACHELOR OF ARTS: ENGLISH**

#### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See page 141)
3. Required Courses  
(See Literature Concentration, Writing Concentration or Linguistic Concentration below)
4. Restricted Electives  
(See Literature Concentration, Writing Concentration or Linguistic Concentration below)
5. Electives  
To be selected primarily from upper level courses with the approval of the student's advisor.
6. Foreign Language Requirement  
Proficiency in one modern foreign language must be shown in one of the following ways: passing a proficiency exam; presenting four years of high school credit in one language; completing 24 quarter hours in one language; completing 12 quarter hours in one language (in which case an additional 12 hours of upper-level English courses are required); completing 36 quarter hours in one language (in which case

there is a 12 hours reduction in required upper division English electives)

Total Quarter Hours Required 180

## AREA OF SPECIALIZATION

1. Literature. The following courses are required for this specialization:

LIT 2020	Literary Analysis	3 hours
ENL 2011	Survey of English Literature to 1625	3 hours
ENL 2018	Survey of English Literature 1626-1798	3 hours
ENL 2025	Survey of English Literature 1798-1914	3 hours
AML 3101	Survey of American Literature 1588-1865	3 hours
AML 3107	Survey of American Literature 1865-1914	3 hours
AML 3111	Survey of American Literature Since 1914	3 hours
ENL 3028	Survey of British Literature Since 1914	3 hours

Choose two from:

ENL 4110	Chaucer	3 hours
ENL 4131	Shakespeare's Studies	3 hours
ENL 4120	Milton	3 hours

Required:

4000 Level Sequence Courses	9 hours
Upper-division electives in English	12 hours

2. Writing. Students desiring to specialize in the area should meet the requirements:

LIT 2020	Literary Analysis	3 hours
Any six of:		
LIT 3110	Literature of Modern Man	4 hours
ENL 2011	Survey of English Literature to 1625	3 hours
ENL 2018	Survey of English Literature 1626-1798	3 hours
ENL 2025	Survey of English Literature 1798-1914	3 hours
AML 3101	Survey of American Literature 1588-1865	3 hours
AML 3107	Survey of American Literature 1865-1914	3 hours
AML 3111	Survey of American Literature Since 1914	3 hours
ENL 3028	Survey of British Literature Since 1914	3 hours
ENG 3716	Exploring Poetry	3 hours

Any two of the linguistics courses:

LIN 3010	Principles of Linguistics	3 hours
ENG 4550	Modern English Grammar	4 hours
ENG 4512	History of the English Language	3 hours
LIN 4304	Transformational Grammar	3 hours
LIN 4474	Language and Meaning	3 hours
ENG 4574	Black English	3 hours

Must include: Upper-division Literature 3-4 hours

Any four of:

CRW 2020	Principles of Creative Writing	3 hours
CRW 2321	Introduction to Verse Writing	3 hours

CRW 2221	Introduction to Fiction Writing	3 hours
CRW 3132	Creative Writing Workshop I	3 hours
CRW 3142	Creative Writing Workshop II	3 hours
CRW 3152	Creative Writing Workshop III	3 hours
ENG 3714	Structure of Verse	3 hours
CRW 3530	Writing for children	3 hours
ENC 3412	Writing Skills	4 hours
ENC 3612	Magazine Writing I	4 hours

Any three of:

CRW 4940	Writing Practicum I	3 hours
CRW 4941	Writing Practicum II	3 hours
CRW 4942	Writing Practicum III	3 hours
CRW 4906	Independent Study	3 hours

Upper-division electives in English 15 hours





3. Linguistics. This concentration offers intensive work in the field of linguistics, combined with a background in English literature and writing. It requires 48 hours of course work in English beyond the Freshman English courses. The specific requirements are as follows:

Linguistics (15 quarter hours)

LIN 3010	Principles of Linguistics	3 hours
ENG 4550	Modern English Grammar	4 hours
ENG 4512	History of the English Language	3 hours
LIN 4304	Transformational Grammar	3 hours
LIN 4474	Language and Meaning	3 hours

Literature (18 quarter hours to be selected from the following)

LIT 2020	Literary Analysis	3 hours
ENL 2011	Survey of English Literature to 1625	3 hours
ENL 2018	Survey of English Literature, 1626-1798	3 hours
ENL 2025	Survey of English Literature, 1798-1914	3 hours
AML 3101	Survey of American Literature, 1588-1865	3 hours
AML 3107	Survey of American Literature, 1865-1914	3 hours
AML 3111	Survey of American Literature Since 1914	3 hours
ENL 3028	Survey of British Literature Since 1914	3 hours
ENG 3220	Continental European Fiction Since 1900	3 hours
LIT 3240	World Literature I	4 hours
LIT 3257	World Literature II	4 hours

Upper-division English Electives (15 hours to be selected by the student)

Foreign Language (one of the following)

Plan A. Two years (24 quarter hours)

Plan B. One year (12 quarter hours) plus 12 quarter hours of English electives

Plan C. Three years (36 quarter hours) with a reduction of 12 quarter hours in the required upper division English electives.

## DEPARTMENT OF FOREIGN LANGUAGES

**Chairman:** A. Cervone, FA 436, Phone 275-2641

**Faculty:** Barsch, DiPierro, Micarelli, Payas

Language studies in the College of Humanities and Fine Arts provide instruction in French, German, Italian, Latin, Russian and Spanish, with majors in French and Spanish. These programs are designed to meet the needs of students who desire competency in a language and expanded understanding of a foreign culture and literature. Students enrolled in 1000, 2000 and certain 3000 level courses are required to attend the language laboratory for at least one hour a week.

Students wishing to major in a foreign language must meet all the requirements for graduation as set forth by the University, the College of Humanities and Fine Arts, and by the Department of Foreign Languages. The student majoring in foreign languages must complete 44 quarter hours in the chosen language beyond the 1000 and 2000 level. Among these 44 quarter hours the student must take courses numbered 3240, 3420, 3100,

3101 and 3102. Students interested in a combined major must take courses numbered 3240, 3420, 3100, 3101, and 3102 in both languages, plus an additional 20 hours in the first language and an additional 8 hours in the second language for a total of 68 quarter hours.

Normal placement is as follows: Four years of one high school language would place the student in the first quarter of the third year, three years, in the second quarter of the second year; two years in the first quarter of the second year; one year in the second quarter of the first year.

A native speaker must substitute a literature course for the conversation course (3240). Moreover, in cases where the native speaker has received advanced education abroad, he will not be permitted to take the advanced composition course (3420) for the fulfillment of his major requirements but must substitute another literature course chosen with his advisor.

Language Credit by Examination will not be given in courses lower in level than those in which students are presently enrolled. Native speakers will be allowed Credit by Examination only in literature courses.

## **MINORS**

The Department of Foreign Languages offers a minor consisting of 24 quarter hours in French, German, or Spanish.

Required courses: 24 quarter hours above the 2000 level in one language including the courses numbered 3240 and 3420.

## **BACHELOR OF ARTS: FRENCH OR SPANISH**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 141 and 151)
3. Required Courses for French or Spanish Major

1100	Elementary Language & Civilization	4 hours
1101	Elementary Language & Civilization	4 hours
1102	Elementary Language & Civilization	4 hours
2200	Intermediate Language & Civilization	4 hours
2201	Intermediate Language & Civilization	4 hours
2202	Intermediate Language & Civilization	4 hours
3240	Conversation	4 hours
3420	Composition	4 hours
3100	Survey of Literature I	4 hours
3101	Survey of Literature II	4 hours
3102	Survey of Literature III	4 hours

#### 4. Restricted Electives

Students are required to choose two of the following:

LIN 4906	Articulatory Phonetics	3-5 hours
ENG 4550	Modern English Grammar	4 hours
LIN 3010	Principles of Linguistics	3 hours
	Other restricted electives	24 hours

#### 5. Electives

Total Quarter Hours Required 180

### **BACHELOR OF ARTS: FOREIGN LANGUAGE COMBINATION**

#### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 60)
2. Special college and/or department requirements  
(See pages 141 and 151)
3. Required Courses for Combined Major in Foreign Languages

3240	Conversation	4 hours
3420	Composition	4 hours
3100	Survey of Literature I	4 hours
3101	Survey of Literature II	4 hours
3102	Survey of Literature III	4 hours

#### 4. Restricted Electives

- 20 credits in first language
- 8 credits in second language

Students are required to choose two of the following:

LIN 4906	Articulatory Phonetics	3-5 hours
ENG 4550	Modern English Grammar	4 hours
LIN 3010	Principles of Linguistics	3 hours
	Other restricted electives	24 hours

#### 5. Electives

Total Quarter Hours Required 180

#### **Summer Study Abroad**

The Department of Foreign Languages has been offering a Summer Study program in Spain since 1972 and one in Italy since 1975. These programs are approved by the Board of Regents and are expected to be offered in 1979. Credit bearing courses are available in these programs in language (all levels), art, and civilization of Spain and Italy. These programs are open to all students of the State University System of Florida.

#### **AREAS OF SPECIALIZATION**

1. Russian Area Studies. The University of Central Florida offers an academic program in Russian Area Studies. Five departments in the University have cooperated to provide this unique study program so that the student may more fully enjoy the varied offerings of the University. Upon successful completion of courses, the student will receive a certificate of participation.

## DEPARTMENT OF HISTORY

**Chairman:** *J. Shofner*, Bldg. FA 551-B, Phone 275-2224

**Faculty:** *Crepeau, Evans, Fetscher, Greenhaw, Kallina, Pauley, Wehr*

Students majoring in history must complete a minimum of 48 hours in history courses. At least eight hours must be selected from each of three different geographical areas, such as: the United States, Europe, Asia or Latin America.

History majors are encouraged but not required to develop a proficiency in a foreign language.

History majors who are interested in a pre-law program should work closely with their advisors in selecting major courses and electives which will best prepare them for law school. These students should use their electives for additional courses in history as well as English, speech and philosophy. Such a course of study will prepare them for success in law school and will concomitantly provide a broad liberal education.

### MINOR

The Department of History offers a minor consisting of a minimum of 24 quarter hours.

Required courses: 24 quarter hours of history, twelve of which must be at the 3000-4000 level. Specific courses must be selected in conference with a departmental advisor.



## **BACHELOR OF ARTS: HISTORY**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 141 and 154)
3. Required courses  
None
4. Restricted Electives  
None
5. Electives  
To be selected with approval of the student's advisor.

Total Quarter Hours Required

180

### **AREA OF SPECIALIZATION**

1. Russian Area Studies. The history department participates in the Russian Area Program. For information consult with Professor Evans.

## **DEPARTMENT OF HUMANITIES, PHILOSOPHY AND RELIGION**

**Chairman:** *R. Flick*, FA 415, Phone 275-2273

**Faculty:** *Jones, Kassim, Levensohn, Riley, Riser*

The Department offers:

1. An interdepartmental humanities major, with three choices of specialization.
2. A philosophy major, with an optional specialization in religion.
3. Minors in humanities, philosophy or religion.
4. A variety of courses in humanities, philosophy and religion for students in other areas who do not seek a major or minor.
5. A pre-law program.

The humanities major, as well as the philosophy major, provides a rich background in the liberal arts. Both are well suited for those students who see the college experience as a means toward fulfillment and preparation for living, and not merely as preparation for earning a living. Yet a liberal education, as provided by these majors, is still considered excellent preparation, by many employers, for careers in personnel management, communications, planning, administration, labor relations, public relations, writing, editing, politics, and civil service.

Both majors may also lead to careers in teaching. One who completes the humanities major and the necessary education courses may be certified to teach humanities in high school. With the addition of a Master's Degree he may qualify to teach in one of the many community colleges. Since philosophy is taught primarily in college, the student who plans to

teach it will need to obtain an advanced degree. He will therefore be well advised to include at least a year of foreign language in his program.

For students who are interested in preparing for a career in law, the Department has developed a program within the philosophy major. Please inquire at the departmental office (FA 409, Phone 275-2273).

## MINORS

The Department of Humanities, Philosophy and Religion offers minors consisting of 24-28 quarter hours. For specific requirements, students should see an advisor in Humanities, Philosophy, or Religion.

## BACHELOR OF ARTS: HUMANITIES

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See page 141)

The department requires one year of a foreign language or equivalent.

3. Required Courses (all concentrations)

HUM 4301	The Classical Ideal in the Arts	4 hours
HUM 4302	The Romantic Ideal in the Arts	4 hours
HUM 4303	The Spiritual Ideal in the Arts	4 hours

4. Restricted Electives  
(Choose one of the three specializations)

5. Electives

May be used to obtain a second major, to complete requirements for teacher certification in Humanities in the College of Education, or to strengthen the major with cognate courses.

Total Quarter Hours Required 180

## AREAS OF SPECIALIZATION

1. IDEAS (See advisor for specific courses.)
  - a. Two courses in world or English literature 6-8 hours
  - b. Two courses in Greek, Roman or European history 8 hours
  - c. Two courses in history of philosophy 8 hours
  - d. One course in Judaism, Christianity or world religions 4 hours
  - e. Any course in literature, history, philosophy or religion 3-4 hours
  - f. One course in art history or appreciation 3-4 hours
  - g. One course in music appreciation 3-4 hours
  - h. One course in theatre history 3-4 hours
2. THE ARTS (See advisor for specific courses.)
  - a. One course in world literature 4 hours
  - b. One course in history 4 hours
  - c. One course in history of philosophy 4 hours
  - d. One course in religion 4 hours
  - e. Two courses in art 6 hours

- f. Two courses in creative writing 6 hours
  - g. Courses in music 6 hours
  - h. Two courses in theatre 6 hours
3. WORLD CULTURES (See advisor for specific courses.)
- a. Two courses in world or European literature 8 hours
  - b. Two courses in Russian or Far Eastern history 8 hours
  - c. Two courses in non-Western religion 8 hours
  - d. One course in philosophy 4 hours
  - e. Two courses in non-Western art 6 hours
  - f. One course in music appreciation 3-4 hours
  - g. One course in drama development 4 hours

## **BACHELOR OF ARTS: PHILOSOPHY**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
  2. Special college and/or department requirements  
(See pages 141 and 155)
  3. Required Courses
 

PHI 1100	Critical Thinking	4 hours
PHI 2130	Formal Logic	4 hours
PHI 2010	Introduction to Philosophy	4 hours
PHH 3100	Ancient Philosophy	4 hours
PHH 3430	Med. & Early Mod. Phil.	4 hours
PHH 3440	Late Modern Philosophy	4 hours
PHP 3786	Existentialism	4 hours
PHH 3600	Prob. in Contemp. Phil.	4 hours
PHI 3600	Ethics	4 hours
  4. Restricted Electives
 

Three elective courses in philosophy or religion	12 hours
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  5. Electives  
To be selected with the approval of the student's advisor. May be used to obtain a second major.
- Total Quarter Hours Required 180

### **AREA OF SPECIALIZATION**

#### **1. RELIGION**

Students may meet requirements for the Bachelor of Arts in Philosophy by completing the following alternate required courses and restricted electives.

##### **a. Required courses**

PHI 1100	Critical Thinking	4 hours
PHI 2010	Intro. to Philosophy	4 hours
PHH 3100	Ancient Philosophy	4 hours
PHI 3600	Ethics	4 hours
PHI 4700	Philosophy of Religion	4 hours
REL 3203	Hebrew and Christ. Heritage	4 hours
REL 3314	Religions of China & Japan	4 hours

REL 3342	Hinduism	4 hours
REL 3353	Islam	4 hours

- b. Restricted electives  
 Three elective courses in religion 12 hours

## DEPARTMENT OF MUSIC

**Chairman:** G. Wolf, FA 105A, Phone 275-2867

**Faculty:** Eubank, Hotaling, Keltner, Norton, Palmer, Stenberg, Szabo, Walker, Welker, Whisler, Wolf, Wrancher

**Part-Time Faculty:** Ault, Benton, Butsch, Curtis, Eshenaur, Farina, Hall, Hinkle, Jones, Lesko, Mascaro, Micarelli, Raley, Riggins, Schultz, Wohlwender

The Department of Music offers a Bachelor of Arts with options in Applied Music, Piano Pedagogy, Instrumental Music Education, Vocal/Choral Music Education, Piano/Vocal Music Education, and Elementary School Music Education.

### SPECIAL MUSIC MAJOR ENTRANCE REQUIREMENTS

In order to be accepted as a music major, the following entrance requirements must be met:

- a. Audition. Each student must demonstrate an advanced level of proficiency in the major area of performance as evidenced by his/her ability to perform compositions representing a variety of musical periods. Memorization is required for pianists and vocalists. Accompanists for vocalists will be furnished only upon request prior to the audition. Each candidate must bring music for the compositions he intends to perform. The college will provide large instruments such as the tuba, string bass, or timpani for these auditions. All smaller instruments must be brought to the University.

The audition will serve as a placement examination for accepted candidates.

- b. Piano and sight-singing placement examination.  
 c. Personal Interview.

Music History and Music Theory Comprehensive Examinations will be given during the Junior year. At the end of the first quarter there will be an ear-training and sight-singing examination; at the end of the second quarter there will be a part-writing and visual analysis examination; at the end of the third quarter there will be a music history examination.

### K-12 Certification

The Music Education programs are approved by the Florida State Department of Education. Students who wish to be certified to teach in elementary and secondary schools should consider a major in Music Education. Courses leading to teacher certification are offered cooperatively with the College of Education. Those students who satisfactorily complete the Music Education program will be eligible for a Florida Rank III Teacher's Certificate. The certificate is valid for five years and is renewable. A recipro-



cal certification arrangement is in effect with approximately 30 other states, with reciprocal certification pending in other states. In addition, a Master of Education degree in Music Education is offered in cooperation with the College of Education.

### **POLICY REGARDING MAJOR ENSEMBLE PARTICIPATION**

1. Every music or music education major carrying an academic credit load of eight (8) or more hours must participate in a credit-bearing major ensemble in his applied major area.

Major ensembles acceptable in fulfillment of this requirement are chorus, symphony orchestra, and symphonic band. Students concentrating in piano, guitar and organ must take University Choir as their major ensemble, the stipulation that this participation be "in his applied major area" not being applicable.

2. Music majors must earn twelve (12) quarter hours of major ensemble credit to graduate. Music education majors must similarly earn eleven (11) hours in their degree program. No more than one major ensemble may be used to satisfy this requirement in any given quarter, although a student may participate in more than one ensemble if he so desires.
3. Music education majors in wind, brass, strings, and percussion are required to participate in the University Chorus for a minimum of two (2) quarters during their degree program. The minor ensemble requirement will be reduced by two (2) quarter hours in order to accommodate this requirement. Vocal music education majors may elect to substitute two (2) quarter hours of band or orchestra for two (2) hours of the minor ensemble requirement provided they have sufficient facility on an appropriate instrument.
4. Assignment to a major ensemble will be made by the ensemble director(s).



## **POLICY REGARDING MINOR ENSEMBLE PARTICIPATION**

1. Music majors must earn twelve (12) quarter hours of minor ensemble credit during at least ten (10) separate quarters to graduate. Music education majors must earn six (6) quarter hours of minor ensemble credit during at least five (5) separate quarters to graduate.
2. The following ensembles will be considered minor ensembles: Brass Ensembles, Percussion Ensembles, Piano Ensembles, String Ensembles, Vocal Ensembles, Woodwind Ensembles.  
  
N. B. Opera Workshop and Jazz Ensemble will not be considered *minor* ensembles. Other minor ensembles may be instituted at the discretion of the Ensemble Coordinator.
3. Assignment in minor ensembles will be made by the Ensemble Coordinator upon recommendation of the applied music teacher and/or the ensemble director.

## **MINOR**

The Department of Music offers a minor consisting of a minimum of 31 quarter hours. An audition will be required for acceptance as a music minor.

Required courses: a minimum of 12 quarter hours at the 3000-4000 level; one year of theory (9 hours), two years of lessons (12 quarter hours), two years of ensembles (6 quarter hours); MUL 3011.

## **BACHELOR OF ARTS: MUSIC**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 141 and 158)
3. Required Courses

MUS 1011	Music Forum (12 quarters)	0 hours
MUT 2111, 2112, 2113	Music Theory	9 hours
MVK/MVS MVW/MVB MVP/MVV	Principal Performance I (3 quarters)	6 hours
MUT 3116, 3117, 3118	Music Theory	9 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance II (3 quarters)	6 hours
MUG 3101	Basic Conducting	2 hours
MUN 3120, 3310, 3280	Major Ensemble	12 hours
	Minor Ensemble	12 hours
MUT 4431, MUT 4432	Music Theory	6 hours

MUH 4211, 4212, 4213	Music History	9 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance III (3 quarters)	6 hours
*MUS 4905	Directed Experience	15 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance IV (3 quarters)	6 hours
PHYS 3805	Physical Basis of Music	3 hours

#### 4. Restricted Electives

To be selected from upper level courses outside the Department of Music, with the approval of the student's advisor. 8 hours

#### 5. Electives

7 hours

Total Quarter Hours Required 182

### Special Non-Course Requirements

1. Piano Proficiency Examination before admission to Principal Performance III.
2. Music History and Music Theory Comprehensive Examinations.
3. Two faculty-approved public recitals: a junior recital of 30 minutes length, and a senior recital of 45 minutes length. Students who select the Piano Pedagogy option will perform two faculty-approved thirty-minute recitals.

\*In partial fulfillment of the Directed Experience requirement, Piano Majors take Piano Literature (MUL 3401, 3402, 3403) for 6 hours; Voice Majors take Foreign Diction (FRE 1005, GER 1005, ITA 1005—1 hour each for a total of 3 hours) and Song Literature (MUL 3622, 3624, 3625—1 hour each for a total of 3 hours) for a combined total of 6 hours; Piano Pedagogy Majors take Piano Literature (MUL 3401, 3402, 3403) for 6 hours, Piano Pedagogy (MVK 4631, 4632) for 4 hours, and Studio Teaching (MUS 4401) for 2 hours, for a combined total of 12 hours. Certain additional music courses may be applied toward the Directed Experience requirement with the approval of the student's advisor and the department chairman.

## BACHELOR OF ARTS: MUSIC EDUCATION

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 141 and 158)
3. Required Courses

MUS 1011	Music Forum (10 quarters)	0 hours
MVS/MVW/ MVB/MVP	Secondary Performance (Brass, Woodwind, String and Percussion Classes)	4 hours

MUT 2111, 2112, 2113	Music Theory	9 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance I (3 quarters)	6 hours
MUT 3116, 3117, 3118	Music Theory	9 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance II (3 quarters)	6 hours
MUG 3101	Basic Conducting	2 hours
MUN 3120, 3310, 3280	Major Ensemble	11 hours
	Minor Ensemble	6 hours
MUT 4431, MUT 4432	Music Theory	6 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance III (3 quarters)	6 hours
MUH 4211 4212, 4213	Music History	9 hours
EDF 3603	Teaching Analysis	4 hours
ESE 3940	Student Teaching	3 hours
ESE 4943	Student Teaching	9 hours
EDF 3255	Classroom Management	4 hours
EDG 3032	Human Aspects of School Programs	4 hours
LIS 4428	Media	4 hours
EDG 4938	Teaching Strategies	3 hours
MUE 4314	Music Education Instruction in Schools	2 hours
MUE 4330	Elementary School Music Instructional Analysis	2 hours
MUE 4350	Secondary School Music Instructional Analysis	2 hours
PHYS 3805	Physical Basis of Music	3 hours

#### **Program A—Instrumental Music Education Specialization**

MVV 1211 or MVV 2221	Secondary Performance Voice (2 voice classes)	2 hours
	Secondary Performance (individual instruments)	4 hours
MVK 1111— 1141	Class Piano (3 quarters)	3 hours
MUT 4321	Seminar in Arranging & Transcription	2 hours
MUE 4480	Marching Band Techniques	2 hours
MUG 3301	Instrumental Conducting	2 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance IV (2 quarters)	4 hours

#### **Program B—Vocal/Choral Music Education Specialization**

MVK 1111— 1141	Class Piano (5 quarters)	5 hours
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MUL 3622, 3624, 3625	Song Literature	3 hours
MUG 3201	Choral Conducting	2 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance IV (2 quarters)	4 hours
FRE 1005, GER 1005, ITA 1005	Diction	3 hours

### Program C—Piano/Vocal Music Education Specialization

MVV 1211	Class Voice (5 quarters)	5 hours
MUL 3401, 3402, 3403	Piano Literature	6 hours
MUG 3201	Choral Conducting	2 hours
MVK/MVS/ MVW/MVB/ MVP/MVV	Principal Performance IV (2 quarters)	4 hours

### Program D—Elementary School Music Education Specialization

MVV 1211	Class Voice (5 quarters) or	5 hours
MVK 1111— 1141	Class Piano (5 quarters)	
MVS 1216	Class Guitar	1 hour
MVO 1214	Class Recorder	1 hour
MUL 3622, 3624, 3625	Song Literature	3 hours
MUE 3401	Special Topics in Elementary School Music (2 quarters)	4 hours
FRE 1005, GER 1005, ITA 1005	Diction	3 hours

4. Electives 0 hours

Total Quarter Hours Required 187-189

#### Special Non-course requirements

1. Piano Proficiency Examination before admission to Principal Performance III.
2. Music History and Music Theory Comprehensive Examinations.
3. A faculty-approved public recital of 30 minutes length. (A recital is optional for the Elementary School Music Specialization.)

## DEPARTMENT OF THEATRE

**Chairman:** (Acting) *H. Smith*, FA 509B, Phone 275-2600

**Faculty:** *Mays, Smith, Welsch*

The Department of Theatre offers the student an opportunity to concentrate in the area of theatre either as a preparation for graduate or professional study or as a course of study in the liberal arts.

The major in Theatre offers four separate areas of concentration, one of which will be pursued by the student upon consultation with his advisor. There are six courses (14 hours) required of all theatre majors: THE 1020(4), THE 2071(4), THE 2725(3, 3).

## MINORS

The Department of Theatre offers minors consisting of a minimum of 24-25 quarter hours.

1. Acting/Directing.  
Required courses: THE 1002; TPP 2110; THE 3251; TPP 3700; TPA 2322; TPP 3500, 3310.
2. Film.  
Required Courses: THE 2056, 3251, 4057, 4028; 8 quarter hours of independent study and/or special topics.
3. Technical Theatre and Design.  
Required courses: THE 1002, TPA 2210, 2211, 3060, 3220; THE 3925.
4. Theatre History and Criticism.  
Required courses: THE 1002, 3112, 3113, 3114, 3312, 3313, 3314.

## BACHELOR OF ARTS: THEATRE

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special College and/or department requirements  
(See pages 141 and 163)
3. Required Courses

Program "A" Theatre History and Criticism		
THE 3251	History of the Motion Picture	4 hours
THE 3112, 3113, 3114	History of Theatre	9 hours
THE 3312, 3313, 3314	Development of Drama	12 hours
THE 4375	Contemporary Theatre/Drama	3 hours
THE 4530	Dramatic Criticism	3 hours
THE 4201, 4202	American Drama	8 hours
THE 4300	Drama Studies	3 hours
Program "B" Technical Theatre and Design		
TPA 2210	Technical Theatre Production	4 hours
TPA 2211	Stage Carpentry	4 hours
TPA 2082	Stage Properties	4 hours
THE 3230	Theatrical Costuming	3 hours
TPA 3250	Make up Techniques	4 hours
TPA 3060	Scene Design	4 hours
TPA 3220	Stage Lighting	4 hours
THE 3925	Theatre Practicum II	6 hours
THE 4170	Experimental Theatre	4 hours

THE 4932	Special Topics	4 hours
Program "C" Acting and Directing		
TPA 2210	Technical Theatre Production	4 hours
TPA 2082	Stage Properties	4 hours
TPP 2110	Acting I	4 hours
THE 3251	History of the Motion Pictures	4 hours
TPP 3111	Acting II	4 hours
TPP 3121	Improvisation/Mime	4 hours
THE 3230	Theatrical Costuming	3 hours
TPA 3250	Make Up Technique	3 hours
TPP 3500	Modern Stage Movement	4 hours
TPP 3310	Directing I	4 hours
TPA 3060	Scene Design I	4 hours
THE 4170	Experimental Theatre	4 hours
TPP 4112	Acting III	4 hours
TPP 4311	Directing II	4 hours
THE 4800	Children's Theatre	4 hours
TPP 4140	Performance Styles	4 hours
Program "D" Film		
THE 3251	History of Motion Picture	4 hours
THE 4072	Principles of Motion Picture Art	8 hours
TPP 3310,	Directing I, Experimental Theatre	8 hours
THE 4170		
or		
TPA 3060,	Scene Design, Stage Lighting	8 hours
TPA 3220		
ART 3600C	Photography	3 hours
THE 4073	Film Production	8 hours
THE 4075	Mod. Motion Picture Tech.	4 hours
	Special Topics and/or Independent Study	8 hours

4. Restricted Electives

None

5. Electives

Total Quarter Hours Required

180

## COLLEGE OF HUMANITIES AND FINE ARTS GRADUATE PROGRAMS

### MASTER OF ARTS: ENGLISH

**Program Coordinator:** R. Adicks, FA 426, Phone 275-2212

The curriculum for the Master of Arts in English, which is ordinarily not a thesis degree, consists of courses in seminars in British, American, and world literature; linguistics; and the teaching of literature and composition. The Master of Arts program provides advanced study for persons holding a bachelor's degree in English or its equivalent. It also enables teachers holding a Rank III Florida certificate to acquire a Rank II certificate while enhancing their teaching ability and developing the knowledge and skills necessary for teaching English in college.

## Admission Requirements

1. University Admission Requirements  
(See pages 34 and 60)
2. Program Admission Requirements:
  - a. An undergraduate major in English, or its equivalent, with an average of B in all English courses. (Applicants without a major in English may remove any deficiencies without graduate credit.)
  - b. Approval by the Graduate committee of the Department of English.
  - c. Three reference reports.

See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.

## Degree Requirements

1. University Graduate Policies and Procedures  
See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.
2. Prerequisites: LIN 5137 (Linguistics) or equivalent.
3. Required Courses:  
ENG 6108 (Literary Genres), LIT 6235 (World Literature), LIT 6544 (Movements in Literature), LIT 6932 (Problems of Linguistics), LIT 6535 (Major Author).
4. Restricted Electives:  
None
5. Thesis: Not ordinarily required.
6. Examinations: A comprehensive examination is required. Demonstration of reading knowledge of a foreign language is required.

Total Quarter Hours

45





# COLLEGE OF NATURAL SCIENCES

## UNDERGRADUATE PROGRAMS

- Biological Science
  - Biology (BS)
  - Botany (BS)
  - Limnology (BS)
  - Microbiology (BS)
  - Zoology (BS)
- Chemistry (BS)
- Computer Science (BS)
- Forensic Science (BS)
- Mathematics (BS)
- Physics (BS)
- Statistics (BS)

## GRADUATE PROGRAMS

- Biological Science (MS)
- Computer Science (MS)
- Industrial Chemistry (MS)
- Mathematical Science (MS)

## OTHER PROGRAMS

- Predental
- Premedical
- Prenursing
- Preoptometry
- Prepharmacy
- Preveterinary

# COLLEGE OF NATURAL SCIENCES

**Dean:** *B. Ostle*, AD 217, Phone 275-2691

**Associate Dean:** *R. Laird*, AD 214, Phone 275-2691

**Assistant Dean:** *J. Idoux*, AD 215, Phone 275-2691

It is the purpose of the College of Natural Sciences to assist all students to develop their individual capabilities to the fullest. To this end, the College will provide a broad liberal education through the Environmental Studies Program as well as concentrated study in specialized fields.

## **MAJOR STUDY PROGRAMS AND GENERAL REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE**

In addition to meeting all University requirements, each degree program in the College of Natural Sciences must contain:

1. ENC 3355, Professional Report Writing II, and
2. courses which will introduce the student to the three major scientific disciplines within the College; i.e., physical sciences, biological and health sciences, and mathematical and computer sciences.

To satisfy the latter requirement, each student must take six courses distributed among the two scientific disciplines outside that of his major with a minimum of two courses in either discipline. (Notes: (1) Each department has identified a group of approved courses from which its majors may select in order to satisfy this College requirement. These courses will be of sufficient academic rigor to acquaint the student with both the philosophy and methodology of professionals within their disciplines. (2) With proper justification a student may be permitted to utilize courses offered outside the College of Natural Sciences to satisfy this distribution requirement by obtaining the prior approval of the Dean. Such requests must carry departmental approval before submission to the college of Natural Sciences Academic Standards Committee which will then forward them, with its recommendation, to the Dean.)

All degree programs must be approved by the major department and by the Dean of the College of Natural Sciences.

At the present time, undergraduate degree programs are available in the following areas: Biological Science (with options in Biology, Botany, Limnology, Microbiology and Zoology), Chemistry, Computer Science, Forensic Science, Mathematics, Physics, and Statistics. Preprofessional programs are also available to help students prepare for further study in the health and health related professions.

Preprofessional programs leading to further study in schools of dentistry, medicine, optometry, pharmacy, podiatry and veterinary medicine are administered through the Office of the Preprofessional Coordinator, located in the Dean's Office. Other preprofessional programs associated with the health related professions (i.e., the allied health sciences) are administered through the College of Health Related Professions.

## **GRADUATE PROGRAMS**

Graduate programs leading to a Master of Science degree are available in Biological Science, Computer Science, Industrial Chemistry, and Mathematical Science.

## **PROGRAM PLANNING**

Although suggested curricula are available in most areas, each student will plan his program in consultation with a faculty advisor appointed by the chairman of the major department or by the Dean of the College of Natural Sciences.

## **DEPARTMENT OF BIOLOGICAL SCIENCES**

**Chairman:** *D. Vickers*, BL 211, Phone 275-2141

**Faculty:** *Charba, Ehrhart, Ellis, Gennaro, Hebrard, Koevenig, Kuhn, Laird, Miller, Osborne, Snelson, Stout, Sweeney, Sweet, Taylor, Washington, White, Whittier, Wodzinski*

The Department of Biological Sciences offers a Bachelor of Science in Biological Science with options in biology, botany, limnology, microbiology, and zoology, a minor in Biology, as well as the Master of Science in Biological Science.

In an age when new discoveries are reported daily on both celestial and molecular levels, the study of living organisms has gained new importance among the sciences. Students in the life sciences find themselves in demand in teaching and many phases of research. The Core Curriculum required of all Biological Sciences majors provides a background in the chemical and mathematical sciences in addition to Biology; thus allowing career opportunities for graduates in areas outside their major. In addition, an increasing number of graduates are furthering their education in professional or graduate schools. Through the judicious selection of electives in consultation with a faculty advisor, a subspecialty, such as physiology, may be emphasized in one or more of the options outlined below.

## **MINOR**

The Department of Biological Sciences offers a minor in Biology consisting of a minimum of 34 hours.

Required courses (21 hours); BOT 1010C, BSC 1010C, MCB 2013C, PCB 3063C, and ZOO 1010C.

Restricted Electives (13 hours minimum): At least one course must be selected from each group:

Group I—Ecology: MCB 4603C or PCB 3043C

Group II—Physiology: BOT 4503C, MCB 4404C, PCB 3023C, or PCB 4723.

Group III—Electives: Any 3000 level or above course(s) designed for majors in Biological Sciences, exclusive of those listed in Groups I and II.

To be eligible for a minor in biology, a student must have a GPA of at least 2.0 in all biological science courses subject to the following constraints:

- A. No CLEP or TSD credits may be used
- B. No D grades from other institutions will be accepted.

## BACHELOR OF SCIENCE: BIOLOGICAL SCIENCE

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 168 and 169)

To be eligible for a major in any of the biological sciences, a student must have a GPA of at least 2.0 in all biological science courses subject to the following constraints: A. No CLEP or TSD credits may be used; B. No D grades from other institutions will be accepted.

### 3. Required Courses

BSC 1010C	Basic Biology	5 hours
PCB 3023C	Cell Physiology	
or		4-5 hours
MCB 4404C	Microbial Physiology	
PCB 3043C	Principles of Ecology	4 hours
PCB 3063C	Genetics	4 hours
BOT 1010C	General Botany	4 hours
CHM 2045, 2046, 2047	Chemistry Fundamentals, I, II and III	10 hours
CHM 2046L	Chemistry Fundamentals Laboratory	1 hour
CHM 2120C	Analytic Fundamentals	2 hours
CHM 3210, 3211, 3212	Organic Chemistry I, II, III	10 hours
CHM 3211L	Organic Laboratory Techniques I	2 hours
MCB 2013C	General Microbiology	4 hours
PHY 2050C, PHY 2051C	College Physics I and II	8 hours
STA 3023	Fundamentals of Probability & Statistics	4 hours
ZOO 1010C	General Zoology	4 hours

4. Restricted Electives  
(See specialization requirements listed below.)

#### MATH

A minimum of 12 quarter hours in MATH selected in consultation with the student's advisor or the successful completion of a course in college level calculus. Courses of a difficulty level less than college algebra (MAC 1104) may *not* be used to satisfy this requirement. Students may *not* claim credit for *both* MAC 1132 and (MAC 1104 and/or 1114).

12 hours

5. Electives  
Number of hours varies with the specialization.

Total Quarter Hours Required

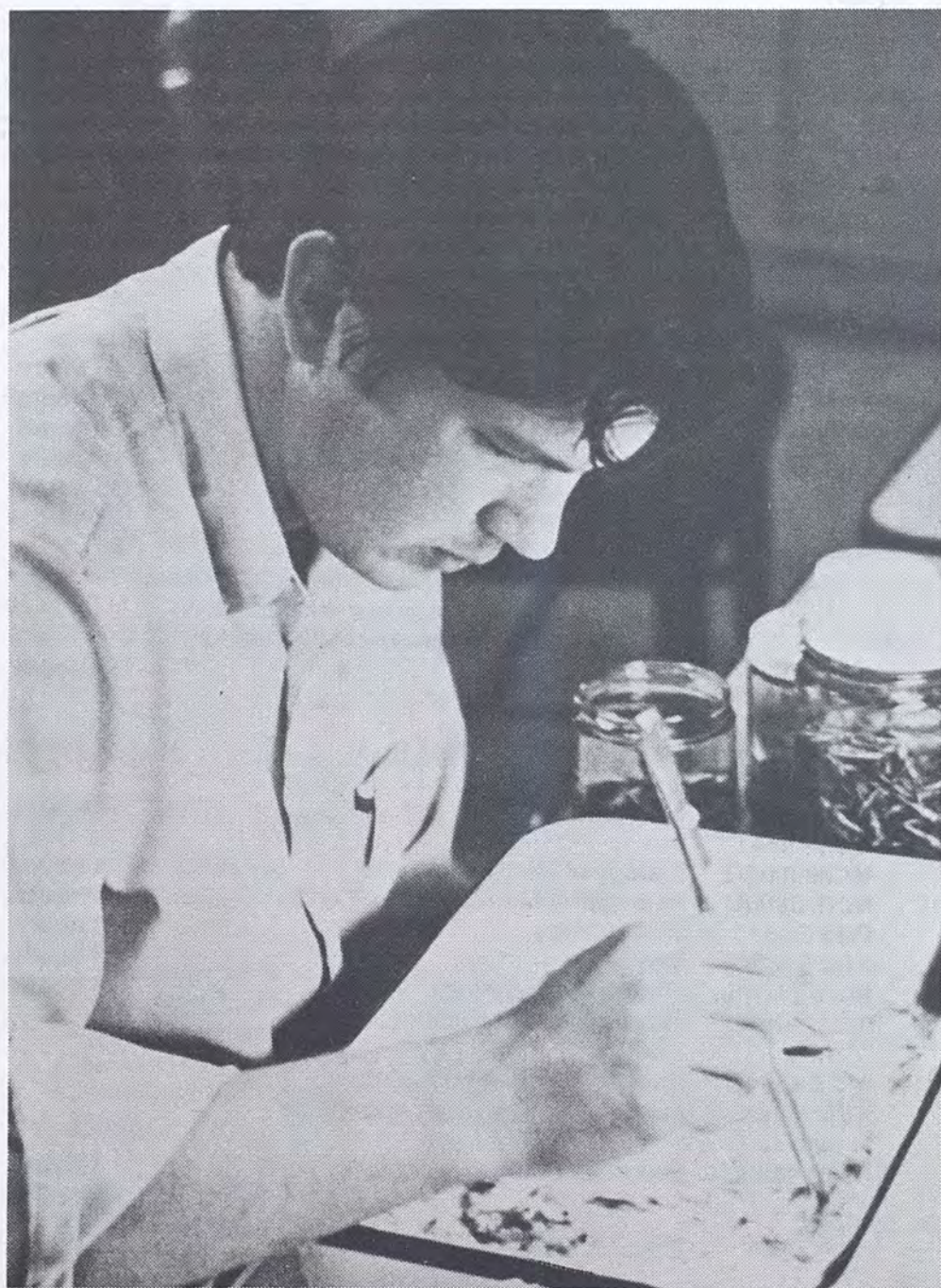
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## AREAS OF SPECIALIZATION

(Students desiring to specialize in the areas identified below shall include the following courses in completing degree requirements.)

1. Biology  
Restricted Electives Biology, Botany, Chemistry, Microbiology, or Zoology. To be selected with student's advisor from courses numbered 3000 or above. 36 hours
2. Botany  
BOT 3303C Plant Kingdom 5 hours  
BOT 3223C Plant Anatomy 4 hours  
BOT 3713C Plant Taxonomy 5 hours  
BOT 4503C Plant Physiology 4 hours  
Restricted Electives Biology, Botany, Chemistry, Microbiology, or Zoology. To be selected with student's advisor from courses numbered 3000 or above; including at least 8 hours of Botany. 18 hours
3. Limnology  
PCB 4304C Limnology 5 hours  
PCB 4303C Freshwater Systems 5 hours  
BOT 4403C Freshwater Algae 4 hours  
COP 1110 Computer Programming 3 hours  
ZOO 4203C Invertebrate Zoology 5 hours  
ZOO 4453C Ichthyology 4 hours  
Restricted Electives Biology, Botany, Chemistry, Computer Science, Microbiology, Physics, Statistics or Zoology courses numbered 3000 or above approved by the student's advisor. 12 hours
4. Microbiology  
CHM 3121C, Analytical Chemistry I, II 6 hours  
CHM 3122C  
BCH 4053, Biochemistry I, II 6 hours  
BCH 4054  
MCB 3030C Biology of Microorganisms 5 hours  
MCB 3203C Pathogenic Microbiology 4 hours  
PCB 3233 Immunology 3 hours  
APB 3535C Serology 3 hours  
MCB 4404C Microbial Physiology 4 hours  
MCB 4164C Diagnostic Microbiology 4 hours  
or  
MCB 4114C Determinative Microbiology  
APB 4763C Microbiology of Water and Waste  
or  
MCB 4603C Microbial Ecology 4 hours
5. Zoology  
PCB 4647 Organic Evolution 3 hours

ZOO 3713C, ZOO 3714C	Comparative Vertebrate Anatomy I,II	8 hours
ZOO 3303C	Vertebrate Zoology	4 hours
PCB 4723C	Animal Physiology	5 hours
ZOO 4203C	Invertebrate Zoology	5 hours
Restricted Electives	ZOO courses numbered 3000 or above approved by the student's advisor	8 hours



## DEPARTMENT OF CHEMISTRY

**Acting Chairman:** G. Mattson, SC 117, Phone 275-2246

**Faculty:** Baker, Clausen, Cornish, Cunningham, Gupton, Hertel, Idoux, Juge, Knudson, Kujawa (Geology), Madsen, Mattson, McGee (Forensic Science)

The Department of Chemistry offers a Bachelor of Science in Chemistry, Bachelor of Science in Forensic Science, and the Master of Science in Industrial Chemistry.

Completion of the undergraduate program in chemistry, which is accredited by the American Chemical society, provides access to a number of career opportunities in industry, government service, or education. Positions may entail basic or applied research, product development or control, sales, management or teaching. The program may lead to further study at the graduate level in analytical, biological, inorganic, organic, physical, or industrial chemistry or in related scientific areas. With appropriate choice of electives it also constitutes excellent preparation for the professional schools of dentistry, medicine, pharmacy, podiatry, or veterinary medicine.

### BACHELOR OF SCIENCE: CHEMISTRY

#### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 168 and 173)
3. Required Courses

CHM 2045, 2046, 2047	Chemistry Fundamentals I, II and III	10 hours
CHM 2046L	Chemistry Fundamentals Laboratory	1 hour
CHM 2120C	Analytical Fundamentals	2 hours
CHM 3210, 3211, 3212	Organic Chemistry I, II and III	10 hours
CHM 3211L, CHM 3212L	Organic Laboratory Techniques I and II	4 hours
CHM 3121C, CHM 3122C	Analytical Chemistry I and II	6 hours
CHM 3410, 3411, 3412	Physical Chemistry I, II and III	11 hours
CHM 3411L, CHM 3412L	Physical Chemistry Laboratory I and II	4 hours
CHM 4610	Inorganic Chemistry	4 hours
CHM 4130C	Advanced Analytical Laboratory Technique	5 hours
CHM 4810	Undergraduate Research	6 hours
ENC 3355	Professional Report Writing II	3 hours
MAC 2154	Analytic Geometry	3 hours
MAC 3311, 3312, 3313	Calculus I, II and III	12 hours
MAC 3314	Intermediate Calculus	4 hours

PHY 2040, 2041C, 2042C	General Physics I, II, III	12 hours
PHY 3752C	Physics of Scientific Instruments	4 hours
STA 3023	Fundamentals of Probability and Statistics	4 hours
4. Restricted Electives		
a. Biological Sciences	12 hours	
b. COP 1110	Computer Programming	
or		
COP 3215	Programming and Numerical Methods	3 hours
c. Any three		
BCH 4053	Biochemistry I	3 hours
BCH 4054	Biochemistry II	3 hours
BCH 4055	Biochemistry III	3 hours
CHM 4160	Analytical Methods Development	3 hours
CHM 4220	Advanced Organic Chemistry I	3 hours
CHM 4221	Advanced Organic Chemistry II	3 hours
CHM 4580	Advanced Physical Chemistry	3 hours
CHM 5710	Chemical Structure I	3 hours
CHS 4110C	Nuclear and Radio Chemistry	3 hours
CHS 4200	Concepts in Industrial Chemistry	3 hours

5. Electives

Two years of German is recommended for those students intending to pursue graduate studies.

Total Quarter Hours Required 189

## FORENSIC SCIENCE PROGRAM

Forensic science is the profession which serves the scientific needs of the justice system. The program at UCF has been designed to provide the student with an educational background in either of two subspecialties: Criminalistics or Civilistics.

The principal job of the forensic scientist is to scientifically examine physical evidence gathered at the scene of a suspect criminal action or in a connection with a civil action involving two or more parties. The criminalist may work on physical evidence such as blood, hairs, fibers, or pharmaceutical and clandestine drug preparations. The civilist may work on suspect air and water pollution samples, patent medicine formulations, or faulty equipment suspect of being in violation of consumer protection standards. Upon completion of an investigation the forensic scientist presents his findings in court. The goal of the Forensic Science program is to prepare students for this demanding profession.

## BACHELOR OF SCIENCE: FORENSIC SCIENCE

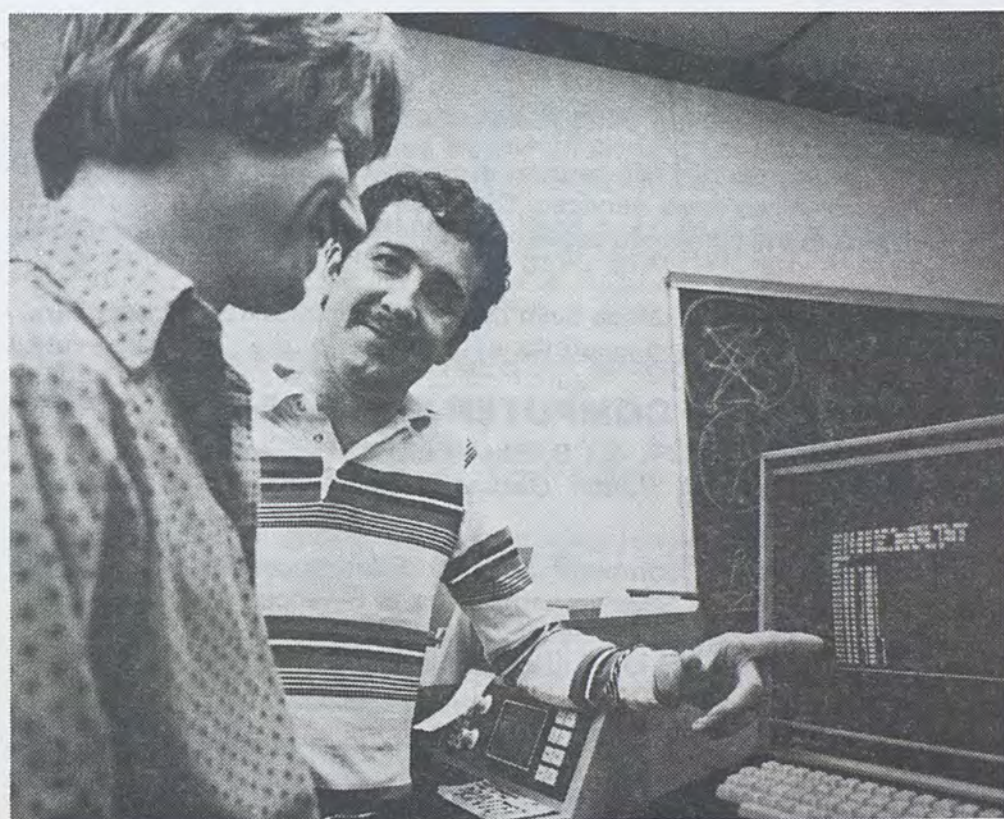
### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 168 and 173)



### 3. Required courses

BSC 1010C	Basic Biology	5 hours
BOT 1010C	General Botany	4 hours
CHM 2045, 2046, 2047	Chemistry Fundamentals I, II and III	10 hours
CHM 2046L	Chemistry Fundamentals Laboratory	1 hour
CHM 2120C	Analytical Fundamentals	2 hours
CHM 3210, 3211, 3212	Organic Chemistry I, II and III	10 hours
CHM 3211L	Organic Laboratory Techniques I	2 hours
CHM 3121C, 3122C	Analytical Chemistry I and II	6 hours
	Cooperative Education Junior Year	0 hours
COP 1110	Computer Programming	3 hours
ENC 3355	Professional Report Writing II	3 hours
CHS 3511	Criminalistics I	4 hours
CHS 3531	Forensic Analysis Techniques	4 hours
CHS 4591	Forensic Science Internship	8 hours
MAC 3253, MAC 3254	Applied Calculus I, II	8 hours
MCB 2013C	General Microbiology	4 hours
PHY 2050C, PHY 2051C	College Physics I and II	8 hours
PHY 3752C	Physics of Scientific Instruments	4 hours
STA 3023	Fundamentals of Probability & Statistics	4 hours



#### 4. Restricted Electives

The intent of the restricted electives is to provide the major with an opportunity to select in consultation with his/her advisor, a minimum of 36 hours (criminalistics) or 37 hours (civilistics) of coursework which will complement the student's specialized program of study in the major field. Normally, these courses will be selected from upper division courses in science, forensic science, criminal justice, or allied legal services. Of the 36 or 37 hours, not more than 12 hours may be selected from the criminal justice or allied legal services areas. Exceptions to these stipulations must be approved by the student's advisor.

##### Group A (A minimum of 4 hours—one course)

CCJ 3260	Criminal Law in Action	4 hours
LEA 3601	Criminal Law and the Paraprofessional	4 hours

##### Group B (A minimum of 4 hours—one course)

CCJ 3020	Administration of Justice	4 hours
CCJ 3451	Justice of Manpower for Science and Technology	4 hours
CCJ 4630	Comparative Justice Systems	4 hours
LEA 3001	Law and the Paraprofessional	4 hours
LEA 3013	Legal Investigation	4 hours

##### Group C (4 hours)

	for Criminalistics Option:	
CHS 3512	Criminalistics II	4 hours
	for Civilistics Option:	
CHS 3521	Civilistics	4 hours

##### Group D (A minimum of 24 [Criminalistics] or 25 [Civilistics] hours)

Approved upper division courses in science, forensic science, criminal justice or allied legal services. Of these, no more than 4 hours may come from the combined areas of criminal justice and allied legal services.

#### 5. Electives

	7-8 hours
Total Quarter Hours Required	180

## DEPARTMENT OF COMPUTER SCIENCE

Chairman: *T. Frederick*, FA 461-B, Phone 275-2341

**Faculty:** *Cottrell, Driscoll, Dutton, Gerber, Kinsley, Lang, Lore, Ma, Rhein, Workman.*

The Department of Computer Science offers courses and programs leading to a Bachelor of Science and Master of Science (See page 194 for M. S. program) in Computer Science. In addition, the department offers a minor in computer science for students majoring in the College of Business Administration.

Computer science strives to meet the computer personnel needs of the scientific, business and industrial community by producing graduates with a broad base of formal courses as well as a specialization in selected areas. In

addition, the department conducts research in programming systems/languages, information systems, computer architecture and computational methods.

Departmental computing facilities include three computer laboratories all designed for "hands on" use by students. There is a ZILOG Z-80 Developmental System located in the Microcomputer Lab and a VARIAN-73 microprogrammable minicomputer in the Minicomputer Lab. A DATA-100/78 remote job entry station connected to an IBM 370/165, as well as terminals linked to both the IBM 370 and a HARRIS Slash 4, are available in the Large Scale Systems Lab.

In addition to the degree requirements for a B. S. in Computer Science listed below, the following standards are required by the department for graduation.

1. A minimum GPA of 2.00 in *all courses* used to satisfy the requirements for the major in Computer Science.
2. A minimum GPA of 2.00 in *computer science* courses used to satisfy the requirements for the major in Computer Science.
3. The above requirements apply not only to the overall program, but also to the courses taken at UCF.

## MINOR

The Department of Computer Science offers a minor in Computer Science for Business majors consisting of a minimum of 24 quarter hours.

Required courses (18 hours); CAP 3001, 3002, 3006, 3007, COP 3120, COP 3121 or CIS 4112.

Restricted electives (6 hours minimum): A minimum of six additional credit hours must be selected from the following courses with the restriction that no more than one course in Group II may be used:

Group I—COP 1110, 2510, 2511, 3522, 3121; CNM 4020; CIS 4112; MAS 3113; MAC 3233, 3311, 3312, 3313, 3314; STA 4163, 4164.

Group II—MAN 4510, FIN 3453, MAR 3603, ECO 4412, ACC 4421.

## BACHELOR OF SCIENCE: COMPUTER SCIENCE

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 168 and 176)
3. Required courses: Courses used to satisfy the requirements for the major can be counted only once in the major.

COP 2510, COP 2511	Programming I, II	6 hours
COP 3522	Structured Programming	3 hours
COP 3402	Assembly Language Programming	4 hours

CDA 3151	Minicomputer Programming Laboratory	4 hours
COP 4530	Data Structures	4 hours
MAC 3311, 3312, 3313	Calculus I, II, III	12 hours
PHY 2040, PHY 2041C	General Physics I, II	9 hours
PHY 3752C	Physics of Scientific Instruments	4 hours
EEL 3341C	Introduction to Digital Circuits	4 hours
STA 3023	Fundamentals of Probability and Statistics	4 hours

4. Restricted Electives

STA 4163	Statistical Methods I	
or		
STA 4321	Mathematical Statistics I	4 hours

and a minimum of 42 quarter hours of courses selected from one of the four areas of specialization.

5. Electives

The number of hours varies with the specialization.

Total Quarter Hours Required 180 hours

**AREAS OF SPECIALIZATION**

1. General Computer Science. Students desiring to specialize in the area must complete a minimum of 42 hours as follows:

Group A (All courses listed.)

CDA 4102	Introduction to Computer Architecture	4 hours
COP 4620	Programming Systems	4 hours
COT 4001	Discrete Computational Structures	4 hours
CNM 4110	Numerical Calculus	4 hours
MAC 3314	Intermediate Calculus	4 hours

Group B (A minimum of 16 hours.)

COP 4550	Programming Languages I	4 hours
COP 5554	Programming Languages II	4 hours
CAP 5722	Computer Graphics Systems I	3 hours
COP 3120, COP 3121	COBOL I, II	3-6 hours
MAS 3113, or	Matrices	4-8 hours
MAS 3103, MAS 3104	Linear Algebra I, II	
MAP 3302	Ordinary Differential Equations I	4 hours
STA 4321, STA 4322	Mathematical Statistics I, II	8 hours
STA 4163, STA 4164	Statistical Methods I, II	8 hours

Group C

Courses taught by the Department of Computer Science numbered 4000 or higher.

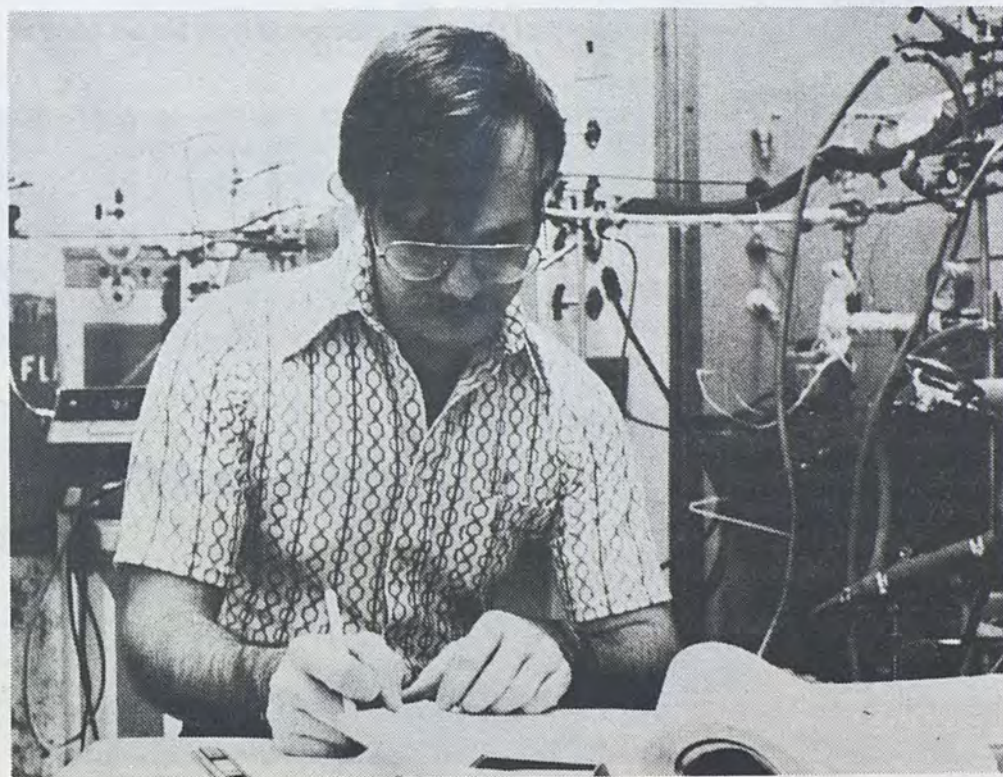
2. Programming and Systems. Students desiring to specialize in the area must complete a minimum of 42 hours, as follows:

**Group A (All courses listed:)**

CDA 4102	Introduction to Computer Architecture	4 hours
COP 4550	Programming Languages I	4 hours
COP 4620	Programming Systems	4 hours
COT 4001	Discrete Computational Structures	4 hours
STA 4164	Statistical Methods II	4 hours

**GROUP B (A minimum of 17 hours)**

CDA 4161	Programming for Large Scale Digital Systems	4 hours
CIS 4112	Data Base Processing	3 hours
COP 5554	Programming Languages II	4 hours
CAP 5722	Computer Graphics Systems I	3 hours
COP 3120, COP 3121	COBOL I, II	3-6 hours
STA 4102	Computer Processing of Statistical Data	4 hours
COT 4001	Discrete Computational Structures	4 hours
CNM 4110	Numerical Calculus	4 hours
MAS 3113	Matrices	
or		
MAS 3103, 3104	Linear Algebra I, II	4-8 hours
MAC 3314	Intermediate Calculus	4 hours
MAP 3302	Ordinary Differential Equations I	4 hours



### Group C

Courses taught by the Department of Computer Science numbered 4000 or higher.

### 3. Scientific Applications Programming. Students desiring to specialize in the area must complete a minimum of 42 hours, as follows:

#### Group A (All courses listed.)

COT 4001	Discrete Computational Structures	4 hours
CNM 4110	Numerical Calculus	4 hours
MAS 3313	Matrices	
or		
MAS 3103, 3104	Linear Algebra I, II	4-8 hours
MAC 3314	Intermediate Calculus	4 hours
MAP 3302	Ordinary Differential Equations I	4 hours

#### Group B (A minimum of 14 hours.)

CDA 4102	Introduction to Computer Architecture	4 hours
COP 4550	Programming Languages I	4 hours
COP 4620	Programming Systems	4 hours
CNM 5142	Computational Methods/Linear Systems	4 hours
COP 5554	Programming Languages II	4 hours
CAP 5722	Computer Graphics Systems I	3 hours
STA 4321, STA 4322	Mathematical Statistics I, II	8 hours
STA 4163, STA 4164	Statistical Methods I, II	8 hours

### Group C

Courses taught by the Department of Computer Science numbered 4000 or higher.

### 4. Business Applications Programming. Students desiring to specialize in the area must complete a minimum of 42 hours, as follows:

#### Group A (All courses listed.)

COP 3120, COP 3121	COBOL I, II	6 hours
CIS 4323	Data Processing Systems Analysis and Design	3 hours
CIS 4112	Database Processing	3 hours
CIS 4234	Data Processing Systems Implementation	3 hours

#### Group B (A minimum of 21 hours with at least 3 courses selected from [1] and at least 2 courses from [2].)

##### [1]

CDA 4102	Introduction to Computer Architecture	4 hours
COP 4550	Programming Languages I	4 hours
COP 4620	Programming Systems	4 hours
COP 5554	Programming Languages II	4 hours
STA 4102	Computer Processing Statistical Data	4 hours

MAS 3113	Matrices	4-8 hours
or		
MAS 3103, 3104	Linear Algebra I, II	
STA 3321, STA 3322	Mathematical Statistics I, II	8 hours
STA 4163, STA 4164	Statistical Methods I, II	8 hours
[2]		
ACC 3003	Financial Accounting	5 hours
ACC 3301	Management Accounting	3 hours
FIN 3403	Finance	5 hours
MAN 3010	Management and Organization Behavior	3 hours
MAN 3151	Human Behavior and Interpersonal Relationships	3 hours
MAR 3023	Marketing	5 hours



### Group C

Courses taught by the Department of Computer Science numbered 4000 or higher.

5. Computer Architecture. Students desiring to specialize in the area must complete a minimum of 42 hours as follows:

#### Group A (All courses listed.)

CDA 4102	Introduction to Computer Architecture	4 hours
CDA 4142	Microcomputer Organization	4 hours
CDA 4144	Microcomputer Interfacing	4 hours
CDA 4146	Microcomputer Applications	4 hours
COP 4620	Programming Systems	4 hours

#### Group B (A minimum of 16 hours)

CAP 5722	Computer Graphics Systems I	3 hours
CDA 5106	Analyses of Computer Architecture	4 hours
CIS 4112	Data Base Processing	3 hours
COP 4550	Programming Languages I	4 hours
COT 4001	Discrete Computational Structures	4 hours
EEL 4342C	Logic Component Design	4 hours
EEL 4701C	Logical Systems Design	4 hours
MAS 3113	Matrices	4 hours
MAC 3314	Intermediate Calculus	4 hours

### Group C

Courses taught by the Computer Science Department numbered 4000 or higher.

## DEPARTMENT OF MATHEMATICS AND STATISTICS

**Chairman:** J. Anthony, FA 461-C, Phone 275-2341

**Faculty:** Andrews, Armstrong, Barr, Brigham, Caron, A. Dutton, Heinzer, Hurst, Ingram, Jones, Norman, O'Hara, Ostle, Pettofrezzo, Rautenstrauch, Rodriquez, Salzmann, Sherwood, Somerville, Taylor

The Department of Mathematics and Statistics offers courses and programs which lead to a Bachelor of Science in Mathematics, a Bachelor of Science in Statistics, a minor in mathematics, a minor in statistics, and a Master of Science in Mathematical Science. (See page 195 for a description of the M. S. in Mathematical Science.)

The programs in mathematics and statistics are designed to serve (1) students who wish to pursue careers in mathematics or statistics after having completed a baccalaureate degree; (2) students who wish to continue their education in graduate and professional schools; and (3) students who need to use mathematics or statistics as tools in their specialty areas.

In order to serve such a wide variety of students, the courses and programs in the Department of Mathematics and Statistics have developed along several lines. There are the usual service courses in precalculus, calculus and elementary statistics along with strong programs in the upper



division in the traditional areas of algebra and analysis, applied mathematics, statistical methods, and statistical theory.

A limited number of student assistantships are available for qualified graduate and undergraduate students.

## MINOR

The Department of Mathematics and Statistics offers the following minors consisting of a minimum of 24 quarter hours in each minor. Additional information may be obtained from the Department.

### 1. Mathematics.

Required courses: MAC 3311, 3312, 3313, 3314; MAP 3302.

Restricted electives: A minimum of three additional 3000 level or above selected from MAP courses; MTG courses; MAA courses from Group I or Group II, but not in both (Group I: MAA 4226, 4227, 4228. Group II: MAA 5211, 6212); MAA courses from Group I or Group II, but not in both (Group I: MAA 4402, 4403. Group II: MAA 5405); MAS courses from Group I or Group II, but not in both (Group I: MAS 3103, 3104. Group II: MAS 3113); STA 4442, 6807.

### 2. Statistics.

Required course: STA 3023 or STA 3032 or equivalent; STA 4163, 4164; STA 4202 or STA 4222.

Restricted electives: Nine or more hours from STA courses numbered 3000 or higher and not including STA 3023, STA 3032, or equivalent.

## BACHELOR OF SCIENCE: MATHEMATICS

### Degree Requirements

#### 1. University graduation requirements

(See pages 47 and 66)

#### 2. Special college and/or department requirements

(See pages 168 and 182)

#### 3. Required courses

The courses listed, or departmentally approved equivalents, are required for the mathematics degree.

MHF 2300	Logic and Proof in Mathematics	4 hours
MAC 2154	Analytic Geometry	3 hours
MAC 3311	Calculus I	4 hours
MAC 3312	Calculus II	4 hours
MAC 3313	Calculus III	4 hours
MAC 3314	Intermediate Calculus	4 hours
MAS 3103	Linear Algebra I	4 hours
MAS 3104	Linear Algebra II	4 hours
MAA 4226	Introduction to Analysis I	3 hours
MAA 4227	Introduction to Analysis II	3 hours
MAA 4228	Introduction to Analysis III	3 hours
MAP 3302	Ordinary Differential Equations I	4 hours
MAP 4303	Ordinary Differential Equations II	4 hours
MAS 4301	Algebraic Structures I	
or		
MTG 4302	Topology I	4 hours

STA 3023	Fundamentals of Probability and Statistics	4 hours
STA 4321	Statistical Theory I	4 hours
STA 4322	Statistical Theory II	4 hours
COP 2510	Programming I	3 hours
COP 2511	Programming II	3 hours
PHY 2040	General Physics I	4 hours
PHY 2041C	General Physics II	5 hours
PHY 2042C	General Physics III	5 hours

#### 4. Restricted Electives

A minimum of 12 hours from the following list:

COT 4001	Discrete Computational Structures	4 hours
CNM 4110	Numerical Calculus	4 hours
CNM 5142	Computational Methods/Linear Systems	4 hours
ECM 4134	Optimum Seeking Methods	3 hours
EGN 4634	Operations Research	3 hours
EGN 4714	Linear Control Systems	4 hours

and any upper division or graduate mathematics or statistics course taught by the Department of Mathematics and Statistics (except MAC 3253, MAC 3254, MAC 3233, MAE 4839, MAC 4871).

#### 5. Electives

The number of hours varies with the restricted electives chosen and the courses chosen for satisfying university and college requirements. A plan for use of electives must be approved by a departmental committee at least two quarters prior to graduation.

Total Quarter Hours Required 180

### **BACHELOR OF SCIENCE: STATISTICS**

#### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)

2. Special college and/or department requirements  
(See pages 168 and 182)

3. Required courses

The courses listed, or departmentally approved equivalents, are required for the statistics degree.

STA 3023	Fundamentals of Probability and Statistics	4 hours
STA 3664	Statistical Quality Control	3 hours
STA 4163	Statistical Methods I	4 hours
STA 4164	Statistical Methods II	4 hours
STA 4202	Experimental Design	3 hours
STA 4203	Regression Analysis	4 hours
STA 4222	Sample Survey Methods	3 hours
STA 4321	Statistical Theory I	4 hours
STA 4322	Statistical Theory II	4 hours

STA 4102	Computer Processing of Statistical Data	4 hours
MHF 2300	Logic and Proof in Mathematics	4 hours
MAC 2154	Analytic Geometry	3 hours
MAC 3311	Calculus I	4 hours
MAC 3312	Calculus II	4 hours
MAC 3313	Calculus III	4 hours
MAC 3314	Intermediate Calculus	4 hours
MAS 3313	Matrices	4 hours
COP 2510	Programming I	3 hours
COP 2511	Programming II	3 hours
CNM 4110	Numerical Calculus	4 hours

#### 4. Restricted Electives

A minimum of 16 hours from the following list:

COT 4001	Discrete Computational Structures	4 hours
CNM 5142	Computational Methods/Linear Systems	4 hours
ECM 4134	Optimum Seeking Methods	3 hours
EGN 4634	Operations Research	3 hours
EGN 4714	Linear Control Systems	4 hours

and any upper division or graduate mathematics or statistics course taught by the Department of Mathematics and Statistics (except MAC 3253, MAC 3254, MAC 3233, MAE 4839, MAE 4871).

#### 5. Electives

The number of hours varies with the restricted electives chosen and the courses chosen for satisfying university and college requirements. A plan for use of electives must be approved by a departmental committee at least two quarters prior to graduation.

Total Quarter Hours Required

180

## DEPARTMENT OF PHYSICS

**Chairman:** J. Noon, EN 312, Phone 275-2325

**Faculty:** Bolemon, Bolte, Brennan, Henderson, Katzin, Meyers, Oelfke

The Department of Physics offers the Bachelor of Science degree in Physics and a minor in Physics. Physics is a basic science fundamental to many different fields of endeavor. Physics majors who prepare for interdisciplinary type careers use electives to study other areas of science in depth. Programs of electives related to possible future careers should be planned before the beginning of the sophomore year. Transfer students, however, will be advised on arrival in this regard.

General courses such as astronomy, physical science, or physics of science fiction cannot be included to satisfy requirements for the major, although an interdisciplinary course such as biophysics could be appropriate. At the upper division, independent investigation and the use of modern scientific instrumentation (such as lasers, lock-in amplifiers, multi-channel analyzers, nuclear counters, oscilloscopes, radiation detectors, spectrometers and vacuum leak sensors) are emphasized. Students planning graduate study should consult faculty advisors about increased course

content in upper level physics course; a double major will be encouraged where appropriate. Elective 4000 level courses are offered on an alternate year basis: extra courses (e.g., advanced mechanics, gravitation, relativity, lasers, plasma physics, elementary particles, nonlinear optics) and laboratory work may be provided on demand for individual students.

Research interests of the faculty include astrophysics, atmospheric electricity, biophysics, computing, instrumentation, lasers, mathematical modeling, nuclear physics, optics, plasmas, radio-astronomy, solar energy.

## MINOR

The Department of Physics offers a minor consisting of a minimum of 34 quarter hours.

Required courses: PHY 2040, 2041C, 2042C, 2041L, 2042L and in addition either option (a) or (b).

(a) experimental option: PHS 3151; PHY 3752C, 3722C, 3802L, 3803L

(b) theoretical option: PHY 3043, 3044, 3045, 3046, 3047.

## BACHELOR OF SCIENCE: PHYSICS

### Degree Requirements

#### 1. University graduation requirements

(See pages 47 and 66)

#### 2. Special college and/or department requirements

(See pages 168 and 185)

In addition to the degree requirements listed below for a B. S. in Physics, the following standards are required by the department for graduation:

- a. A minimum GPA of 2.0 is needed for all courses used to satisfy the requirements for a major in physics.
- b. No credit towards graduation will be given for a D grade in any physics or mathematics course required for a major in physics, although a higher grade on repeating the course will be accepted. Approval as a special case by the Department Academic Standards Committee is required for any waiver of requirements towards graduation.

#### 3. Required courses

The courses listed, or departmentally approved equivalents, are required in the physics curriculum.

BSC 1010C	Basic Biology	5 hours
CHM 2045, 2046, 2047	Chemistry Fundamentals I	10 hours
CHM 2046L	Chemistry Fundamentals Laboratory	1 hour
CHM 2120C	Analytical Fundamentals	2 hours
COP 3215	Programming and Numerical Methods	3 hours
ENC 3355	Professional Report Writing II	3 hours
MAC 2154	Analytic Geometry	3 hours
MAC 3311, 3312, 3313	Calculus I, II, III	12 hours
MAC 3314	Intermediate Calculus	4 hours
MAP 3302	Differential Equations I	4 hours

PHY 2040, 2041C, 2042C	General Physics I, II, III	14 hours
PHY 3043	Mechanics	4 hours
PHY 3044	Electricity and Magnetism	4 hours
PHY 3045	Electromagnetic Waves	4 hours
PHY 3046	Wave Mechanics	4 hours
PHY 3047	Thermodynamics and Statistical Physics	4 hours
PHY 3151	Computer Methods in Physics I	4 hours
PHY 3101	Modern Physics	3 hours
PHY 3421	Optics and Wave Motion	3 hours
PHY 3752C	Physics of Scientific Instruments	4 hours
PHY 3722C	Physics Laboratory—Electronics	4 hours
PHY 3802L	Intermediate Physics Laboratory I	4 hours
PHY 3803L	Intermediate Physics Laboratory II	4 hours
PHY 4970	Physics Thesis	3 hours
STA 3032	Probability & Statistics for Engineers	3 hours
4. Restricted Electives		
Upper division PHYS courses or those to be used in partial fulfillment of the requirements of a double major		6 hours
A second course in Biological Sciences is required		3 to 5 hours
5. Electives		
A plan for use of electives must be approved no later than the junior year by a departmental committee		10 to 12 hours
Total Quarter Hours Required		180

## PREPROFESSIONAL PROGRAMS

**Preprofessional Coordinator:** *R. Laird*, AD 214, Phone 275-2691

The Office of the Preprofessional Coordinator has been created to operate as a service to all students preparing for and seeking admission to professional schools of dentistry, medicine, optometry, pharmacy, podiatry and veterinary medicine. The services afforded the student through this office are numerous and range from simple advising and counseling in pre-professional matters to providing a compiled preprofessional evaluation of the student upon his request to each professional school to which he desires to apply. However, in order to be considered for a Compiled Preprofessional Evaluation, the student must have a minimum of a 2.8 overall GPA and at least 45 quarter hours of typical undergraduate preprofessional courses taken at UCF by the end of the Spring Quarter preceding his application to the professional school. Additionally, during the first week of every term, each preprofessional student must register with the Office of the Preprofessional Coordinator his or her interest to begin or continue participation in the preprofessional program. Finally, all preprofessional students are strongly encouraged to affiliate with and participate in the activities of the Preprofessional Medical Society (VC 226).

## PREPROFESSIONAL PLANNING

Although many professional schools accept students who have satisfactorily completed two or three years of college and possess excellent credentials, a large and growing number require the completion of the baccalaureate degree. In any event, the applicant with given credentials and in possession of the baccalaureate degree by the time of anticipated admission will find himself in a much more competitive position for a place in a professional school than a comparable applicant not in possession of the degree. For this reason each preprofessional student is urged to choose a degree-granting program for a major since majors such as "premed" do not lead to the awarding of a degree. Also, each student is encouraged to pursue a degree program to prepare himself for an alternate career in the event he is denied a place in a professional school. The prospective preprofessional student may select as his major any degree-granting program offered at University of Central Florida; however, those degree programs within the College of Natural Sciences will lend themselves most easily to the preprofessional preparation due to the nature and content of their curricula. While satisfying his degree requirements, the student will find in his curriculum many courses that are also admission requirements to most professional schools. In addition he will find in his curriculum adequate elective hours which will permit him to obtain other courses required for admission to a professional school but not specifically contained within the curriculum of his degree program.

Obviously, preprofessional students are expected to be high achievers, to obtain good grades with heavy loads and rigorous course combinations. Most professional schools expect applicants to present at least a B average and to carry a minimum of 15 credit hours every term they are enrolled.

Concerning required courses, all preprofessional students are required to complete the Basic Environmental Studies Program (BESP) plus the following courses, many of which are applicable to the BESP:

- General biological sciences, BSC 1010C, ZOO 1010C
- Genetics, PCB 3063C
- General Chemistry, CHM 2045, 2406, 2047, 2046L, 2120C
- Organic chemistry, CHM 3210, 3211, 3212, 3211L
- Microbiology, MCB 2013C
- English composition, ENC 1103, 1135, 3355
- Analytic geometry, MAC 2154
- Calculus, MAC 3233 (although MAC 3233 is acceptable, the MAC 3311, 3312, 3313 sequence is preferable)
- Physics, PHY 2050C, 2051C 2052C (although the preceding courses are acceptable, the sequence PHY 2040, 2041C, 2042C is preferable)
- Statistics, STA 3023

Furthermore, additional required/strongly recommended courses not common to *all* preprofessional students are the following:

*Premedical and predental* students should take

- Cell physiology, PCB 3203C
- Comparative anatomy, ZOO 3713C, 3714C
- Embryology, ZOO 4603C

Microbiology, MCB 3030C, 3203C and PCB 3233  
Analytical chemistry, CHM 3121C, 3122C, plus either (or both) Bio-chemistry, CHM 4053, 4054, 4055, or Physical Chemistry, CHM 3410.

Physics of Scientific Instruments, PHY 3752C.

*Preoptometry students must take*

General botany, BOT 1010C

Microbiology, MCB 3030C and it is *strongly recommended* they take Human Anatomy and/or Human Physiology, ZOO 3733, 3703C and Physics of Scientific Instruments, PHY 3752C.

*Prepharmacy students must take*

General botany, BOT 1010C

Microbiology, MCB 3030C and it is *strongly recommended* they take Microbiology, 3203C

Physics of Scientific Instruments, PHY 3752C.

*Preveterinary students must take*

General botany, BOT 1010C

Analytical chemistry, CHM 3121C

Microbiology, MCB 3030C

Animal Science, these courses to be taken as a transient student at the University of Florida, preferably during the summer following the sophomore year.

Additionally, the UCF courses Equine Management (PEM 3663C) and Physics of Scientific Instruments (PHY 3752C) are strongly recommended.

All preprofessional students are strongly encouraged to make prudent selections of elective courses complementary to their preprofessional preparation. Listed below are a number of appropriate courses from which elective selections can be made.

Accountancy: ACC 2304 and 2324, or ACC 3003.

Communications: SPC 3301 or 4330.

Health Sciences: APB 3600; HSC 3328, 4302, 4411; SPA 3301.

Literature: LIT 3240 and 3257.

Management: GEB 3004.

Political Science: PUP 4602.

Psychology: CLP 3143; DEP 3004, 3202, 3212; EAB 3703; GEY 3610; PSB 3002, 3442, 4013C.

Sociology: SOC 3020, 3110, 3161, 3251, 4160, 4230; SOW 3203 and 3225 or 3602.

Various nationally standardized examinations are required of applicants as a part of the admissions process to the professional schools [dentistry-DAT; medicine-MCAT; optometry-OCAT; pharmacy-PCAT; podiatry-MCAT; veterinary medicine-GRE]. These examinations are generally offered twice each year: in the spring and fall. Preprofessional students are advised to take the appropriate examination in the *spring* preceding application to the professional school rather than waiting for the fall examination.

Publications of special interest and usefulness to preprofessional students include the following:

1. *Admission Requirements of U.S. and Canadian Dental Schools*, published by the American Association of Dental Schools;
2. *Medical School Admission Requirements, United States and Canada*, published by the Association of American Medical Colleges;
3. *The Education of Osteopathic Physicians*, published by the American Association of Colleges of Osteopathic Medicine;
4. *Information for Applicants to Schools and Colleges of Optometry*, published by the Association of Schools and Colleges of Optometry;
5. *Pharmacy School Admission Requirements*, published by the American Association of Colleges of Pharmacy;
6. *American Schools and Colleges of Veterinary Medicine*, by John Mangiameli.

Each preprofessional student is encouraged to obtain a copy of the publication appropriate to his preprofessional area. These publications are usually available in the University bookstore.

Those students who successfully gain admission to a professional school after the completion of the junior year of a degree program within the College of Natural Sciences at the University of Central Florida may apply for a Bachelor of Science degree after successfully completing the first year of study (not less than 45 quarter credit hours) with a grade point average of "C" or better at an approved professional school. Following completion of the first year of a professional study, the student should request the dean of the professional school to forward to the Dean of the College of Natural Sciences at the University of Central Florida a transcript of credits and a recommendation that the degree be conferred.





# COLLEGE OF NATURAL SCIENCES GRADUATE PROGRAMS

Graduate programs leading to a Master of Science degree are available in Biological Science, Computer Science, Industrial Chemistry, and Mathematical Science.

## MASTER OF SCIENCE: BIOLOGICAL SCIENCE

**Program Coordinator:** *F. Snelson*, BL 203, Phone 275-2144

The Department of Biological Sciences offers graduate work with research and courses in biology, botany, limnology, microbiology and zoology under three options: (1) Biological Sciences Thesis, (2) Biological Sciences Nonthesis, and (3) Microbiology Thesis. A majority of the graduate level courses are offered in late afternoon or evening to better serve the working student.

### Admission Requirements

1. University Admission requirements  
(See pages 34 and 60)

2. Program Admission requirements

Admission is based on the applicant's potential to achieve academic success and become a productive scholar, teacher or research investigator in the Biological Sciences as determined by: letters of recommendation; past research and academic records; GRE verbal and quantitative scores; and applicant's statement of immediate and long range goals. Personal interviews are helpful but are not required. Applicants need not have an undergraduate degree in the Biological Sciences but are expected to have the equivalent of 12 quarter hours credit in biology, 4 in botany, 8 in organic chemistry, 4 in microbiology, 4 in zoology, plus basic college mathematics and statistics.

### Degree Requirements

1. University Graduate Requirements

See the current UCF Graduate Procedures Manual available in the Office of Graduate Studies

2. Prerequisites: as specified above under Admissions Requirements plus any background deficiencies as determined by advisor or committee.

3. Core Courses: The following courses are required.

BSC 6406C	Field Methods for Biology	3 hours
	or	
BSC 6407C	Laboratory Methods for Biology	5 hours
PCB 6206	Molecular Biology	3 hours
PCB 6585C	Genetic Mechanisms	
	or	
PCB 6426C	Population Ecology	5 hours
BSC 6938	Graduate Seminar	3 hours

4. Restricted Electives: Varies with option (see Area of Specialization).
5. Thesis/Research report: Varies with option (see Area of Specialization)  
9-3 hours.
6. Examinations: Final oral exams covering (a) course work, general comprehension in biology and (b) thesis research and results.

Total Quarter Hours Required

Thesis Option	45
Nonthesis Option	54

### AREAS OF SPECIALIZATION (OPTIONS)

Students must select one of the following three options.

1. Biological Sciences Thesis Option

Required courses beyond core:

Group A (5 hours—one course)

PCB 6584C	Genetic Mechanisms	5 hours
PCB 6426C	Population Ecology	5 hours

Group B (17 hours—All courses)

PCB 5675	Evolutionary Biology	3 hours
PCB 6746C	Organismal Physiology	5 hours
PCB 6971	Biology Thesis	9 hours

Group C (Restricted Electives—minimum of 7 hours)

Additional coursework acceptable to the student's graduate committee.

2. Biological Sciences Nonthesis Option

Required courses beyond core:

Group A (5 hours—one course)

PCB 6585C	Genetic Mechanisms	5 hours
PCB 6426C	Population Ecology	5 hours

Group B (14 hours—All courses)

PCB 5675	Evolutionary Biology	3 hours
PCB 6918	Biology Research Report	3 hours
BOT 5705C	Plant Biosystematics	5 hours
MCB 5205	Infectious Process	3 hours

Group C (4-5 hours—one course)

ZOO 5206C	Aquatic Invertebrates	5 hours
ZOO 5463C	Herpetology	4 hours
ZOO 5475C	Ornithology	4 hours
ZOO 5483C	Mammalogy	4 hours

Group D (Restricted Electives—minimum of 14-17 hours)

Additional coursework acceptable to the student's graduate advisor with at least 6 hours of Biological Sciences graduate level courses.

3. Microbiology Thesis Option

Required courses beyond core:

Group A (24 hours—All courses)

APB 5581C	Applied Microbiology	4 hours
MCB 5205	Infectious Process	3 hours

MCB 5505C	Virology	4 hours
MCB 6417	Microbial Metabolism	4 hours
MCB 6971	Microbiology Thesis	9 hours

Group B (Restricted Electives—minimum of 5 hours)  
Additional coursework acceptable to the student's graduate committee.

## MASTER OF SCIENCE: INDUSTRIAL CHEMISTRY

**Program Coordinator:** *G. Hertel*, SC 325, Phone 275-2246

The Department of Chemistry offers graduate work leading to the Master of Science in industrial Chemistry. This program is aimed particularly at preparing a student for a career in the chemical industry or in related industries which utilize chemical processing techniques. The primary emphasis is upon chemistry and the application of the theoretical principles of chemistry to the development of products and processes.

### ADMISSION REQUIREMENTS

- University Admission Requirements  
(See pages 34 and 60)
- Program Admission Requirements
  - Baccalaureate degree from an accredited institution
  - Departmental evaluation based upon
    - Transcripts
    - Letters of recommendation
    - Proficiency examinations which may be required. (Results may be used to aid in planning the student's program of study. Deficiencies may require remedial course work.)

### Degree Requirements

- University Graduate Requirements  
See the current UCF Graduate Procedures Manual available in the Office of Graduate Studies.
- Prerequisites: See admission requirements above.
- Core Courses: The following courses are required.
 

CHM 5710,	Chemical Structure I and II	6 hours
CHM 5711		
CHS 5240,	Chemical Dynamics I and II	6 hours
CHS 5241		
CHS 5250,	Chemical Synthesis I and II	6 hours
CHS 5251		
CHS 6260C	Separation Processes	3 hours
CHS 6261	Chemical Processes	3 hours
CHS 6262C	Process Kinetics and Control	3 hours
CHS 6263	Chemical Process Economics	2 hours
- Restricted electives: Selected courses in business, computer science, engineering and statistics in keeping with the student's particular needs, interests and background and as approved by the advisory committee.

5. Research:  
 CHM 6918 Research (A Research Report is required) 13 hours
6. Examinations: Satisfactory completion of a comprehensive examination is required.

Total Quarter Hours Required 45

## MASTER OF SCIENCE: COMPUTER SCIENCE

Program Coordinator: T. Frederick, FA 461, Phone 275-2341

The Department of Computer Science offers an M. S. degree in Computer Science with emphasis in the areas of programming systems/languages, information systems, computer architecture, and computational methods. The "hands on" use of our computer laboratories is strongly encouraged. A majority of the graduate level courses are offered in the evening to better serve the working student.

### ADMISSION REQUIREMENTS

1. University Admission Requirements  
 (See pages 34 and 60)
2. Program Admission Requirements

Admission to regular graduate student status in Computer Science must be approved by the Graduate Committee in Computer Science. An undergraduate degree in Computer Science is desirable but not required. Applicants without a strong undergraduate background in Computer Science will be required to demonstrate an understanding of the material covered in COP 4530, COP 4550, COP 4620, CDA 4102, COT 4001, and CNM 4110; i.e., take the deficient courses, score well on the advanced GRE in Computer Science. Applicants not qualified for regular status will be initially admitted to the University in a post-baccalaureate status. While in this latter classification, students may not take 6000-level courses in Computer Science.

### Degree Requirements

1. University Policies and Procedures  
 See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.
2. Prerequisites: See Admission requirement above.
3. Core Course: The following courses are required
 

COP 5613	Operating System Design Principles	4 hours
CIS 5012	Information and File Systems	4 hours
CDA 5106	Analysis of Computer Architecture	4 hours
CNM 5142	Computational Methods/Linear Systems	4 hours
4. Restricted Electives:
 

a. Two courses within a single area of specialization	8 hours
b. One course from a second area of specialization	4 hours

5. Thesis and Research Report:
  - a. CAP, CDA, CIS, CNM, COC, COP, COT 6918 Research Report 4 hours
  - b. CAP, CDA, CIS, CNM, COC, COP, COT 6971 Thesis (up to) 9 hours
6. Examinations:
  - Oral defense of Thesis or Research Report.
  - Total Quarter Hours Required 45
  - Thesis Option (Course requirements) 36 hours
  - Non-Thesis Option (Course requirements) 41 hours

## AREAS OF SPECIALIZATION

1. Computational Methods (CNM 6144, 6145, STA 6807)
2. Computer Organization and Architecture (CDA 6107\*, CAP 6723, CDA 6166, CDA 6108)
3. Information Systems (CIS 5041, 6122, 6124)
4. Programming Systems and Languages (COP 6555, 6614, 6642, 6615, 6643)

\*This course must be taken if this is the major area of specialization.

## MASTER OF SCIENCE: MATHEMATICAL SCIENCE

**Program Coordinator:** L. Andrews, FA 453, Phone 275-2341

The masters program in Mathematical Science is an interdisciplinary program intended to provide a broad base in *applied mathematics, statistics* and *computer science*. The emphasis throughout the program is on the use of the techniques of mathematical science in the formulation and solution of mathematical models encountered in the physical and life sciences, engineering and business. The program is offered entirely in the evening hours to accommodate the working student. A limited number of graduate teaching and research assistantships are available for qualified students.

### Admission Requirements

1. University Admission Requirements  
(See pages 34 and 60)

2. Program Admission Requirements

Students entering the graduate program with regular status are assumed to have a working knowledge in such areas as calculus, differential equations, linear algebra (or matrix theory), statistics and computer programming at the undergraduate level. Those students who find they are not adequately prepared in one or more of these areas can select appropriate courses from the undergraduate curriculum to make up such deficiencies. Applicants not qualified for regular status will be initially admitted to the University in a post-baccalaureate status.

### Degree Requirements

1. University Graduate Policies and Procedures

See the current UCF Graduate Procedures Manual available in the Office of Graduate Studies.

2. Prerequisites: See admission requirements above.

3. Required Courses:

A minimum of 36 quarter hours of coursework meeting the following requirements must be taken:

The courses chosen must include graduate level mathematics, statistics and computer science courses which are approved by the student's committee. Suggested mathematics courses for meeting this requirement are:

MAA 5211	Advanced Calculus I	3 hours
MAA 6212	Advanced Calculus II	3 hours
MAA 5405	Techniques of Complex Variables	4 hours
MAP 6406	Methods of Mathematical Analysis I	4 hours
MAP 6407	Methods of Mathematical Analysis II	4 hours

Suggested statistics courses for meeting this requirement are:

STA 5156	Probability for Engineers	3 hours
STA 5326	Statistics for Engineers	3 hours
STA 6807	Computational Methods/Stochastic Systems	4 hours
STA 5206	Statistical Analysis	3 hours
STA 5707	Multivariate Statistical Methods	4 hours

Suggested computer science courses for meeting this requirement are:

CNM 5142	Computational Methods/Linear Systems	4 hours
CNM 6144	Computational Methods/Analysis I	4 hours
CNM 6145	Computational Methods/Analysis II	4 hrs

4. Restricted Electives

Electives may be chosen from approved mathematics, statistics or computer science courses which are taught by the Department of Mathematics and Statistics or the Department of Computer Science. Graduate courses outside these departments may also be used if approved by the student's committee.

5. Thesis or Research Report 3-9 hours

Anywhere from 3 to 9 quarter hours of credit may be given for the writing of a paper on some appropriate topic. Ordinarily a paper which is of sufficient magnitude to justify awarding more than 5 hours of credit is considered a thesis. Otherwise it is considered a research report.

6. Examinations

a. A written and/or oral comprehensive examination over the core courses will be administered by the student's advisory committee. The form and nature of the examination(s) are at the discretion of the advisory committee.

b. An oral defense of the thesis will be required of those students who elect to write a thesis.

Total Quarter Hours Required	45
Thesis Option	36 (Course requirements)
Non-Thesis Option	40 (Course requirements)

# COLLEGE OF SOCIAL SCIENCES

## UNDERGRADUATE PROGRAMS

- Allied Legal Services (BA)
- Anthropology (BA)
- Communication (BA)
- Criminal Justice (BA)
- Economics (BA)
- Film (BA)
- Journalism (BA)
- Political Science (BA)
- Psychology (BA)
- Public Administration (BA)
- Radio-Television (BA)
- Social Sciences (BS)
- Social Work (BA)
- Sociology (BA)
- Speech (BA)

## GRADUATE PROGRAMS

- Clinical Psychology (MS)
- Communication (MA)
- Industrial Psychology (MS)
- Public Policy (MPP)

# COLLEGE OF SOCIAL SCIENCES

**Acting Dean:** *J. Rollins*, CB 202, Phone 275-2291

**Assistant to the Dean:** *L. Tanzi*, CB 303, Phone 275-2492

In keeping with the aims of the University of Central Florida, the College of Social Sciences provides curricula designed: (1) to develop competence in specialized professional disciplines through academic and practical preparation; (2) to provide increased awareness of the development, purposes, and functioning of the social sciences in the world that surrounds us. The College awards the baccalaureate degree with majors in the following areas: Allied Legal Services, Communication, Criminal Justice, Economics, Film, Journalism, Political Sciences, Psychology, Public Administration, Radio-Television, Social Sciences, Social Work, Sociology, and Speech. The College also awards the Masters Degree in Communication, Psychology, and Public Policy.

In addition to providing specialized training, the College of Social Sciences functions in a service capacity by making available a selection of courses designed to complement the offerings of the other six colleges of the University.

A student enrolled in the college as an undergraduate must fulfill all University degree requirements including the Environmental Studies Program, as well as the particular requirements set forth by the department for each

area of specialization. To be certified for graduation, a student must achieve at least a "C" grade point average (2.0) in the courses of his major.

A student whose written or oral communication in any course is deemed unsatisfactory may be referred to the Dean by the instructor. Additional course work or an individual study program may be assigned consistent with the needs of the student and must be completed before the degree is granted.

## **MINOR**

The College of Social Sciences and the College of Humanities and Fine Arts jointly offer a minor in Afro-American Studies consisting of a minimum of 24 quarter hours. Required courses: AMH 3570, ENG 4574, LIT 4324, SOC 3720. The student should be advised by the Program advisor prior to registration.

## **AEROSPACE STUDIES**

**Chairman:** *L. Samelson*, CB 310, Phone 275-2264

**Faculty:** *Diller, Korose, White*

The Department of Aerospace Studies provides pre-commissioning education for qualified students who desire to serve as commissioned officers in the active duty Air Force. The department offers both the four-year and two-year Air Force ROTC programs. The four-year program provides on-campus study during the freshman through senior years. The two-year program allows community college transfer students and other students with two academic years remaining in either undergraduate or graduate status to earn an Air Force commission while completing their studies. Both programs offer scholarships for selected students. Students are invited to write or visit the Department of Aerospace Studies to obtain additional information.

## **CURRICULUM**

Students enrolled in the Air Force ROTC program may major in any academic discipline and earn a minor in Aerospace Studies. A major is not offered by this department. AFROTC courses are listed under the prefix AFR. The curriculum is divided into two phases:

### **1. General Military Course (GMC)**

The General Military Course consists of the freshman and sophomore courses for students in the four-year AFROTC program. These courses deal with the mission, organization, and structure of the U. S. Air Force, and the development of air power into a prime element of American national security.

### **2. Professional Officer Course (POC)**

The Professional Officer Course consists of Aerospace Studies offered during the junior and senior years. The POC must be completed by all students who seek a commission through the Air Force ROTC. The curriculum involves the study of concepts of leadership and management in the Air Force and an analysis of the formulation and implementation of American defense policy.



## **REQUISITES FOR ADMISSION TO THE PROFESSIONAL OFFICER COURSE (POC)**

1. Be at least 17 years of age at the time of acceptance.
2. Be able to complete the Professional Officer Course and complete all degree requirements prior to reaching age 26 years and 6 months if entering Flight Training or before age 30 if entering a non-flying Air Force specialty. (Age 35 for individuals with prior military service).
3. Pass the Air Force Officer Qualifying Test.
4. Pass an Air Force medical examination.
5. Complete the application and examination process, preferably prior to January 15 of the year in which they plan to enroll.
6. Selection by the Professor of Aerospace Studies and acceptance by the University.
7. Successful completion of a summer Field Training Course.
8. Enlistment in the Air Force Reserve certifying agreement to complete the POC and accept an Air Force Commission. This enlistment is terminated upon receipt of a commission.

## **MONETARY ALLOWANCE**

All students enrolled in the Professional Officer Course receive a tax-free monetary allowance of \$100 per month.

## **AIR FORCE ROTC SCHOLARSHIP PROGRAM**

Scholarships are available for qualified students in both the four-year and two-year AFROTC programs. These scholarships provide for full tuition, fees and required textbooks. In addition, scholarship recipients receive \$100 per month.

## **SUMMER TRAINING**

All students must attend a summer Field Training course conducted at an Air Force base. This course includes junior officer training, officer career orientation, and physical conditioning. Students enrolled in the four-year AFROTC program will attend a four-week summer course, normally upon completion of the General Military Course, and they will receive approximately \$360. A six-week summer course, which includes a modified version of the General Military Course, is required for students entering the two-year AFROTC program. These students must complete their summer training prior to their formal enrollment in the Professional Officer Course. Students who complete the six-week course receive approximately \$580.

## **FLIGHT INSTRUCTION PROGRAM**

Students enrolled in the Professional Officer Course who have been selected for pilot training in the United States Air Force receive 40 hours of classroom instruction and 25 hours of civilian flight training in light aircraft.

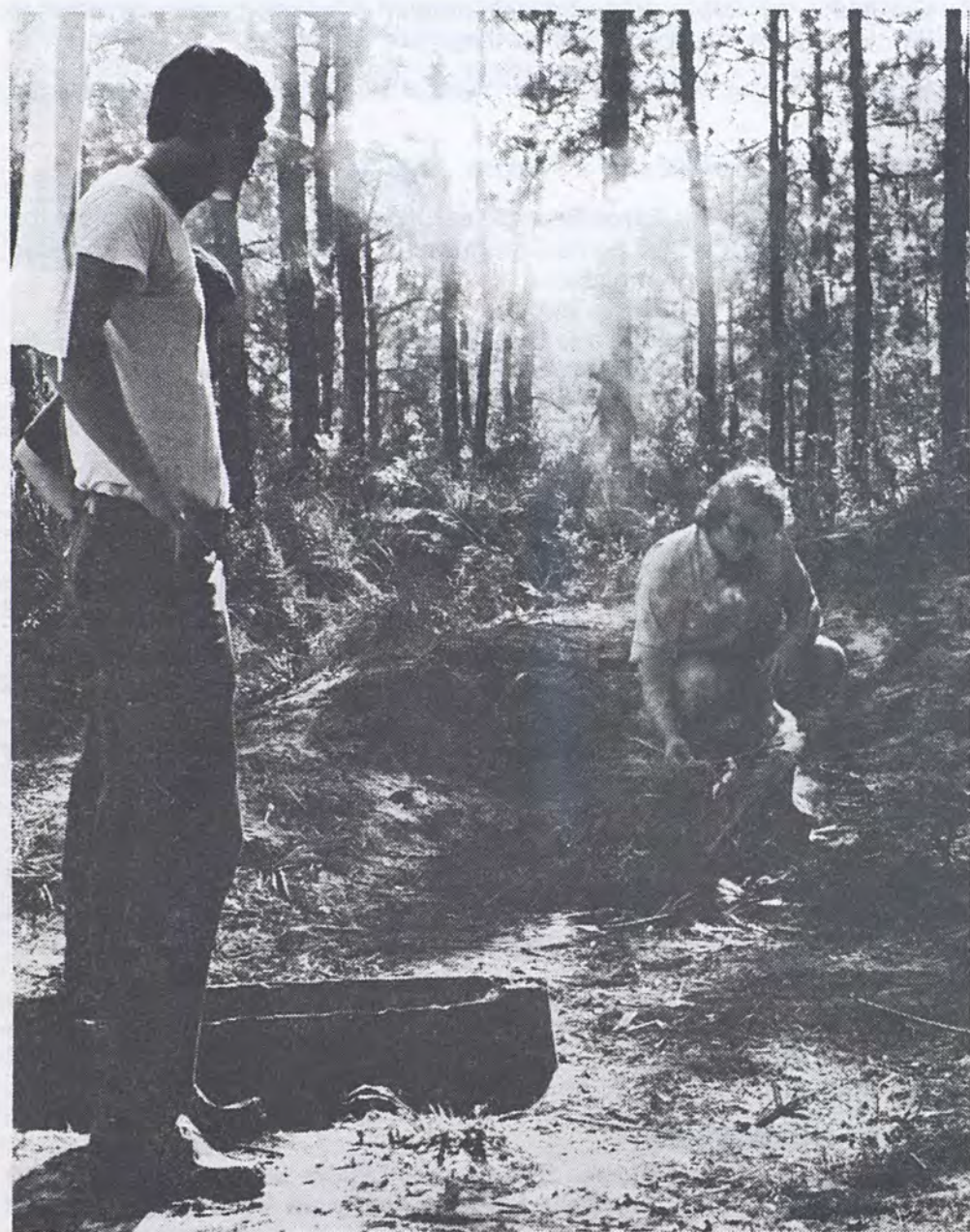
## **OFFICER COMMISSIONS**

Students who complete the Professional Officer Course are appointed Second Lieutenants in the United States Air Force Reserve. As reserve

officers, they incur an obligated active duty tour of four years (non-flying) or six years (navigator) or seven years (pilot). During this period of active service, they are given the opportunity to attain career status and to obtain a regular commission in the United States Air Force.

## **MINOR**

The Department of Aerospace Studies offers a minor consisting of a minimum of 24 quarter hours. Required courses: AFR 1101C, AFR 1111C, AFR 1120C, AFR 2130C, AFR 2131C, AFR 2104C, AFR 3220C, AFR 3230C, AFR 3231C, AFR 4201C, AFR 4210C, AFR 4211C.



## **ARMY ROTC—MILITARY SCIENCE**

**Chairman:** *A. L. Wehrle*, Phone 275-2430

**Faculty:** *Howell, Johnson, LaFrance, Levaas, Milby*

The University of Central Florida, in cooperation with the Army ROTC Program at Stetson University provides an opportunity to acquire the skills and knowledge necessary for commissioning as a lieutenant in the U.S. Army, U.S. Army Reserve or the National Guard. The program offers both a four year and two year option. The two year option allows students with at least two academic years remaining in either undergraduate or graduate studies to meet all requirements for commissioning.

### **CURRICULUM**

The Military Science curriculum is divided into three phases:

#### **1. Basic Military Science**

The Basic Military Science courses are designed for four year participants and are normally offered during the freshman and sophomore years. These courses address military organization, equipment, weapons, map readings, land navigation, use of a compass, grade structure, the Threat, communications, and leadership.

#### **2. Advance Military Science**

The Advanced Military Science courses are normally taken during the junior and senior years. These courses specialize in small unit tactics, how to prepare and conduct military training, military justice system, staff procedures, decision making and leadership.

#### **3. Summer Camp**

Prior to commissioning each cadet must successfully complete an evaluation of the skills learned. This evaluation is conducted at Ft. Bragg, North Carolina during June and July. Summer Camp requirements apply only to Advanced Military Science students.

### **SUMMER TRAINING**

A summer training program is offered for students who are academic juniors without previous ROTC or military training. Two options are available for summer training:

1. A five week course, on-campus.
2. A six week course at Ft. Knox, Kentucky.

Either summer option will qualify a student for entry into the Advanced Course, thus allowing completion of all requirements for commissioning within two years. Students attending the summer course at Ft. Knox will receive approximately \$500 pay for the period.

### **MONETARY ALLOWANCE**

All students enrolled in the Advanced Military Science Course receive a tax-free monetary allowance of \$100 per month.

### **SCHOLARSHIPS**

Scholarships are available to qualified ROTC students. These scholarships provide full tuition, fees and required textbooks. Additionally, scholarship recipients receive \$100 (tax free) per month.

## **REQUISITES FOR ADMISSION TO THE BASIC COURSE**

1. Enrollment in a Baccalaureate or Masters degree program.
2. 18 years of age at the time of entry but not more than 28 years of age at the time of graduation.
3. U.S. citizenship.

## **REQUISITES FOR ADMISSION TO THE ADVANCED COURSE**

1. Successful completion of Basic Course or equivalent.
2. Successful completion of an Army officer qualifying test.
3. Successful completion of an Army physical examination.
4. Selection by the PMS.
5. Agreement to complete the Advanced Course requirements and serve on active, reserve, or national guard duty as a commissioned officer.

## **DEPARTMENT OF COMMUNICATION**

**Chairman:** *R. Buchanan*, FA 234B, Phone 275-2681

**Faculty:** *Arnold, Butler, Davis, Fedler, Hall, Hightower, Hoglin, Johnson, Kissel, Meeske, Morgan, O'Keef, Pryor, Tanzi, Taylor, Wycoff*

The Department of Communication offers degree programs both in general communication and in specialization areas within the discipline of communication. Bachelor of Arts programs are available in communication, film, journalism, radio-television and speech communication.

An internship program is available to qualified students. This program earns elective credit only and cannot be applied to the major requirement of 60 hours, unless specified in the major or minor requirement.

Any student contemplating graduate study should be aware of special requirements in some graduate schools, such as foreign languages, statistics and computer programming.

**Communication Proficiency:** Students will be required to attain a satisfactory score on a departmental test encompassing grammar, punctuation, spelling and word usage. Additional information is available from faculty advisors.

### **MINOR**

The Department of Communication offers the following minors consisting of a minimum of 24 quarter hours in each minor:

1. Film.  
Required courses: FIL 3400, RTV 3310, RTV 4312, RTV 4311, MMC 4200; and either RTV 3000 or JOU 3600.
2. General Communication.  
Required courses: COM 3311 and 20 quarter hours from the remaining courses SPC 3425, SPC 4440, SPC 4330, COM 3110, SPC 3445, SPC 4540, COM 3120.
3. Organizational Communication.  
Required courses: COM 3110, SPC 3445, SPC 3301, SPC 3425, SPC 4330, COM 3120.

4. Journalism: Advertising Sequence.  
Required courses: JOU 3100, ADV 4000, ADV 4300, ADV 4101, ADV 4003, COM 3110.
5. Journalism: News Editorial Sequence.  
Required courses: JOU 3100, JOU 3101, JOU 3200, JOU 4104, MMC 4200, and MMC 4602.
6. Journalism: Public Relations Sequence.  
Required courses: JOU 3100, 3101, 3600; PUR 4000, 4800, 4401.
7. Radio-TV.  
Required courses: RTV 3200, 3000, 4700, 4402; choose one—RTV 3210, 3220, 3310; choose one—RTV 3300, 3501.
8. Speech Communication.  
Required courses: COM 3311 and 20 quarter hours from the remaining courses ORI 2001, SPC 3511, SPC 3601, SPC 3605, SPC 3250, SPC 3542, SPC 3301, SPC 4330, SPC 3425.

## **BACHELOR OF ARTS: COMMUNICATION**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 197 and 202)
3. Required courses
 

COM 3311	Communication as a Behavioral Science	4 hours
SPC 4300	Non-verbal Communication	4 hours
SPC 4540	Attitudes and Communication	4 hours
4. Restricted Electives  
Forty-eight (48) quarter hours of Communication Department courses including completion of one of the two areas of specialization listed below.
5. Electives
 

	<b>Total Quarter Hours Required</b>	<b>180</b>
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### **AREAS OF SPECIALIZATION**

1. General Communication Requirements
 

COM 3301	Interpersonal Communication	4 hours
SPC 3452	Persuasion	4 hours
SPC 3425	Group Interaction	4 hours
MMC 4200	Legal Responsibilities	4 hours

Select 4 hours from history:

RTV 3000	Foundations of Broadcasting	4 hours
JOU 3003	History of American Journalism	4 hours
MMC 4602	Social Responsibility of Mass Media	4 hours
SPC 4200	Evolution of Communication Theory	4 hours
SPC 4651	Rhetoric of Soc and Pol Action	4 hours

Select 8 hours from motivation:

MMC 4610	Propaganda and Psychological Warfare	4 hours
PUR 4000	Public Relations	4 hours
ADV 4000	Principles of Advertising	4 hours
RTV 4402	Broadcast Criticism	4 hours
SPC 3250	Speech and Human Relations	4 hours

Select 8 hours from research:

MMC 4609	Opinion and the Mass Media	4 hours
SPC 4440	Group Dynamics	4 hours
SPC 4350	Studies in Listening	4 hours
COM 4918	Research Planning	4 hours

2. Organizational Communication Requirements

COM 3110	Business and Professional Communication	4 hours
SPC 3445	Leadership	4 hours
SPC 3425	Group Interaction	4 hours
SPC 4440	Group Dynamics	4 hours
SPC 4350	Studies in Listening	4 hours
SPC 3301	Interpersonal Communication	4 hours
COM 3120	Organizational Communication	4 hours
PUR 4000	Public Relations	4 hours

**BACHELOR OF ARTS: Film (RTV)**

**Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)

2. Special college and/or department requirements  
(See pages 197 and 202)

3. Required courses

COM 3311	Communication as a Behavioral Science	4 hours
RTV 3000	Foundations of Broadcasting	4 hours
RTV 3200	Broadcast Techniques	4 hours
FIL 3400	History of Motion Picture	4 hours
JOU 3600	Press Photography I	4 hours
RTV 3310	Filming for TV	4 hours
RTV 4312	TV Film Production	4 hours
RTV 4311	TV Film Documentary	4 hours
MMC 4200	Legal Responsibilities	4 hours
RTV 3220	TV Production	4 hours
RTV 4403	RTV and Society	4 hours

4. Restricted Electives

Sixteen (16) hours from Communication  
Department offerings

5. Electives

Total Quarter Hours Required

180

## **BACHELOR OF ARTS: Journalism**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 197 and 202)
3. Required courses

COM 3311	Communication as a Behavioral Science	4 hours
JOU 3100	Basic Reporting	4 hours
JOU 3101	News Reporting	4 hours
ADV 4000	Principles of Advertising	4 hours
MMC 4602	Social Responsibilities of the Mass Media	4 hours
MMC 4200	Legal Responsibilities of the Mass Media	4 hours
4. Restricted Electives  
Students must select and complete one of the areas of specialization and earn twelve (12) additional hours of JOU courses beyond those specified in the area of specialization.

5. Electives

Total Quarter Hours Required 180

### **AREAS OF SPECIALIZATION**

1. News-Editorial Sequence

JOU 3200	Copy Editing	4 hours
JOU 3202	Advanced Editing	4 hours
JOU 3600	Photojournalism I	4 hours
JOU 4104	Public Affairs Reporting	4 hours
JOU 4300	Feature Writing	4 hours
JOU 3003	History of American Journalism	4 hours
2. Advertising Sequence

PUR 4000	Public Relations	4 hours
ADV 4300	Advertising Media	4 hours
ADV 4101	Advertising Copy	4 hours
ADV 4801	Advertising Campaigns	4 hours
ADV 4003	Advertising Layout and Preparation	4 hours
COM 3110	Business and Professional Communication	4 hours
3. Public Relations Sequence

JOU 3200	Copy Editing	4 hours
JOU 3600	Photojournalism I	4 hours
PUR 4000	Public Relations	4 hours
PUR 4800	Public Relations Campaign	4 hours
PUR 4101	Publications Layout and Preparation	4 hours
COM 3110	Business and Professional Communication	4 hours

## BACHELOR OF ARTS: Radio-Television

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
  2. Special college and/or department requirements  
(See pages 197 and 202)
  3. Required courses

COM 3311	Communication as a Behavioral Science	4 hours
RTV 3200	Broadcast Techniques	4 hours
RTV 3000	Foundations of Broadcasting	4 hours
RTV 4403	R/TV and Society	4 hours
RTV 4700	Broadcast Regulations	4 hours
RTV 4402	Broadcast Criticism	4 hours
RTV 4800	Broadcast Management	4 hours
MMC 4200	Legal Responsibilities	4 hours
JOU 3100	Basic Reporting	4 hours
  4. Restricted Electives:

Production—Choose one		
RTV 3210	Radio Production	4 hours
RTV 3220	Television Production	4 hours
RTV 3310	Filming for TV	4 hours
Writing—Choose one		
RTV 3300	Broadcast Journalism I	4 hours
RTV 3501	Broadcast Community and Prog. I	4 hours
- Sixteen (16) additional hours selected from Communication Department offerings.
5. Electives
- Total Quarter Hours Required      180





## **BACHELOR OR ARTS: Speech**

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 197 and 202)

#### 3. Required courses

COM 3311	Communication as a Behavioral Science	4 hours
SPC 3301	Interpersonal Communication	4 hours
SPC 3542	Persuasion: Motivation	4 hours
SPC 3511	Argumentation & Debate	4 hours
SPC 3425	Group Interaction	4 hours
SPC 3605	Speech Composition	4 hours
SPC 3250	Speech and Human Relations	4 hours
SPC 3601	Platform Speaking	4 hours
SPC 4330	Non-verbal	4 hours

#### 4. Restricted Electives:

Select 8 hours from research area:

SPC 3445	Leadership	4 hours
SPC 4440	Group Dynamics	4 hours
SPC 4540	Attitudes and Communication	4 hours
SPC 4350	Studies in Listening Research Planning	4 hours

Select 5-6 hours from Rhetoric:

SPC 4651	Rhetoric of Soc. and Pol. Action	4 hours
ORL 2001	Interpretation I	3 hours
SPC 3410	Parliamentary Procedure	2 hours
LIN 2200	English Phonetics and American Dialects	5 hours
SPC 4200	Evolution of Com. Theory	4 hours

Eleven (11) additional hours from Communication Department offerings

#### 5. Electives

Total Quarter Hours Required 180

## **MAJOR IN ECONOMICS**

**Contact Person:** J. Rollins, CB 202, Phone 275-2293

The Bachelor of Arts Program is designed to permit greater flexibility in course selection to the Economics major not planning a career in business. Although all economics courses are offered and administered by the College of Business Administration, they are available to students majoring in economics in the College of Social Sciences. Successful completion of this program leads to the Bachelor of Arts degree with a major in Economics.

### **Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)

2. Special college and/or department requirements

(See pages 197 and 207)

3. Required courses

ECO 2023	Principles of Microeconomics	4 hours
ECO 2013	Principles of Macroeconomics	4 hours
ECO 3101	Intermediate Price Theory	4 hours
ECO 3203	Intermediate Money, Income, and Employment Theory	4 hours
ECO 3411	Quantitative Methods and Business Decision Analysis	4 hours
ECO 4503	Public Finance in the American Economy	4 hours
ENC 3352	Professional Report Writing I	3 hours
FIN 3233	Money and Banking	4 hours

4. Restricted Electives

- a) ACC 3003 Financial Accounting 5 hours  
or  
ACC 2304 Financial Accounting I 3 hours  
and  
ACC 3233 Financial Accounting II 3 hours
- b) Five courses in ECO or ECP
- c) 36 quarter hours beyond Environmental Studies requirements from Behavioral Sciences, Mathematics, and the Social Sciences.

5. Electives

Total Quarter Hours Required

180

## DEPARTMENT OF POLITICAL SCIENCE

**Chairman:** *H. Kennedy*, LR 260A, Phone 275-2608

**Faculty:** *Bledsoe, Handberg, Jervey, M. Jones, Lilie, Maddox, Smyth, Stern, Whisler*

The discipline of political science deals with the elements of man's political behavior; politics, the study of the diverse institutions, procedures and practices relating to political decision-making; and government, the study of the processes by which political decisions are made operational. Political Science is thus interdisciplinary in its interest and yet segmentally focused into major areas of concern.

Specializations are available in American Political Process and Institutions, Policy Planning and Analysis, International Relations, Comparative Politics, and Political Theory and Behavior.

Although there are no formal language requirements for a political science major, it is strongly recommended that majors planning to continue their education at the graduate level or to pursue a career in international fields acquire a working knowledge of a foreign language.

### MINOR

The Department of Political Science offers minors consisting of a minimum of 28 quarter hours in each minor.

1. Political Science.

Required courses: POS 2041 and two 4000-level courses. In the event a student has taken the varying credit POS 4941, only 4 quarter hours from this course can be used in the minor. Only two Junior College courses (9 quarter hours) will be accepted as part of the minor. Other than these requirements, students may select other Political Science courses with the aid of an advisor. At least 15 quarter hours of the minor must be taken at the upper division level.

2. Political Science/Pre-Law.

Required courses: POS 2041, POS 4284; at least one from INR 4401, INR 4402, POS 4603, or POS 4604. In the event a student has taken the varying credit POS 4941, only 4 quarters from this course can be used in the minor. Only two Junior College courses (9 quarter hours) will be accepted as part of the minor. Other than these requirements, students may select other Political Science courses with the aid of an advisor. At least 15 quarter hours of the minor must be taken at the upper division level.

**BACHELOR OF ARTS: POLITICAL SCIENCE**

**Degree Requirements**

1. University graduation requirements

(See page 47)

2. Environmental Studies Program

(See page 66)

3. Required courses

POS 2041	American National Government	4 hours
POS 3703	Scope and Methods of Political Science	4 hours
	or	
POS 3001	Principles of Political Science	4 hours

4. Restricted Electives

44 quarter hours in the Political Science Department including no less than five courses at the 4000 level. Some remaining elective hours should be taken in such related fields as anthropology, computer science, economics, geography, history, management, mathematics, philosophy, psychology, sociology, or statistics according to the interests of the student and with the concurrence of his advisor. No more than 9 quarter hours toward fulfillment for major requirements will be transferred from community colleges.

5. Electives

Total Quarter Hours Required 180

**AREAS OF SPECIALIZATION**

The departmental courses are divided into five areas of specialization. Students are required to take at least one course in four of the five areas.

1. American Political Process and Institutions

POS 3122	State Government
POS 3443	Political Parties and Processes

- |          |   |
|----------|---|
| POS 3463 | Interest Groups and Political Movements |
| POS 3413 | The American Presidency                 |
| POS 3424 | Congress and the Legislative Process    |
| PUP 3314 | Minorities in American Politics         |
| POS 3235 | Mass Media and Politics                 |
| POS 3233 | Public Opinion                          |
| POS 3273 | Electoral Behavior                      |
| POS 3173 | Southern Politics                       |
| POS 4261 | Political Corruption                    |
| POS 4444 | Political Party Behavior                |
| POS 4246 | Political Socialization                 |
| POS 4603 | American Constitutional Law             |
| POS 4604 | American Constitutional Law             |
| POS 4284 | Judicial Behavior                       |
2. Policy Planning and Analysis
- |          |  |
|----------|--|
| PUP 4323 | Women and Politics                             |
| POS 4142 | Metropolitan Politics                          |
| POS 4155 | Policy Problems of Metropolitan Areas          |
| URP 4026 | The Politics of Planning for Urban Communities |
| PUP 4003 | American Public Policy                         |
| PUP 4503 | Government and Science                         |
| PUP 4602 | Politics of Health                             |
| PUP 5056 | Contemporary American Problems                 |
| POS 4265 | Power and Policy in the United States          |
3. International Relations
- |          |   |
|----------|---|
| INR 3002 | International Relations                     |
| INR 3034 | World Political Geography                   |
| INR 3081 | Contemporary International Politics         |
| INR 4224 | Contemporary International Politics of Asia |
| INR 4274 | International Politics of the Middle East   |
| INR 4244 | Inter-American Politics and Organizations   |
| INR 4102 | American Foreign Policy                     |
| INR 4334 | American Defense Policy                     |
| INR 4502 | International Organizations                 |
| INR 4401 | International Law I                         |
| INR 4402 | International Law II                        |
| INR 4335 | Coercion in International Politics          |
4. Comparative Politics
- |          |  |
|----------|--|
| CPO 3103 | Comparative Politics                           |
| INR 3024 | Nationalism: A Systematic Analysis             |
| CPO 3034 | Politics of Developing Areas                   |
| CPO 3502 | Comparative Asian Politics                     |
| POS 3253 | Contemporary Revolution and Political Violence |
| CPO 4123 | Government and Politics of Great Britain       |
| COP 4643 | Government and Politics of the Soviet Union    |
| COP 4024 | Non-Western Politics                           |
5. Political Theory and Behavior
- |          |                             |
|----------|-----------------------------|
| POT 3304 | Modern Political Ideologies |
| POS 4204 | Political Behavior          |

POT 4003	Political Theory
POT 4314	Contemporary Democratic Theory
POS 4209	Political Sociology
POT 4013	Ancient and Medieval Political Philosophy
POT 4044	Early Modern Political Philosophy
POT 4054	Contemporary Political Philosophy

For students who excel, the Department offers an opportunity to earn up to 10 credit hours during a single quarter in a practical experience situation. Under an internship Director, the student is placed in an office of local, state, or national government, a law office, campaign headquarters or similar loca- i.

### **PRE-LAW: POLITICAL SCIENCE**

While no specific major is prescribed for admission to law school, many pre-law students elect to major in political science. These individuals must conform to all requirements for the Bachelor of Arts in Political Science degree as well as complete the following required core courses for the Political Science—Pre-Law emphasis:

POS 2041	American National Government	4 hours
POS 3703	Scope and Methods of Political Science	4 hours
	or	
POS 3001	Principles of Political Science	4 hours
POS 4603, POS 4604, INR 4401, INR 4402	Any one	4 hours
POS 4284	Judicial Behavior	4 hours
	<b>TOTAL</b>	<b>16 hours</b>

Students are encouraged to work closely with the pre-law advisor in planning their programs. By judicious use of electives, the student not only builds a firm foundation for law school entry, but in addition, acquires a broad vocational training which can result in career options upon graduation.

1. Some suggested electives include:

ACC 3003	Financial Accounting
BUL 3111	Legal Environment of Business
ENC 3352	Professional Reporting Writing I
EUH 2545	Introduction to Anglo-American Law
LEA 3013	Legal Investigation

### **RUSSIAN AREA STUDIES: POLITICAL SCIENCE**

The Department of Political Science in conjunction with the Departments of History, Sociology, Economics, and Foreign Languages offer an interdisciplinary program in Russian Area Studies. A certificate of participation is awarded upon successful completion of prescribed courses. A student with any major may earn the certificate. For further information, contact Dr. Henry Kennedy, LR 260A, phone 275-2608.

## DEPARTMENT OF PSYCHOLOGY

**Acting Chairman:** *R. Tucker*, CB 317, Phone 275-2216

**Faculty:** *Abbott, Blau, Brophy, Burr, Burroughs, Connally, Fisher, Frank, Guest, Jaffee, McGuire, Rollins, Shirkey, Smith, Tell, Thomas, Thompson.*

The undergraduate program provides a general preparation in Psychology with the option to select specialization electives according to student interests. Successful completion of the program leads to the Bachelor of Arts degree with a major in Psychology.

### MINOR

The Department of Psychology offers a minor consisting of a minimum of 28 quarter hours.

Required courses: a minimum of 19 quarter hours of upper level courses and a minimum of 16 quarter hours must be taken at UCF. A maximum of 4 quarter hours may be completed in courses identified as independent study. A maximum of 4 quarter hours of PSY 3951 will apply.



# BACHELOR OF ARTS: PSYCHOLOGY

## Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 197 and 212)
3. Required courses

PSY 2013,	General Psychology	8 hours
PSY 2014		
PSY 3404	Basic Learning Process	5 hours
PSB 3002	Physiological Psychology	4 hours
PSY 3023	Careers in Psychology	2 hours
PSY 4214 <sup>1</sup>	Research Methods	4 hours
4. Restricted Electives
  - a) Any two

SOP 3004	Social Psychology	4 hours
PPE 3003	Personality Theory	4 hours
CLP 3143	Abnormal Psychology	4 hours
DEP 3004	Developmental Psychology	4 hours
  - b) Any one

PSY 3302 <sup>1</sup>	Psychological Measurement	4 hours
PSY 4204 <sup>1,2</sup>	Statistical Methods of Psychology	4 hours
  - c) A total of 20 quarter hours in other courses offered by the Psychology Department taken in accordance with the student's interests and career goals and with the consent of advisor.
5. Electives

Total Quarter Hours Required 180

<sup>1</sup>Has prerequisite of STA 2014 or equivalent

<sup>2</sup>Recommended for students planning to attend graduate school

## AREAS OF SPECIALIZATION

The following areas of specialization are available in a Psychology B. A. program. A listing of the courses available in these areas can be obtained from the student's advisor:

- Industrial Psychology
- Exceptional Populations
- Educational/Counseling
- Community Services
- Clinical Biofeedback and Research Applications

A student in consultation with his/her advisor should determine the area of specialization early in his/her academic career.

# DEPARTMENT OF PUBLIC SERVICE ADMINISTRATION

**Acting Chairman:** G. Holten, CB 336, Phone 275-2603

**Faculty:** Ammons, Becker, Carter, Duffey, Jones, Korstad, Pyle, Slaughter, Stalnaker, Young

**Action Project Director:** Porter

The Department of Public Service incorporates three related degree programs: Allied Legal Services, Criminal Justice, and Public Administration.

## ALLIED LEGAL SERVICES

Graduates of this program are trained as legal assistants to serve as support staff in law offices, private corporations and public agencies. The graduate is expected to be a mature, highly motivated legal assistant able to move into the fact gathering, research and compilation phases of the law, to be familiar with basic legal procedures and terminology, to be skilled in the rapid and accurate acquisition, recording and reporting of essential information and to be capable of undertaking interview and investigate functions as appropriate.

Two areas of emphasis are offered: (1) the General Program which stresses the area of private legal relations and (2) the Public and Private Corporate Program which concentrates on the legal background required to function in Public Administration and private corporations.

## BACHELOR OF ARTS: ALLIED LEGAL SERVICES

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
  2. Special college and/or department requirements  
(See pages 197 and 214)
  3. Required courses

LEA 3013	Legal Investigation	4 hours
LEA 3001	Law and the Legal System	4 hours
LEA 3101	Litigation and Trial Practice	4 hours
LEA 3201	Property Law	4 hours
BUL 3111	Legal Environment of Business	3 hours
  4. Restricted Electives  
Students must complete one of the areas of specialization.
  5. Electives
- Total Quarter Hours Required 180

## AREAS OF SPECIALIZATION

1. General Program

LEA 3014	Legal Composition	4 hours
LEA 4501	Domestic Relations	4 hours
BUL 3112	Business Law	3 hours



Ten (10) hours of additional Allied Legal Science coursework

Twelve (12) quarter hours in allied fields, with advisor approval, which may include Accounting, Business, Economics, Public Administration, etc.

2. Public and Private Corporate Program

LEA 3801	Administrative Law	4 hours
PAD 4613	Legal Aspects of Public Administration	4 hours
LEA 4811	Law and Procedure-Bureaucracy	4 hours
PAD 4034	Administration of Public Policy	4 hours

Choose one (1) of the following:

LEA 4204	Land Use Law I	4 hours
LEA 4205	Land Use Law II	4 hours
LEA 4105	Evidence	4 hours
LEA 4430	Labor Law in the Public Sector	4 hours
LEA/PAD 4932	Special Topic	2 hours

Note: Transfer students from other institutions offering coursework in legal assistant topic areas will be allowed, with consent of their advisor, to apply up to eight (8) quarter hours toward required or LEA courses, and an additional eight (8) quarter hours toward fulfillment of coursework in the allied fields. In essence, every student will be required to take at least thirty-six (36) major quarter hours at UCF prior to graduation. Duplication of courses beyond the allowable hours can be avoided by selection of approved LEA or Allied Restricted Elective.

## CRIMINAL JUSTICE

The Criminal Justice program of study is designed to assist the student to attain specific professional career objectives as well as to provide him with a general background in the social and administrative sciences. The program offers three specific areas of specialization: law enforcement, corrections, and justice administration. The satisfactory completion of the curriculum leads to the degree of Bachelor of Arts with a major in Criminal Justice.

## BACHELOR OF ARTS: CRIMINAL JUSTICE

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 197 and 214)
3. Required courses

CCJ 2020	Introduction to Criminal Justice	4 hours
CCJ 3020	Criminal Justice System	4 hours
CCJ 3300	The Correctional and Penal System	4 hours
PAD 3003	Public Administration	4 hours

#### 4. Restricted Electives

- a) 32 additional quarter hours of CCJ courses of which no less than 28 hours must be upper division.

(Note: No more than 8 quarter hours of CCJ upper division will be waived in lieu of courses taken at junior colleges.)

- b) 26 quarter hours of Allied Supporting courses to be selected with and approved by the student's advisor.

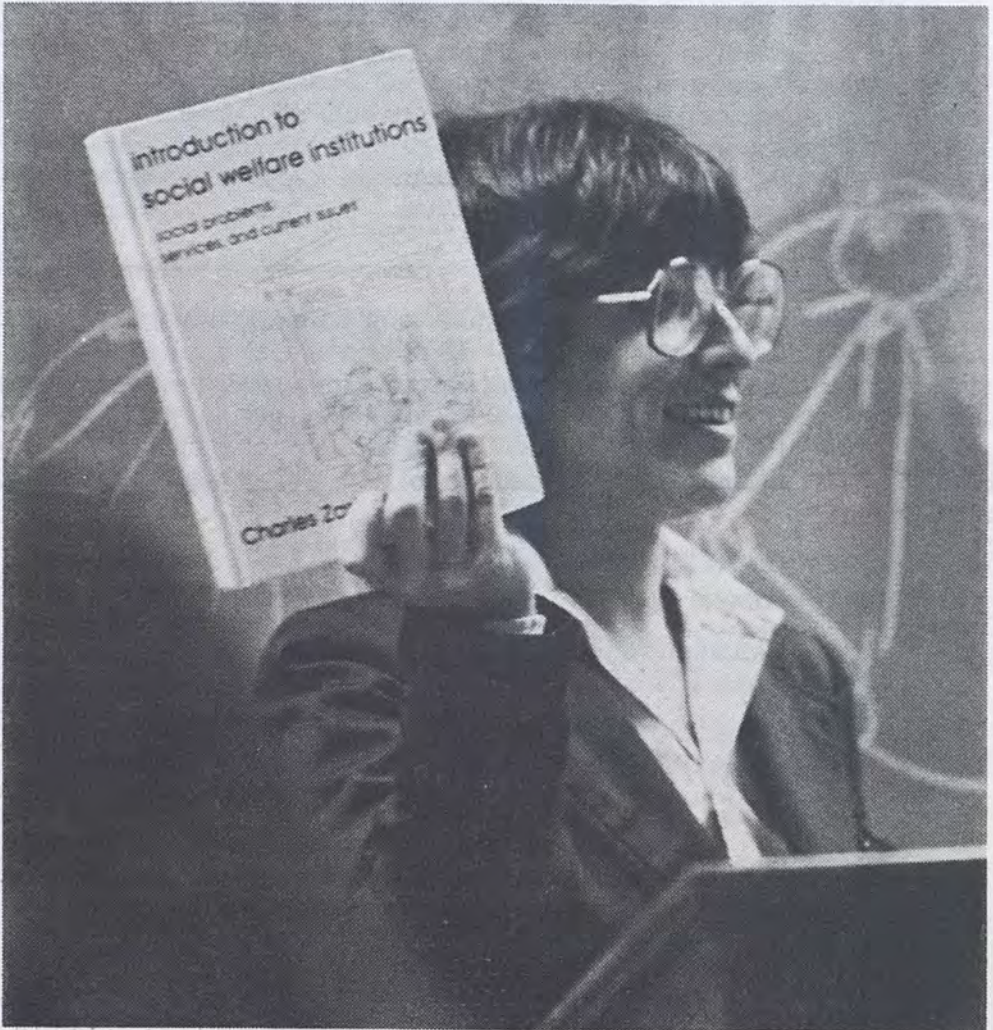
#### 5. Electives

Total Quarter Hours Required

180

### **PUBLIC ADMINISTRATION**

Students considering careers in public service at the federal, state or local level may choose to enroll in the Public Administration program, whose internship option offers qualified students a significant opportunity to acquire practical experience in government while completing their undergraduate curriculum.



## BACHELOR OF ARTS: PUBLIC ADMINISTRATION

### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
  2. Special college and/or department requirements  
(See pages 197 and 214)
  3. Required courses

PAD 3003	Introduction to Public Administration	4 hours
PAD 4034	Public Policy Administration	4 hours
PAD 4803	Metropolitan Administration	4 hours
PAD 4835	Fiscal Management	4 hours
LEA 3801	Administrative Law	4 hours
LEA 4430	Labor Law in the Public Sector	4 hours
PAD 4613	Legal Aspects of Public Administration	4 hours
PAD/LEA/CCJ 4932	Special Topics	4 hours
STA 2014	Principles of Statistics	4 hours
  4. Restricted Electives
    - a) PAD 4834 Corporate Public Administration I 4 hours  
or  
CRJ 4630 Comparative Justice Systems\* 4 hours
    - b) LEA 3001 Law and the Paraprofessional 4 hours  
or  
CCJ 3456 The Criminal Justice Manager\* 4 hours
    - c) LEA 3201 Property Law 4 hours  
or  
CCJ 4470 Financial Administration and Budgetry\* 4 hours

\*option open to double majors in Criminal Justice/Public Administration only with consent of advisor

  - d) Twelve (12) additional quarter hours selected from Public Administration Department offerings
5. Electives

Total Quarter Hours Required 180

## DEPARTMENT OF SOCIOLOGY

**Chairman:** C. Unkovic, LR 114G, Phone 275-2227

**Faculty:** Abel, Allen, Brown, Cook, Dees, Drake, Green, Hodgin, Jones, Miller, Stearman, Tropf, Wallace, Wando, Washington, Wright

The Department of Sociology offers the student an opportunity to obtain a Bachelor of Arts in Sociology, Anthropology, or Social Work.

Although a foreign language is not required for a sociology major, students planning to continue their education at the graduate level are strongly urged to acquire a working knowledge of a foreign language.

## MINORS

The Department of Sociology offers the following minors consisting of the number of quarter hours indicated in each minor:

### 1. Anthropology

Required courses: SOC 3640 or 3600, and SOC 4912 or equivalent courses: ANT 3410, 3142, 3422, LIN 4020, eight additional hours to be chosen in consultation with the student's advisor, including no less than one introductory Sociology course. No more than two courses can be transferred from other Sociology/Anthropology departments and no more than ten quarter hours of 1000 and 2000 level Sociology/Anthropology courses can be applied. Minimum number of quarter hours required—36.

### 2. Social Work

Required courses: SOC 2000, SOC 3640 or 3600, and SOC 3500 or equivalent courses; SOW 3302, 3325, 3745; eight additional quarter hours to be chosen in consultation with the student's advisor. No more than two courses can be transferred from other Sociology/Social Work departments and no more than ten quarter hours of 1000 and 2000 level Sociology/Social Work courses can be applied. Minimum number of quarter hours required—36.

### 3. Sociology

Required courses: SOC 3640 or 3600, and SOC 3500 or equivalent; a minimum of 24 quarter hours of Sociology courses. No more than two Sociology courses may be transferred from another Sociology department and no more than ten quarter hours of 1000 and 2000 level Sociology courses can be applied. Minimum number of quarter hours required—24, including no less than one introductory Sociology course.

## BACHELOR OF ARTS: SOCIOLOGY

### Degree Requirements

#### 1. University graduation requirements

(See pages 47 and 66)

#### 2. Special college and/or department requirements

(See pages 197 and 217)

#### 3. Required courses

SOC 2000	General Sociology	4 hours
SOC 2001	General Sociology	4 hours
SOC 3500	Research and Research Methods	4 hours
STA 2014	Principles of Statistics	4 hours
SOC 4507	Data Analysis	4 hours

#### 4. Restricted Electives

a)	SOC 3640	The Development of Social Thought	4 hours
		or	
	SOC 3600	Modern Sociological Thought	4 hours
b)	ANT 3000	Physical Anthropology	4 hours
		or	
	ANT 3410	Social Anthropology	4 hours

- c) Twenty-eight (28) hours of coursework from Sociology department offerings

5. Electives

Total Quarter Hours Required

180

**BACHELOR OF ARTS: Anthropology**

**Degree Requirements**

1. University graduation requirements  
(See pages 47 and 66)

2. Special college and/or department requirements  
(See pages 197 and 217)

3. Required courses

SOC 2000	General Sociology	4 hours
STA 2014	Principles of Statistics	4 hours

Restricted Electives

a)	SOC 3640	The Development of Social Thought	4 hours
	or		
	SOC 3600	Modern Sociological Thought	4 hours
	ANT 3000	Physical Anthropology and Archaeology	4 hours
	ANT 3410	Social Anthropology	4 hours
	ANT 3511	Physical Anthropology	4 hours
	ANT 3422	Comparative Social Organization	4 hours
	ANT 4086	Method and Research in Anthropology	4 hours
	SOC 4507	Research	4 hours

b) Choose at least one (1) from each grouping:

Linguistics

LIN 3010	Principles of Linguistics	3 hours
LIN 4020	Anthropological Linguistics	4 hours

Archaeology

ANT 3142	Old World Prehistory	4 hours
ANT 3144	New World Prehistory	4 hours
ANT 3122	Field and Lab. Tech. Arc.	4 hours

Ethnology

ANT 3312	Ethnology N. American Indians	4 hours
ANT 3313	Plains Indians of N. America	4 hours

Specialized Studies

SOC 3211	Sociology of Religion	4 hours
ANT 3432	Culture and Personality	4 hours

5. Electives

Total Quarter Hours Required

180

**BACHELOR OF ARTS: Social Work**

The Bachelor of Arts Program in Social Work is accredited by the Council on Social Work Education.

## Degree Requirements

### 1. University graduation requirements

(See pages 47 and 66)

### 2. Special college and/or department requirements

(See pages 197 and 217)

### 3. Required courses

SOC 2000	General Sociology	4 hours
STA 2014	Principles of Statistics	4 hours
SOW 3302	Introduction to Social Work and Social Welfare	4 hours
SOC 3310	Sociology of Deviant Behavior	
or		
CLP 3143	Abnormal Psychology	
SOW 3322	Social Group Work Skills	
SOW 3325	Social Welfare Programs and Policies	4 hours
SOW 3332	Community Organization	4 hours
SOW 3104	Human Growth and Development	4 hours
SOW 3350	Interviewing in Social Work Practice	3 hours
SOC 3500	Research	
SOW 4510	Field Experience	12 hours
SOW 4522	Seminar	4 hours
SOC 3640	The Development of Social Thought	4 hours
or		
SOC 3600	Modern Sociological Thought	4 hours
SOC 3745	Race and Ethnic Minorities in the United States	

### 4. Restricted Electives

SOW 3313	Social Work with Families and Individuals
SOW 3602	Health Services and Social Work
SOW 4381	Agency Management
SOW 4431	Evaluating Social Service Programs
SOW 4323	Communication Skills in Social Work

b) An additional 12 hours of approved SOC, ANT and SOW courses

### 5. Electives

Total Quarter Hours Required 180

## MAJOR IN SOCIAL SCIENCES

**Contact Person:** J. Rollins, CB 202, Phone 275-2293

This unique program offers students an opportunity to become acquainted with the various fields of Social Sciences and to understand better the relationships between those fields. Satisfactory completion of the program leads to the degree Bachelor of Science with a major in Social Sciences.

### BACHELOR OF SCIENCE: Social Sciences

#### Degree Requirements

1. University graduation requirements  
(See pages 47 and 66)
2. Special college and/or department requirements  
(See pages 197 and 221)
3. Required courses  
None
4. Restricted Electives
  - a) Choose one
    - POS 3703 Scope and Methods of Political Science
    - PSY 4214 Research Methods (Psychology)
    - SOC 4912 Research Methods (Sociology)
  - b) A minimum of 22 quarter hours in each of four Social Science disciplines. The following are the required courses for each discipline selected.
    - Communication
      - COM 1000 Basic Communication
      - COM 3311 Communication as a Behavioral Science
    - Economics
      - ECO 2023 Principles of Microeconomics
      - ECO 2013 Introduction to Aggregate Economics
    - Political Science
      - POS 2041 American National Government
    - Psychology
      - PSY 2013 General Psychology
      - PSY 2014 General Psychology
      - PPE 3003 Personality Theory
    - Public Service Administration
      - PAD 3003 Introduction to Public Administration
    - Sociology
      - SOC 2000 General Sociology
      - SOC 2001 General Sociology
5. Electives

Total Quarter Hours Required

180

# COLLEGE OF SOCIAL SCIENCES GRADUATE PROGRAMS

The College of Social Sciences offers the following graduate programs of study:

- Master of Arts: Communication
- Master of Science: Clinical Psychology
- Master of Science: Industrial Psychology
- Master of Public Policy

The College of Social Sciences requires all individuals seeking admission into a graduate program to submit quantitative-verbal GRE score received on tests taken within the past 5 years. Additional admission criteria may be imposed by individual programs in the College of Social Sciences. Information may be obtained by contacting the Dean's Office.

## MASTER OF ARTS: COMMUNICATION

**Program Coordinator:** R. Buchanan, FA 544, Phone 275-2681

The Department of Communication offers a diversified program, individual and flexible, leading to the Master of Arts Degree in Communication. Instruction is offered in mass communication, communication theory and research, informational and educational systems, persuasion, communicative disorders, and other areas drawn from the divisions of Journalism, Radio-Television, and Speech.

### ADMISSION REQUIREMENTS

1. University Admission Requirements  
(See pages 34 and 60)
2. Program Admission Requirements
  - a. To be considered for admission, applicants must submit: a quantitative-verbal GRE score dating from no longer than 5 years previous to application for admission;
  - b. Three letters of recommendation from undergraduate professors.

### Degree Requirements

1. University Graduate Policies and Procedures  
See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.
2. Prerequisites: none
3. Required Courses:

SPC 6219	Modern Communication Theory	4 hours
COM 6300	Introduction to Graduate Study	4 hours
COM 6312	Research Methods	4 hours

A grade of "B" or better must be attained in each required course



4. Restricted Electives: Twelve hours of prescribed courses from communication law, communication systems, small group communication, or specific courses approved by the student's committee.
5. Thesis: A six quarter hour credit thesis is required.
6. Examinations: Students must pass a comprehensive written and oral examination. Students may be required to demonstrate a proficiency in statistics and computer programming.

## **MASTER'S PROGRAM IN PSYCHOLOGY**

**Psychology Programs Coordinator:** *B. Blau*, CB 314, Phone 275-2216

The Psychology Department currently offers programs leading to the Master's Degrees in Clinical Psychology and Industrial Psychology. The programs require the equivalent of two years of full-time attendance to complete and are designed to prepare individuals for positions at the Master's level, working as psychologists in industrial settings and community agencies. Emphasis in the programs is on preparation for an applied position at the completion of each program.

## **MASTER OF SCIENCE: CLINICAL PSYCHOLOGY**

The Clinical Psychology Graduate Program at UCF was initiated for the primary purpose of providing training and preparation for individuals interested in rendering professional psychological service to the community. Service can be conducted in settings such as community mental health or guidance centers, out-patient psychiatric clinics, public or veteran's psychiatric hospitals, half-way houses, drug treatment centers, college or university counseling facilities, public correctional facilities and allied psychological service agencies.



While the delivery of psychological services comprises the program's primary thrust, this training is accomplished with a rigorous academic foundation in basic psychology including research methods. The program consists of three key areas of professional preparation: (1) Psychological Assessment-Evaluation Skills, (2) Intervention Counseling/Psychotherapy Skills, (3) Supervised Internship—Field Experience.

**Competency Requirements:** The student must demonstrate competency in the foundations areas of Abnormal, Developmental, Learning, Personality, Physiological and Tests and Measurements by one or more of the following methods:

- A. Undergraduate coursework in one or more of the above areas with an earned grade of A or B, no longer than 5 years previous to admission to the program (or taken concurrently with the graduate program).
- B. Successful performance on the Diagnostic Examinations administered by the Department at the beginning of each quarter for the foundations areas stated above.
- C. An Advanced Psychology GRE (code 81) score of 600 or greater, achieved no longer than 5 years previous to admission to the program.

### **ADMISSION REQUIREMENTS**

1. University Admission Requirements  
(See pages 34 and 60)
2. Program Admission Requirements
  - a. To be considered for admission, applicants must submit: an official report of the quantitative-verbal GRE score, dating from no longer than 5 years previous to application for admission;
  - b. Three letters of recommendation, at least one from an academic source;
  - c. A review of all *completed* folders March 1 and May 1 for the following September admission; acceptance is competitive for approximately 20 positions. See Departmental brochure for additional information.

### **Degree Requirements**

1. University Graduate Policies and Procedures  
See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.
2. Prerequisites: BA in psychology or special prerequisite courses to be arranged with the program coordinator.
3. Required Courses:  
Approximately 61 quarter hours of work including:
  - a. 38 hours academic class work:
    - 20 hrs. in Intervention-Counseling/Psychotherapy
    - 8 hrs. in Psychological Assessment-Evaluation
    - 8 hrs. in Statistics, Research Design and Evaluation
    - 4 hrs. in Ethical and Professional Issues
  - b. 10 hours labs and practicums
  - c. 9 hours internship (15 hours/week 3 quarter placement)

4. Restricted Electives:

PSY 6918      Research Report  
                         or  
PSY 6971      Thesis

5. Thesis and Research Report: At least four quarter hours of thesis or research report credit are required. Oral defense of thesis or research report is required.

6. Examinations:

- a. Diagnostic Examination must be successfully completed before beginning second academic year of the program.
- b. Qualifying Examination given after the fourth quarter of study or equivalent.

Total Quarter Hours Required

62

### **MASTER OF SCIENCE: INDUSTRIAL PSYCHOLOGY**

The basic goal of the Industrial Psychology Graduate Program is to train individuals to apply psychological principals and skills effectively to industrial and related settings. The program is designed to lead to a terminal Master's degree whereby graduates from this program will be able to work effectively in a wide range of applied settings including industry, government, and the education fields.

Competency Requirements: The student must demonstrate competency in the foundations areas of Developmental, Learning, Motivation, Personality and Social by one or more of the following methods:

- A. Undergraduate coursework in one or more of the above areas with an earned grade of A or B, no longer than 5 years previous to admission to the program (or taken concurrently with the graduate program).
- B. Successful performance on the Diagnostic Examinations administered by the Department at the beginning of each quarter for the foundations areas stated above.

### **ADMISSION REQUIREMENTS**

1. University Admission Requirements  
(See pages 34 and 60)
2. Program Admission Requirements
  - a. To be considered for admission, applicants must submit: a quantitative-verbal GRE score dating from no longer than 5 years previous to application for admission;
  - b. Three letters of recommendation.

### **Degree Requirements**

1. University Graduate Policies and Procedures  
See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.
2. Prerequisites: BA in psychology or special prerequisite courses to be arranged with the program coordinator.

3. Required Courses:  
Approximately 65 quarter hours of work including:
  - a. 40 hours of academic class work:
    - 12 hrs. in statistics, research design
    - 8 hrs. in test theory and selection
    - 16 hrs. in Professional core courses
    - 4 hrs. of elective courses
  - b. 10 hrs. of practicum and labs
4. Restricted Electives: Consent of advisor required for all electives 4 hours
5. Thesis: Twelve hours of thesis is required. Oral defense of thesis is required.
6. Examinations:
  - a. Diagnostic Examination must be successfully completed before beginning the second academic year of the program.
  - b. Qualifying Examinations at the end of the first and second year of the program or equivalent.

Total Quarter Hours Required 65

## MASTER OF PUBLIC POLICY

**Program Coordinator:** *L. Tanzi*, CB 310, Phone 275-2492

The Departments of Political Science and Public Service Administration offer graduate work leading to the Master of Public Policy degree. This program offers a flexible course of study which prepares students for positions as policy analysts and administrators in various modes of public service. The interdisciplinary nature of the programs provide the opportunity to acquire knowledge, master techniques, and develop insights essential for the design, analysis, and effectuation of policy program at all levels of government.

Two specialization areas are available. The "Policy Analysis" is primarily for individuals interested in the institutions, processes, and behaviors of the political system and the environment in which policy decisions are made. The "Bureaucracy and Public Policy" specialization focuses upon the implementation and administration of policy decisions.

### ADMISSION REQUIREMENTS

1. University Admissions Requirements  
(See pages 34 and 60)
2. Program Admission Requirements
  - a. Submission of a quantitative-verbal GRE score dating from no longer than 5 years previous to application for admission.
  - b. Submission of three letters of recommendation from individuals capable of assessing the applicant's ability to undertake graduate work successfully.

### Degree Requirements

1. University Graduate Policies and Procedures  
See the current UCF Graduate Procedures Manual, available in the

Office of Graduate Studies.

2. Prerequisites: Undergraduate study in Political Science or Public Administration desirable. However, individuals with strong backgrounds in related disciplines could be accommodated. Additional course work may be required to remove deficiencies.

3. Required Courses: The following courses are required.

PUP 6007	Public Policy and Political Analysis	4 hours
POS 6743	Models for Policy Analysis	4 hours
PAD 6037	Bureaucracy and Public Policy	4 hours
PAD 6310	Planning and Organization for Economic and Social Development	4 hours
POS 6734	Research Methods	4 hours
POS 6918	Research Report	6 hours
or		
PAD 6918		

4. Restricted Electives: Select at least one hours vary

POS 6157	Issues in Urban Policy
POS 6127	Issues in State Public Policy
PUP 6057	Issues in National Public Policy
PUP 6058	Issues in International Public Policy
PUP 6717	Issues in Economic Public Policy
PAD 6934	Issues in Public Administration

Other electives may be selected from University-wide graduate offerings if each elective is approved by the student's graduate committee. No more than 8 quarter hours of "C" may be counted toward fulfilling degree requirements. Exceeding 8 quarter hours of "C" and/or unresolved "I" grades in a specific program of study constitutes grounds for dismissal from graduate status.

5. Research Report: Six quarter hours of credit must be earned for an internship or investigatory research project that results in a research report acceptable to the student's graduate committee.

6. Examinations: Individuals must perform satisfactorily on a written comprehensive examination designed to test knowledge and abilities in the core program and specialization selected. Normally this examination will not be administered until at least 40 quarter hours of graduate work are completed. An oral examination will be administered by the student's graduate committee following the completion of the student's research report.

Total Quarter Hours Required 50

# COURSE DESCRIPTIONS

## CLASSIFICATION OF COURSES

The University course numbering system is as follows:

- 1000-2999 are freshman and sophomore level courses and are designed primarily for these students.
- 3000-4999 are junior and senior level courses and are designed primarily for these and other advanced students. When approved for inclusion in an individual program of graduate study by a supervisory committee approved by the Dean of Graduate studies, selected 4000-4999 courses may serve the needs of individual graduate students.
- 5000-5999 are *beginning graduate and advanced undergraduate* level courses—open to graduate students and those seniors who receive approval of the appropriate Dean(s).
- 6000-6999 are *beginning and professional* level courses open only to graduate students.

## FLORIDA'S STATEWIDE COURSE NUMBERING SYSTEM

The course numbers appearing in the catalog are part of a statewide system of prefixes and numbers developed for use by all public post-secondary and participating private institutions in Florida. One of the major purposes of this system is to make transferring easier by identifying courses which are equivalent, no matter where they are taught in the state. All courses designated as equivalent will carry the same prefix and last three digits.

The classifying and numbering of courses was done by community college and university faculty members in each academic discipline. Their work was reviewed by faculty members in all of Florida's postsecondary institutions who made suggestions and criticisms to be incorporated into the system.

The course numbering system is, by law, descriptive and not prescriptive. It in no way limits or controls what courses may be offered or how they are taught. It does not affect course titles or descriptions at individual schools. It seeks only to describe what is being offered in postsecondary education in Florida in a manner that is intelligible and useful to students, faculty and other interested users of the system.

The course numbering system was developed so that equivalent courses could be accepted for transfer without misunderstanding. Each public institution is to accept for transfer credit any course which carries the same prefix and last three digits as a course at the receiving institution. For example, if a student has taken SOC-000 at a community college, he cannot be required to repeat SOC-000 at the school to which he transfers. Further, credit for any course or its equivalent, as judged by the appropriate faculty

task force and published in the course numbering system, which can be used by a native student to satisfy degree requirements at a state university can also be used for that purpose by a transfer student regardless of where the credit was earned.

It should be noted that a receiving institution is not precluded from using *non-equivalent* courses for satisfying certain requirements.

### **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 40 postsecondary institutions in Florida. Since these courses are considered to be equivalent, each one will carry the designator SOC-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 SOC 1000; a school offering the same course in the sophomore year will number it SOC 2000. The variance in first numbers does *not* affect the equivalency. If the prefix and last three digits are the same, the courses are substantially 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 at a different time/place from the lecture course.

"C" means a combined lecture-lab course in which the lab is offered in conjunction with the lecture at the same time/same place.

Examples: Marine Biology OCB-013 (lecture only)

OCB-013L (lab only)

Marine Biology OCB-013C (lecture & lab combined)  
with Lab

Therefore, OCB 013C is equivalent to OCB-013 plus OCB-013L.

An alphabetical listing of prefixes:

ACC	Accounting
ADV	Advertising
AFH	African History
AFR	Air Force ROTC
AMH	American History
AML	American Literature
ANT	Anthropology
APB	Applied Biology
ARE	Art Education
ARH	Art History

ART	Art
ASH	Asian History
AST	Astronomy
BCH	Biochemistry
BCN	Building Construction
BOT	Botany
BSC	Introductory Biology
BTE	Business Teacher Education
BUL	Business Law
CAP	Computer Applications
CBH	Comparative Psychology & Animal Behavior
CCJ	Criminology & Criminal Justice
CDA	Computer Design/Architecture
CES	Civil Engineering Structures
CHM	Chemistry
CHS	Chemistry-Specialized
CIS	Computer & Information Systems
CJT	Criminal Justice Technology
CLP	Clinical Psychology
CNM	Computational/Numerical Methods
COC	Computer Concepts
COM	Communication
COP	Computer Programming
COT	Computer Theory
CPO	Comparative Politics
CRM	Computer Resources/Management
CRW	Creative Writing
CYP	Community Psychology
DAA	Dance Activities
DAE	Dance Education
DEP	Development Psychology
DHE	Demography & Human Ecology
EAB	Experimental Analysis of Behavior
EAS	Engineering: Aerospace
ECI	Engineering: Civil
ECM	Engineering: Computer Mathematics
ECO	Economics
ECP	Economic Problems & Policy
ECS	Economic Systems & Development
EDA	Education: Administration
EDE	Education: Elementary
EDF	Education: Foundation
EDG	Education: General
EDH	Education: Higher
EDM	Education: Middle School
EDP	Educational Psychology
EDS	Education: Supervision
EEC	Education: Early Childhood
EED	Education: Emotional Disorders
EEL	Engineering: Electrical
EES	Environmental Engineering Science
EEX	Educational: Exceptional Child-Core Competencies



EGC	Guidance & Counseling
EGM	Engineering: Mechanical
EGN	Engineering: General
EIN	Engineering: Industrial
ELD	Education: Specific Learning Disabilities
EMA	Engineering: Material
EME	Education: Technology & Media
EML	Engineering: Mechanical
EMR	Education: Mental Retardation
ENC	English Composition
ENG	English-General
ENL	English Literature
ENU	Engineering: Nuclear
ENV	Engineering: Environmental
ENY	Entomology
ESE	Education: Secondary
ESI	Engineering Systems—Industrial
ESL	English as a Second Language
ETC	Engineering Tech: Civil
ETE	Engineering Tech: Electrical
ETG	Engineering Tech: General
ETI	Engineering Tech: Industrial
ETM	Engineering Tech: Mechanical
EUH	European History
EVI	Education: Visually Impaired—Blind
EVS	Environmental Science
EVT	Education: Vocational/Technical
EXP	Experimental Psychology
FIL	Film
FIN	Finance
FOT	Foreign & Biblical Languages in Translation
FRE	French Language
FRW	French Literature (Writings)
GEB	General Business
GEO	Geography
GER	German Language
GEW	German Literature (Writings)
GEY	Gerontology
GLY	Geology
HLP	Health Education
HSC	Health Science
HUM	Humanities
HUN	Human Nutrition
INP	Industrial & Applied Psychology
INR	International Relations
ITA	Italian Language
JOU	Journalism
LAE	Language Arts & English Education
LAH	Latin American History
LEA	Legal Assistant
LEI	Leisure
LIN	Linguistics

LIS	Library Science
LIT	Literature
MAA	Mathematics—Analysis
MAC	Mathematics—Calculus & Precalculus
MAD	Mathematics—Discrete
MAE	Mathematics Education
MAF	Marriage & Family
MAN	Management
MAP	Mathematics—Applied
MAR	Marketing
MAS	Mathematics: Algebraic Structures
MAT	Mathematics
MCB	Microbiology
MET	Meteorology
MGF	Mathematics: General & Finite
MHF	Mathematics: History & Foundations
MIS	Military Science
MLS	Medical Laboratory Science
MMC	Mass Media Communication
MRE	Medical Records
MTG	Mathematics: Topology & Geometry
MUC	Music: Composition
MUE	Music: Education
MUH	Music: History/Musicology
MUL	Music: Music Literature
MUN	Music: Musical Ensembles
MUS	Music
MUT	Music: Theory
MVB	Music: Applied Brasses
MVK	Music: Applied—Keyboard
MVO	Music: Applied-Other Instruments
MVP	Music: Applied-Percussion
MVS	Music: Applied-Strings
MVV	Music: Applied-Voice
MVW	Music: Applied-Woodwinds
NUR	Nursing
NUU	Nursing Universals
OCE	Oceanography
ORI	Oral Interpretation
PAD	Public Administration
PCB	Process Cell Biology
PEL	Physical Education Acts (GEN)—Object Centrd., Land
PEM	Physical Education Acts (GEN)—Perform Centrd., Land
PEN	Physical Education Acts (GEN)—Water, Snow, Ice
PEO	Physical Education Acts (PROFNL)—Object Centrd., Land
PEP	Physical Education Acts (PROFNL)—Perfm. Centrd., Land
PEQ	Physical Education Acts (PROFNL)—Water, Snow, Ice
PET	Physical Education Theory
PHH	Philosophy, History of
PHI	Philosophy
PHM	Philosophy of Man & Society
PHS	Physics—Specialized

PHY	Physics
POS	Political Science
POT	Political Theory
PPE	Psychology of Personality
PSB	Psychobiology
PSC	Physical Sciences
PSY	Psychology
PUP	Public Policy
PUR	Public Relations
QMB	Quantitative Methods in Business
REA	Reading
RED	Reading Education
REE	Real Estate
REL	Religion
RET	Respiratory Therapy
RMI	Risk Management & Insurance
RTE	Radiological Sciences
RTV	Radio—Television
RUS	Russian Language
SCE	Science Education
SED	Speech Education
SOC	Sociology
SOP	Social Psychology
SOW	Social Work
SPA	Speech Pathology & Audiology
SPC	Speech Communication
SPN	Spanish Language
SPS	School Psychology
SPW	Spanish Literature (Writings)
SSE	Social Studies Education
STA	Statistics
STD	Student Development
SUR	Surveying
THE	Theatre
TPA	Theatre Production & Administration
TPP	Theatre Performance & Performance Training
TTE	Transportation & Traffic Engineering
ZOO	Zoology

## **COURSES NUMBERED 0-999**

Depending upon previous background and test scores earned, individual students may be required to complete more than the minimum number of credits required for graduation in their respective programs. Courses numbered less than 1000 (State-wide Common Course Numbers) are of subcollegiate level and may not be counted in meeting degree credit hour requirements for graduation.

## **SPECIAL COURSES**

In addition to the regular courses listed in this bulletin, special courses may be available. Consult your academic advisor for details.

	<b>Undergraduates</b>		<b>Special Grad<sup>1</sup></b>	<b>Grad &amp; Prof</b>
Directed Independent Studies	3905	4906	5907	6908
Directed Independent Research		4912	5917	6918
Special Topics/Seminars	3930	4932	5937	6938
Internships, Practicums, Clinical Practice	3940	4941	5944	6946
Study Abroad	3955	4956	5957	6958
Thesis		4970		6971
Thesis-Specialist				6973

These courses may be assigned variable credit. Some may be repeated upon approval.

<sup>1</sup> The Special Graduate Courses are primarily for graduate students, but may be taken by advanced seniors with the consent of their deans.

### **PR: PREREQUISITE**

A course in which credit must be earned prior to enrollment in the listed course.

### **CR: COREQUISITE**

A course which must be taken concurrently with or prior to the listed course.

### **CI: CONSENT OF INSTRUCTOR**

#### **HOURS CODE**

Each course listing is followed by a code which shows hours credit, contact hours, and quarters during which the course will normally be offered.

Example:

**CHM 3121C**

**NS 3 (2,3) F,W**

**Analytical Chemistry I:** CHM 3121 carries 3 hours credit but requires 5 contact hours; 2 in class and 3 in laboratory or field work. It is scheduled to be offered in Fall Quarter and Winter Quarter by the College of Natural Sciences.

Quarter designation: F=Fall; W=Winter; S=Spring; Su=Summer.

College designation: BA=Business Administration; ED=Education;  
EN=Engineering; HRP=Health Related Professions;  
HFA=Humanities and Fine Arts; NS=Natural  
Sciences; SS=Social Sciences

### **AVAILABILITY OF COURSES**

The University does not offer all of the courses listed in the catalog each year. The Class Schedule should be consulted for those courses offered each quarter.

**ACC 2304**

**BA 3 (3,0) F,W,S,Su**

**Financial Accounting I:** PR: Sophomore standing. Accounting concepts, financial statements, accounting cycle, monetary and fixed assets, inventories, current and long-term liabilities, equity structure of proprietorships, partnerships, corporations.

**ACC 2324**

**BA 3 (3,0) F,W,S,Su**

**Financial Accounting II:** PR: ACC 2304 and Sophomore standing. Continuation of ACC 2304.

**ACC 3003**

**BA 5 (5,0) F,W,S,Su**

**Financial Accounting:** PR: Junior standing. Same as ACC 2304/2324. Credit may not be earned in both ACC 3003 and the ACC 2304, 2324 sequence.

- ACC 3101** **BA 3 (3,0) F,W,S,Su**  
**Intermediate Accounting I:** PR: ACC 2304, 2324 or equivalent. An in depth review of accounting process, concepts, content of financial statements, framework of accounting theory; cash vs. accrual; statement analysis, present value applications.
- ACC 3121** **BA 5 (5,0) F,W,S,Su**  
**Intermediate Accounting II:** PR: ACC 3800 with a grade of "C" or better. A continuation of ACC 3101.
- ACC 3141** **BA 5 (5,0) F,W,S,Su**  
**Intermediate Accounting III:** PR: ACC 3101. A continuation of ACC 3121.
- ACC 3301** **BA 3 (3,0) F,W,S,Su**  
**Management Accounting:** PR: ACC 2324 or ACC 3003 or equivalent. Business information requirements; cost accounting concepts and relationships, forecasting and budgeting. Not open to ACC majors.
- ACC 3401** **BA 4 (4,0) F,W,S,Su**  
**Cost Accounting:** PR: ACC 3101 with a grade of "C" or better. Cost concepts, cost of goods manufactured; job order costing, standard cost.
- ACC 3861** **BA 3 (3,0) F,S**  
**Governmental Accounting:** PR: ACC 2324 or ACC 3003. Budget accounting and reporting problems of state and national governments.
- ACC 4201** **BA 5 (5,0) F,W,S,Su**  
**Advanced Accounting:** PR: ACC 3141. Problems of partnerships, business combinations, consolidated statements. Fund accounting principles and procedures and their relation to government accounting.
- ACC 4421** **BA 4 (4,0) F,W,S,Su**  
**Cost Analysis:** PR: ACC 3401, FIN 3403, ECO 3411 or C.I. Cost-volume-profit analysis, direct costing, budgeting (operational), transfer pricing, joint costs and by-products, quantitative techniques.
- ACC 4501** **BA 5 (5,0) F,W,S,Su**  
**Federal Income Tax Accounting:** Concepts and methods of determining taxable income of individuals, partnerships and corporations.
- ACC 4601** **BA 5 (5,0) F,W,S,Su**  
**Auditing:** PR: ACC 3141. The principles, practices and procedures followed in the audit function. Preparation of related working papers and the audit report.
- ACC 4934** **BA 2 (2,0) F,W,S,Su**  
**Current Selected Topics:** PR: Completion of all other required accounting courses, or concurrent registration, or permission of the Department Chairman.
- ACC 5004** **BA 4 (4,0)**  
**Financial Accounting Concepts:** PR: Acceptance into the graduate program. The conceptual background for financial statements for external purposes.
- ACC 6411** **BA 5**  
**Cost Accounting for Management Decisions:** PR: Graduate standing and all foundation courses or equivalents. Emphasis on cost finding and analysis for management decisions.
- ACC 6511** **BA 5**  
**Taxation:** PR: Graduate standing and all foundation courses or equivalents. An advanced study of tax law with emphasis on business taxes.
- ACC 6611** **BA 5**  
**Advanced Auditing:** PR: Graduate standing and all foundation courses or equivalents. The study of auditing problems with special emphasis on statistical sampling and the auditing of electronic data processing systems.
- ACC 6734** **BA 3 (3,0)**  
**Accounting Analysis:** PR: Graduate standing and ACC 5004 or one year of accounting. (Not open for accounting majors.) Accounting as an information measurement system for internal planning and control.

- ACC 6735** **BA 5 (5,0)**  
**Computers and Information Systems in Accounting:** PR: Graduate standing and all foundation courses or equivalents. Introduction to design and management of information flows integrating accounting within the framework of information systems.
- ACC 6805** **BA 5 (5,0)**  
**Contemporary Accounting Theory:** PR: Graduate standing and all of foundation courses or equivalents. An examination of the evolution of contemporary accounting theory. Emphasis is on current and future development.
- ACC 6866** **BA 5 (5,0)**  
**Specialized Accounting Problems:** PR: Graduate standing and all foundation courses or equivalents. A survey of specialized and regulatory accounting practice.
- ADV 4000** **SS 4 (4,0)**  
**Principles of Advertising:** PR: Junior standing or C.I. Analysis of field of advertising; purposes, techniques, media, organization, and role of research.
- ADV 4003** **SS 4 (2,2) F,S,Su**  
**Advertising Layout and Preparation:** Layout and preparation of advertising for the print media. Production and mechanical requirements of print media.
- ADV 4101** **SS 4 (2,2) S**  
**Advertising Copy:** PR: ADV 4000. The writing and preparation of advertising copy.
- ADV 4103** **SS 4 (4,0)**  
**Radio-Television Advertising:** PR: ADV 4000 or C.I. Radio and television as advertisers demands and budget; appropriate programs for the sponsors' needs; writing of commercial continuity.
- ADV 4300** **SS 4 (4,0)**  
**Advertising Media:** PR: ADV 4000 or C.I. Evaluation of media's ability to serve the advertiser's communication needs and analysis used in determining media success.
- ADV 4801** **SS 4 (4,0) S**  
**Advertising Campaign:** PR: ADV 4000, ADV 4101, ADV 4300. The planning and execution of an advertising campaign; coordination of campaign elements.
- AFH 3341** **HFA 4 (4,0) S**  
**Sub-Saharan Africa—Western and Central:** Survey of history of Western and Central Africa including trans-Saharan influences, Sudanic Empires, Forest Kingdoms, Equatorial Africa, and colonial and national periods.
- AFH 3404** **HFA 4 (4,0) W**  
**Sub-Saharan Africa—Eastern and Southern:** Survey of history of Eastern and Southern Africa including origins of man, Bantu migrations, Arab and European influences, and colonial and national periods.
- AFR 1101C** **SS 1 (1,1) F**  
**The United States Air Force and Strategic Offensive Forces:** PR: Qualification for Air Force ROTC or permission of Professor of Aerospace Studies. History, mission, organization and doctrine of the United States Air Force and a study of U.S. Strategic Offensive Forces.
- AFR 1111C** **SS 1 (1,1) W**  
**Strategic Defense Forces:** PR: AFR 1101C or permission of Professor of Aerospace Studies. Concepts of aerospace defense. A study of the various systems and functions associated with defense against manned bombers and missiles.
- AFR 1120C** **SS 1 (1,1) S**  
**Conventional Military Forces:** PR: AFR 1111C or permission of Professor of Aerospace Studies. A brief of Army, Navy, and Marine Forces. An introduction to special operations and counter-insurgency.
- AFR 2130C** **SS 1 (1,1) F**  
**The Birth of Airpower:** PR: AFR 1120C or approval of PAS. A study of the early development of manned flight from the 18th century balloonist through the achievement of mature airpower capabilities prior to World War II.

- AFR 2131C** **SS 1 (1,1) W**  
**Airpower: Crisis and Maturity:** PR: AFR 2130C or approval of PAS. A review of fifteen years of airpower development, highlighting changes in aircraft technology and employment brought about by experiences in WW II and Korea.
- AFR 2140C** **SS 1 (1,1) S**  
**The Aerospace Age:** PR: AFR 2131C or approval of PAS. A study of aerospace power in the contemporary world and its current employment as a force of stability.
- AFR 3220C** **SS 3 (3,1) F**  
**Leadership and Discipline in the Air Force:** PR: GMC or Two-Year Program selection and/or approval of Professor of Aerospace Studies. The need of Air Force leadership, professional responsibilities of the officer, and need for discipline in the military. Review and survey of military communicative skills.
- AFR 3230C** **SS 3 (3,1) W**  
**Principles of Military Leadership and Management:** PR: AFR 3220C or approval of Professor of Aerospace Studies. Variables affecting military leadership, traits and interactional approaches to leadership, introduction to military management, and systems approach to Air Force management.
- AFR 3231C** **SS 3 (3,1) S**  
**Air Force Management and the Junior Officer:** PR: AFR 3230C or approval of Professor of Aerospace Studies. Air Force personnel management policies and the military justice system as they affect the junior officer.
- AFR 4201C** **SS 3 (3,1) F**  
**Military Role in Contemporary Society:** PR: AFR 3231C or approval of PAS. Examination of the military profession and its role in American Society.
- AFR 4210C** **SS 3 (3,1) W**  
**Defense Policy and Strategy:** PR: AFR 4201C or approval of PAS. A study of the framework of defense policy and formation of defense strategy including political, economic and social constraints upon the national defense structure.
- AFR 4211C** **SS 3 (3,1) S**  
**Implementation of Defense Policy:** PR: AFR 4210C or approval of PAS. An examination of defense implementation by the DOD, Congress and the Presidency, and the manner in which they impact on the decision making process.
- AFR 4240C** **SS 4 (4,0)**  
**Introduction to Flight (Pilot):** PR: AFR 3220C, 3230C, 3231C and/or permission of the Professor of Aerospace Studies. An academic, introductory study of weather, navigation. FAA regulations and flight radio procedures.
- AMH 3310** **HFA 4 (4,0) F,W,S**  
**American Social History.**
- AMH 3350** **HFA 4 (4,0) F,W,S**  
**American Political History.**
- AMH 3370** **HFA 4 (4,0) F,W,S**  
**American Economic History.**
- AMH 3402** **HFA 4 (4,0) W**  
**History of the South to 1865:** Development of the southern colonies, beginning of sectionalism, the cotton economy, slavery. Calhoun's constitutional theories, secession, Civil War and its aftermath.
- AMH 3403** **HFA 4 (4,0) S**  
**History of the South Since 1865:** Reconstruction, the "solid South" and the racial dilemma, progressivism for whites only, southern literature, 20th century economic, political, and social changes, and the new Reconstruction.
- AMH 3421** **HFA 4 (4,0)**  
**History of Florida to 1845**
- AMH 3423** **HFA 4 (4,0)**  
**Florida History 1845—Present**

- AMH 3441** **HFA 4 (4,0) F**  
**History of the Frontier: Eastern America.** The progression of the westward movement from the colonial settlements to the Mississippi considered as an interpretive approach to American history.
- AMH 3442** **HFA 4 (4,0) W**  
**History of the Frontier: Western America.** The development of the trans-Mississippi West and its impact upon American history.
- AMH 3445** **HFA 4 (4,0)**  
**Spanish Borderlands.**
- AMH 3551** **HFA 4 (4,0)**  
**U.S. Constitutional History I:** Development of the constitutional system and the idea of Constitutionalism from the colonial emphasis on written contracts and natural law through "nullification" and Civil War.
- AMH 3552** **HFA 4 (4,0)**  
**U.S. Constitutional History II:** Post-war constitutional changes; the curious role of the 14th amendment; expansion of national power over economy and civil rights; increasing popular belief in "Constitutionalism."
- AMH 3570** **HFA 4 (4,0)**  
**Black American History:** History of Negroes from their African heritage through American Slavery to freedom and their role in 20th Century America.
- AMH 4110** **HFA 4 (4,0)**  
**Colonial America, 1607-1763;** The voyages of discovery, the origins of the thirteen colonies, and their political, economic, social, and religious life in the 17th and 18th centuries.
- AMH 4130** **HFA 4 (4,0)**  
**The Age of the American Revolution, 1763-1789:** The American Revolution—its origins, course, and impact upon American society—the Articles of Confederation, the Philadelphia Convention and its work.
- AMH 4140** **HFA 4 (4,0) W**  
**Jeffersonian America:** The Confederation era, the Federalists, Jeffersonian Democracy, and the War of 1812.
- AMH 4160** **HFA 4 (4,0)**  
**Jacksonian America:** The risk of American nationalism, Jacksonian Democracy, the Mexican War and sectional conflict.
- AMH 4170** **HFA 4 (4,0)**  
**Civil War and Reconstruction:** Reconstruction, and impact of industrialism.
- AMH 4211** **HFA 4 (4,0)**  
**Robber Baron Era:** The Agrarian Revolt, the Spanish-American War, and the Progressive Era.
- AMH 4231** **HFA 4 (4,0)**  
**United States History: 1914-1945:** The progressive Reforms of Woodrow Wilson, World War I, post-war prosperity, the Depression, and the New Deal; World War II.
- AMH 4270** **HFA 4 (4,0)**  
**United States History: 1945-Present:** Contemporary America from World War II.
- AMH 4311** **HFA 4 (4,0)**  
**American Culture I:** The European Backgrounds; Puritanism; Enlightenment; the Great Awakening; Revolutionary Thought; Romanticism; the Southern Mind and the Yankee Response; Popular Culture and the rise of recreation.
- AMH 4312** **HFA 4 (4,0)**  
**American Culture II:** The Darwinian Revolution; revolt of the intellectuals; the media explosion; mass entertainment in mass culture; the loss of community, the nuclear age, and presentism.
- AMH 4460** **HFA 4 (4,0) S**  
**Urban History:** Growth of cities in U.S. with emphasis on urban culture, business civilization, rural-urban conflict, industrial/technological growth, anti-urban feeling in American culture.



- AMH 4510** **HFA 4 (4,0) F**  
**Rise of the United States to World Power, 1776-1914:** The evolution of basic American policies. American expansion, America's major wars, and the emergence of America as a world power.
- AMH 4511** **HFA 4 (4,0) S**  
**United States as a Great Power: 1914-Present:** American foreign policy in World War I, the interwar period, World War II, and the Cold War.
- AML 3101** **HFA 3 (3,0) F,Su**  
**Survey of American Literature, 1588-1865**
- AML 3107** **HFA 3 (3,0) F,W**  
**Survey of American Literature, 1865-1914**
- AML 3111** **HFA 3 (3,0) W,S**  
**Survey of American Literature Since 1914**
- AML 4320** **HFA 4 (4,0)**  
**Literature of the South:** PR: ENC 1135 or C.I. Development of Southern Literature with emphasis on Ransom, Porter, Faulkner, Tate, Wolfe, Warren, Wright, Welty, Ellison, McCullers, O'Conner, and other writers since World War I.
- ANT 3000** **SS 4 (4,0) F,S**  
**Physical Anthropology and Archaeology:** Survey of man's place among primates, evolution, genetics, and prehistoric cultural development to the earliest civilizations.
- ANT 3122** **SS 4 (4,0) W**  
**Archaeological Methods:** PR: ANT 3000 or ANT 3410. A seminar surveying archaeological field and laboratory techniques; i.e., bone preservation, zooarchaeology, ethnobotany, cataloguing, classification, and laboratory analysis.
- ANT 3141** **SS 4 (4,0)**  
**Prehistory of Complex Societies:** An analysis of prehistoric urban systems in Europe, Asia, Africa and the Americas, approached in an evolutionary perspective.
- ANT 3142** **SS 4 (4,0) F,S**  
**Old World Prehistory:** PR: ANT 3000 and ANT 3410. Fundamentals of archaeological discipline and research techniques. Surveys prehistoric record of cultural development from earliest times to rise in civilizations in all areas of Old World.
- ANT 3144** **SS 4 (4,0) W**  
**New World Prehistory:** PR: ANT 3000 and ANT 3410. Essentials of New World archaeology, methods, and excavations. Surveys space-time framework of Native American Indian cultures and civilization from earliest times to A.D. 1500.
- ANT 3241** **SS 4 (4,0)**  
**The Anthropology of Religion:** Patterns in religious behavior in various societies with primary emphasis on myth, rite, taboo and festival as social phenomena.
- ANT 3312** **SS 4 (4,0) S**  
**Ethnology of North American Indians:** A survey of the aboriginal cultures of North America with emphasis on the pre-contact cultural condition.
- ANT 3313** **SS 4 (4,0) F**  
**Plains Indians of North America:** a study of the social and cultural history of the Indians of the North American High Plains.
- ANT 3332** **SS 4 (4,0) W**  
**People and Cultures of Latin America:** An overview of the history and society of the peoples of Latin America emphasizing patterns of subsistence and social organization.
- ANT 3410** **SS 4 (4,0) W,Su**  
**Social Anthropology:** Framework and principles of sociocultural organization as exemplified among various cultures and ethnic groups.
- ANT 3422** **SS 4 (4,0)**  
**Comparative Social Organization:** PR: ANT 3000 and 3410. Introduction to anthropological viewpoints on role of marriage, family, kin groups, and descent in the study of economic, political and ideological aspects of social organization.

- ANT 3424** **SS 4 (4,0)**  
**Culture and Community:** The anthropology of the human community in a cross-cultural context focusing on such aspects as settlement patterns, subsistence activities, social structure and processes of interaction.
- ANT 3432** **SS 4 (4,0)**  
**Culture and Personality:** PR: SOC 2000. Theories of the variations in personality in relation to culture and group life in tribal modern societies.
- ANT 3464** **SS 4 (4,0)**  
**Human Microevolution:** A study of the forces of evolution operating within the contemporary human populations, with particular emphasis upon epidemiological areas of research.
- ANT 3511** **SS 4 (4,0)**  
**Physical Anthropology:** PR: ANT 3000 and 3410. The study of man as a product of the evolutionary process. Study and analysis of diversity among present human populations.
- ANT 3512** **SS (4,0)**  
**Biobehavioral Anthropology:** An introduction to the study of human behavior in terms of mutual interaction between human biology and cultural environments.
- ANT 3552** **SS 4 (4,0)**  
**Primateology:** An introduction to the evolution of non-human primates and to contemporary field and laboratory primatological research.
- ANT 4086** **SS 4 (4,0) F**  
**Method and Theory in Anthropology:** PR: ANT 3000 and 3410. Central methodological and theoretical concerns of anthropology in its emergence as a separate discipline and field of study.
- ANT 4705** **SS 4 (4,0) W**  
**Applied Anthropology:** The application of social science to problems of directed social and technological change in industrial as well as non-industrial societies.
- ANT 5937** **SS 4 (4,0)**  
**Proseminar in Anthropology:** An intensive introduction to the study of anthropology. Open to all graduate students and undergraduate students with C.I.
- APB 3263** **HRP 3 (3,0) F**  
**Pulmonary Physiology:** PR: PCB 3703C. Normal ventilation, lung mechanics, pulmonary circulation, diffusion and blood gases.
- APB 3263L** **HRP 1 (0,3) W**  
**Pulmonary Physiology Laboratory:** CR: APB 3263. Experiments and demonstrations concerning ventilation, mechanics, and gas transport.
- APB 3293** **HRP 3 (3,0) S**  
**Respiratory Pathology:** PR: NS ZOO 3733. Cellular pathology with emphasis on pathology of respiratory and cardiovascular systems.
- APB 3293L** **HRP 1 (0,3) S**  
**Respiratory Pathology Laboratory:** CR: APB 3293. Macro—and microscopic identification of respiratory diseases. Gross pathology.
- APB 3535C** **HRP 3 (1,6) S**  
**Serology:** PR: PCB 3233. Laboratory exercises in the production of antibodies, agglutination and precipitin reactions; quantitative techniques and isohemoagglutination.
- APB 3600** **HRP 3 (3,0) S**  
**Introduction to Pharmacology:** Regulatory agencies and the regulation concerning the use of drugs. Review of pharmacological mathematics. Drug absorption and distribution in the human body.
- APB 4610** **HRP 3 (3,0) F**  
**Medical Pharmacology:** PR: APB 3600. Drugs in cardiovascular diseases; effects on nervous system, gastrointestinal tract, and neuroeffectors. Depressants and stimulants; influence on metabolism and endocrines. Anesthetics, chemotherapy. Poisons and antidotes.
- APB 4650** **HRP 3 (3,0) W**  
**Medical Pharmacology II:** PR: APB 4610. Continuation of APB 4610.

- APB 4763C** **NS 4 (3,4) W, odd years**  
**Microbiology of Water and Waste:** PR: MCB 3030 or C.I. Organisms in water and their relationship to production and distribution of potable water; disposal of sewage.
- APB 5581C** **NS 4 (2,4) F, even years**  
**Applied Microbiology:** PR: MCB 3030 or C.I. Microbiology of consumer products: role of microorganisms in world food production and deterioration of consumer products; quality control.
- ARE 4313** **ED 4 (2,2) F,W,S,Su**  
**Art in the Elementary School:** Basic principles, purposes, scope and sequence; organization for instruction; evaluation of activities; selected art experiences.
- ARE 4344** **ED 3 (3,0) F**  
**Secondary School Art Instructional Analysis:** EDF 3255 and EDF 3603 or C.I. Methods and curriculum materials for teaching Visual Arts in the secondary schools.
- ARE 4440** **ED 4 (4,0) W**  
**Two-Dimensional Instructional Materials:** PR: ARE 4313 or ARE 4344 or C.I. Application of two-dimensional materials to appropriate levels of instruction; chalk, ink, water color, crayon, tempera, acrylics, paper, fiber, and oils. Lab TBA.
- ARE 4441** **ED 4 (4,0) F**  
**Graphic Instructional Materials:** PR: ARE 4313 or ARE 4344 or C.I. Application of graphic materials to appropriate level of instruction; direct and indirect basic processes of reproduction of mono and multi-printing. Lab. TBA.
- ARE 4443** **ED (4,0) S**  
**Three-Dimensional Instructional Materials:** PR: ARE 4313 or ARE 4344 or C.I. Application of three-dimensional materials appropriate levels of instruction: wood, paper, plaster, stone, clay, wax fiber, metal, and synthetics, Lab. TBA.
- ARE 4445** **ED 3 (3,0) Su**  
**School Found Arts:** PR: ARE 4440 and ARE 4443 or C.I. Appropriate materials for instruction in public schools will be examined and utilized.
- ARE 4448** **ED 4 (4,0) S**  
**Crafts in the School:** PR: C.I. Lab. TBA, Analysis and methods of teaching Leathercraft, Puppetry, Plastics and other school art related crafts.
- ARE 4643** **ED 3 (3,0) W**  
**Continuing Art Progress in Schools:** PR: ARE 4344 or C.I. Programs and innovations for visual arts in the Schools.
- ARE 4944** **ED 9 (0,30) F,W,S**  
**Secondary School Student Teaching—Block C:** PR: ESE 3940. Senior year student teaching in a secondary school under the direction of a certified classroom teacher.
- ARE 5358** **ED 3 (3,0)**  
**Found Arts:** PR: ARE 4440 and ARE 4443 or C.I. Materials available for instruction in the public schools will be explored in depth in relation to their appropriateness and productive qualities.
- ARE 5444** **ED 3 (3,0)**  
**Jewelry Making in Schools:** PR: C.I. Jewelry making appropriate for school age children using standard public school equipment.
- ARE 5648** **ED 3 (3,0)**  
**Contemporary Visual Arts Education:** PR: ARE 4344 or C.I. Continued study of current programs and innovations in public school Visual Arts Programs.
- ARE 6446** **ED 3 (1,3) F,W,S,Su**  
**Two-Dimensional Instructional Materials:** PR: ARE 4344, and ARE 4440, or C.I. Continued application of two-dimensional materials to appropriate levels of instructional: chalk, ink, water, color, crayon, tempera, acrylics, paper, fiber, and oils.
- ARE 6447** **ED 3 (3,0)**  
**Three-Dimensional Instructional Materials:** PR: ARE 4344, and ARE 4443, or C.I. Continued application of three-dimensional materials to appropriate levels of instruction: wood, paper, plaster, stone, clay, wax, fiber, metal, and synthetics.

- ARE 6449** **ED 3 (3,0)**  
**Graphic Instructional Materials:** ARE 4344, and ARE 4441, or C.I. Continued application of graphic materials to appropriate level of instruction: direct and indirect basis processes of reproduction of mono and multi-printing.
- ARH 2050** **HFA 3 (3,0) F**  
**The History of Art I:** Painting, sculpture and architecture from the Prehistoric Era through the Medieval Period.
- ARH 2051** **HFA 3 (3,0) W**  
**The History of Art II:** Painting, sculpture, and architecture from the Renaissance to the 19th Century.
- ARH 2052** **HFA 3 (3,0) S**  
**The History of Art III:** Painting, sculpture, and architecture of the 19th and 20th Centuries.
- ARH 3118** **HFA 3 (3,0)**  
**Arts of Pre-Literate Societies:** The visual arts in recent and contemporary primitive societies with emphasis on the cultures of Africa and Oceania.
- ARH 3530** **HFA 3 (3,0)**  
**Asian Art:** History of visual arts of China, Japan, India and other Eastern cultures.
- ARH 3710** **HFA 3 (3,0)**  
**History of Photography:** The development of still photography in terms of historical aesthetic, and social impact on Western Culture from 1839 to the present.
- ARH 4071** **HFA 4 (4,0)**  
**Religious Symbolism in the Visual Arts:** A study of the origin, migration, and transmutation of religious signs, symbols and images in art history.
- ARH 4170** **HFA 3 (3,0) F**  
**Greek & Roman Art**
- ARH 4301** **HFA 3 (3,0) F**  
**Renaissance Art**
- ARH 4350** **HFA 3 (3,0) W**  
**Baroque Art**
- ARH 4430** **HFA 3 (3,0) S**  
**19th Century Art**
- ARH 4700** **HFA 3 (3,0)**  
**Art and Technology:** The impact of technological developments in the visual arts of the 20th Century.
- ARH 4730** **HFA 4 (4,0)**  
**Environmental Art:** Analysis of aesthetic design: factors, related to city planning, architecture, product design, and experimental environmental arts.
- ARH 4800** **HFA 3 (3,0)**  
**Theory and Criticism of the Visual Arts:** Criteria of criticism; analysis of works, elements of psychology and sociology of art. Developments in the art of the 20th Century.
- ART 2201C** **HFA 3 (2,4) F**  
**Design Fundamentals I:** Materials, processes, form. Application to product design, communication design, environmental design, and the visual arts. Emphasis on two dimensional design problems.
- ART 2202C** **HFA 3 (2,4) W**  
**Design Fundamentals II:** Continuation of ART 2201. Emphasis on color theory.
- ART 2203C** **HFA 3 (2,4) F,S**  
**Design Fundamentals III:** Continuation of ART 2202. Emphasis on three-dimensional design in the various sculptural media.
- ART 2300C** **HFA 3 (2,4) F**  
**Drawing Fundamentals I:** Drawing as a means of formal organization. Introduction to problems in drawing methods and media. Emphasis on description techniques.

- ART 2301C** **HFA 3 (2,4) W**  
**Drawing Fundamentals II:** Continuation of ART 2300. Emphasis on traditions of spatial organization.
- ART 3100C** **HFA 3 (2,4)**  
**Three-Dimensional Design:** PR: ART 2203, or C. I. Intermediate problems in three-dimensional materials, processes, forms.
- ART 3110C** **HFA 3 (2,4) F,W,S**  
**Ceramics:** PR: ART 2203 or C.I. Basic concepts of ceramic design, experience in processes of forming, decorating, glazing, and firing pottery.
- ART 3230C** **HFA 3 (3,3)**  
**Design in Advertising:** PR: ART 2201C. Principles and techniques. Not open to art majors specializing in graphic design. Intended for visual arts education majors and general university elective.
- ART 3232C** **HFA 3 (3,3) W**  
**Graphic Design II:** PR: ART 3280 or C.I. Methods, materials, and processes related to perceptual studies in graphic design.
- ART 3233C** **HFA 3 (3,3) S**  
**Graphic Design III:** PR: ART 3232, or C.I. Studio problems stressing balance between articulation and succinct presentation of information.
- ART 3280C** **HFA 3 (3,3) F**  
**Graphic Design I:** PR: ART 2201, 2202 or C.I. Study of classical and historic type as graphic design elements.
- ART 3330C** **HFA 3 (2,4) F,S**  
**Intermediate Drawing I:** PR: Six quarter hours of drawing fundamentals or C.I. Intermediate problems in drawing. Emphasis on the human form.
- ART 3331C** **HFA 3 (2,4) F,W**  
**Intermediate Drawing II:** PR: ART 3330-C or C.I. Continuation of Intermediate Drawing I Emphasis on the human form.
- ART 3332C** **HFA 3 (2,4) W,S**  
**Intermediate Drawing III:** PR: ART 3331-C or C.I. Continuation of Intermediate Drawing II Emphasis on the human form.
- ART 3400C** **HFA 3 (2,4)**  
**Printmaking:** PR: Three quarter hours of Drawing Fundamentals or C.I.
- ART 3510C** **HFA 3 (2,4) F,W,S**  
**Painting:** PR: Three quarter hours in Design Fundamentals and three quarter hours in Drawing Fundamentals or C.I.
- ART 3600C** **HFA 3 (2,4) F,W,S**  
**Photography:** PR: ART 2201. Consideration of basic technical and aesthetic factors in using still photography as a vehicle for visual, artistic expression.
- ART 3601C** **HFA 3 (2,4) F**  
**Intermediate Photography:** PR: ART 3600C. Investigation of limited formulas and materials as applied to students portfolio requirement.
- ART 3630C** **HFA 3 (2,4)**  
**Film Design:** Exercises in craft, technique, and design for the film, including animation.
- ART 3631C** **HFA 4 (3,3) W**  
**Cinematography:** PR: ART 3630 or C.I. Consideration of basic technical and aesthetic factors involved in using motion pictures as a vehicle for visual, artistic expression.
- ART 3670C** **HFA 3 (2,4)**  
**Experiments in Art and Technology:** PR: Consent of instructor.
- ART 3701C** **HFA 3 (2,4) F,W,S**  
**Sculpture:** PR: Six quarter hours in Design Fundamentals, to include three quarter hours in three-dimensional work, or C.I.

- ART 4108C** **HFA 3 (2,4)**  
**Advanced Three-Dimensional Design.** PR: ART 3100. May be repeated for credit. Advanced problems in three-dimensional materials, processes, form.
- ART 4111C** **HFA 3 (2,4) F,W,S**  
**Advanced Ceramics:** PR: ART 3110C. May be repeated for credit.
- ART 4130C** **HFA 3 (2,4)**  
**Fibers, Fabrics, Textiles and Synthetics:** Textile design and production, including non-loom weaving processes. May be repeated for credit.
- ART 4166C** **HFA 3 (2,4)**  
**Metals, Woods, Leathers and Stones:** Processes and techniques of production.
- ART 4235C** **HFA 3 (3,3) F**  
**Advanced Graphic Design I:** PR: ART 3233 or C.I. Large scale studio problems involving modern graphic design media.
- ART 4237C** **HFA 3 (3,3) W**  
**Advanced Graphic Design II:** PR: ART 4235 or C.I. Problems initiating search for formulae in graphic design photography.
- ART 4239C** **HFA 3 (3,3) S**  
**Special Problems in Graphic Design:** PR: ART 4237 or C.I. May be repeated for credit.
- ART 4320C** **HFA 3 (2,4)**  
**Advanced Drawing:** PR: ART 3330. May be repeated for credit.
- ART 4402C** **HFA 3 (2,4)**  
**Advanced Printmaking:** PR: ART 3400. May be repeated for credit.
- ART 4530C** **HFA 3 (2,4) F,W,S**  
**Advanced Painting:** PR: ART 3510. May be repeated for credit.
- ART 4604C** **HFA 3 (2,4) F,S**  
**Advanced Photography:** PR: ART 3600. May be repeated for credit.
- ART 4608C** **HFA 3 (2,4)**  
**Special Problems in Photography:** PR: ART 3600 or C.I. A series of directed photographic problems of a research nature. May be repeated for credit.
- ART 4633C** **HFA 4 (3,3)**  
**Advanced Cinematography:** PR: ART 3631. May be repeated for credit.
- ART 4703C** **HFA 3 (2,4) F,S**  
**Advanced Sculpture:** PR: ART 3701. May be repeated for credit.
- ART 4965** **HFA 3 (0,6)**  
**Senior Studio and Exhibition:** PR: By petition (See page 146). Required for all B.F.A. degree candidates. Not open to B.A. degree candidates.
- ASH 3223** **HFA 4 (4,0)**  
**Modern Middle East**
- ASH 3300** **HFA 4 (4,0)**  
**Survey of East Asia:** An introduction to Far Eastern Cultures including India since the Age of the Moguls, China since early European penetration, Japan since the Hermit Kingdom.
- ASH 4404** **HFA 4 (4,0)**  
**China in 19th and 20th Centuries:** The Mongols in China; coming of the Europeans; social structure; Communist movement; Japanese aggression.
- ASH 4442** **HFA 4 (4,0)**  
**Modern Japan, 19th and 20th Centuries:** A survey of the Tokugawa Shogunate; Western contact in the 19th century; World War I; Japanese militarism; World War II; and U.S. occupation.

- AST 1005** **NS 4 (4,0)**  
**Astronomy I:** Descriptive survey of solar system, galaxies and universe. Physical properties of stars deduced from their radiation. Night observation sessions. Appropriate for the Environmental Studies Program.
- BCH 3313** **NS 4 (4,0) S**  
**Clinical Biochemistry:** PR: CHM 2200 or CR: CHM 3212. The biochemistry of proteins, carbohydrates, lipids, and nucleic acids will be developed and used to analyze health-related problems.
- BCH 4053** **NS 3 (3,0) F,W**  
**Biochemistry I:** PR: CHM 3212. A consideration of proteins, carbohydrates, nucleic acids, enzymes and their effect on biochemical systems, and inter-relationship of intermediary metabolism.
- BCH 4054** **NS 3 (3,0) W,S**  
**Biochemistry II:** PR: BCH 4053. Continuation of BCH 4053.
- BCH 4055** **NS 3 (3,0) S**  
**Biochemistry III:** PR: BCH 4054. Continuation of BCH 4054.
- BCH 4103L** **NS 2 (0,6) W**  
**Biochemical Methods:** PR: BCH 1023 or CHM 3212, and CHM 3122. A laboratory course stressing the application of the chemical arts to the separation, identification, and quantification of materials of biological significance.
- BCN 3761** **EN 3 (3,0)**  
**Contracts and Specifications:** Basic legal principles involved in contractual provisions and interrelationships of specifications and the application of such principles.
- BCN 4220** **EN 3 (2,2)**  
**Construction Methods:** Construction principles and the details of the uses of construction materials and the methods utilized for obtaining good construction details.
- BES 3512** **SS 2 (2,0) W,S**  
**Behavioral Weight Control:** Application of behavioral techniques to produce weight loss. Diet, exercise, and behavioral self regulation principles are used in an individual student case study approach.
- BOT 1010C** **NS 4 (2,4) F,W**  
**General Botany:** Introduction to botany; plant structure and function with emphasis on forms and applications important to man.
- BOT 3223C** **NS 4 (3,3) F, odd years**  
**Plant Anatomy:** PR: BOT 1010. A study of the development, structure and function of the principal organs and tissue of vascular plants.
- BOT 3303C** **NS 5 (3,6) F, even years**  
**Plant Kingdom:** PR: BOT 1010. A survey of the plant kingdom utilizing comparative morphology, structure and functions to demonstrate relationships among extant and extinct forms.
- BOT 3713C** **NS 5 (3,6) S, odd years**  
**Plant Taxonomy:** PR: BOT 1010. An introduction to systematic classification and identification of vascular plants with emphasis on the flora of peninsular Florida.
- BOT 3800** **NS 3 (3,0) W, even years**  
**Plants and Man—Ethnobotany:** Man's historical and modern uses of plants economically important in various cultures. Designed for non-majors.
- BOT 3820** **NS 3 (3,0)**  
**Plants and the Urban Environment:** The selection, placement, propagation and care of ornamental plants in residential, and industrial areas. For non-majors.
- BOT 4154** **NS 4 (2,4)**  
**Local Flora:** PR: BOT 1010 or C.I. Recognition and identification of Florida higher plants, especially those common to central Florida, stressing environmental and ethnobotanical significance. Weekend field trips may be required.

- BOT 4403C** **NS 4 (3,3) W, even year**  
**Freshwater Algae:** PR: BOT 1010 or C.I. A lecture-laboratory course to survey the physiologic diversity and ecology of the freshwater algae.
- BOT 4434C** **NS 4 (2,**  
**Mycology:** PR: BOT 3303 or MCB 2013 or C.I. A lecture-laboratory course emphasizing form and function of major fungous groups.
- BOT 4503C** **NS 4 (3,3) W, odd year**  
**Plant Physiology:** PR: PCB 3023, or C.I. A study of mechanisms used by plants to cope with the environment.
- BOT 4623** **NS 3 (3,0) W, odd year**  
**Plant Geography:** PR: PCB 3043 or PCB 4443 or C.I. The major climatic plant formations of the world and historical plant geography.
- BOT 5495C** **NS 4 (3,3)**  
**Bryology:** PR: BOT 3303 or C.I. A lecture-laboratory survey course on the diversity and classification of mosses, liverworts and hornworts with special emphasis on those found in Florida.
- BOT 5705C** **NS 5 (3,6) S, odd year**  
**Plant Biosystematics:** PR: BOT 3713. Evolutionary relationships, plant taxa and populations utilizing cytological, morphological, and biochemical techniques.
- BOT 6146C** **NS 4 (3,3) S, even year**  
**Field Botany:** PR: 12 hours in biological sciences or science teaching experience or C.I. Classification and identification among lower and higher plant groups with emphasis on field experience. Major reference sources reviewed.
- BSC 1010C** **NS 5 (4,2) F,W**  
**Basic Biology:** Basic principles, unifying concepts and facts of modern biology. Introduction to quantitative biological experimentation. For Biological Sciences, Allied Health Sciences and pre-professional majors.
- BSC 1020C** **NS 4 (3,2) F,S**  
**Biological Principles:** A study of various biological factors which affect the health and survival of man in modern society. Meets ESP requirements; designed for non-majors.
- BSC 1030C** **NS 4 (3,3) W**  
**Biology and Environment:** Biological implications of the interaction among human society, population, and technology in relation to the environment and natural systems. Meets ESP requirements; designed for non-majors.
- BSC 4034** **NS 3 (3,0)**  
**Biology and Society:** Biological concepts applied to current human problems—food production, pollution, disease, extinction, and disrupted ecosystems. Meets advanced ESP requirements; designed for non-majors.
- BSC 4103** **NS 3 (3,0)**  
**History of Biology:** PR: C.I. People and events involved in the development of major biological concepts and disciplines. Designed for majors and non-majors.
- BSC 5815** **ED 3 (3,0)**  
**High School Biology Concepts:** PR: Rank III Certificate or C.I. Major concepts in BSCS biology and other modern biology programs.
- BSC 6406C** **NS 3 (2,2) S**  
**Field Methods for Biology:** PR: Two years of biology. Experimental techniques and design in field biological research.
- BSC 6407C** **NS 5 (3,6) F**  
**Laboratory Methods for Biology:** PR: PCB 3023 or MCB 4404. Experimental techniques and design in laboratory biological research.
- BTE 1060** **ED 3 (3,1) F,W,S**  
**Introductory Typewriting:** For the student with no previous instruction in typewriting. Development of basic elements in using the typewriter as a tool of literacy and communications.



- BTE 1061** **ED 3 (3,1) F,W,S**  
**Typewriting Production I:** PR: BTE 1060 or equivalent. Development of skills in speed and accuracy and introduction to skill building procedures.
- BTE 1062** **ED 3 (3,1) F,W,S**  
**Typewriting Production II:** PR: BTE 1061 or equivalent. Expansion of communications production development, speed and accuracy.
- BTE 2063** **ED 3 (3,1)**  
**Principles of Shorthand I:** PR: Concurrent enrollment in BTE 1060 or equivalent. For students with no previous instruction in shorthand. Introduction to basic theory of Gregg Shorthand, vocabulary development, and speed building.
- BTE 2064** **ED 3 (3,1)**  
**Principles of Shorthand II:** PR: BTE 1061 or BTE 2063 or equivalents. A continuation in the study of shorthand theory, vocabulary development, and speed building.
- BTE 2065** **ED 3 (3,1)**  
**Principles of Shorthand III:** PR: BTE 1061 and BTE 2064 or equivalents. Development and refinement of sustained dictation, speed and vocabulary.
- BTE 3151** **ED 3 (3,1)**  
**Shorthand Dictation:** PR: BTE 1061 and BTE 2065 or equivalents. Continued development of shorthand dictation and introductory communications production.
- BTE 3152** **ED 3 (3,1)**  
**Shorthand Transcriptions:** PR: BTE 1061 and BTE 3151. Gregg Shorthand dictation and refinement of communications production.
- BTE 3266** **ED 4 (2,2) F,W,S,Su**  
**Office Technology:** PR: BTE 1060 or C.I. Basic operation and function of technological media in modern business offices, including word processing equipment.
- BTE 3391** **ED 4 (3,2)**  
**Business Instructional Analysis I:** PR: EDF 3255 and EDF 3603. Techniques, materials, and instructional media; psychological principles, evaluation, and current trends in typewriting instruction.
- BTE 4154** **ED 4 (2,4) W**  
**Office Simulation:** PR: BTE 4265 and Senior standing. A study of performance in the tasks of the contemporary office, its structure, concepts and dynamics.
- BTE 4265** **ED 3 (3,0)**  
**Office Systems and Procedures:** PR: BTE 3152. Study of the responsibilities of the executive secretary and office supervisor; records management, travel services, case studies in human relations in executive level job performance.
- BTE 4392** **ED 3 (3,0)**  
**Business Instructional Analysis II:** PR: EDF 3255 and EDF 3603. Techniques, materials, and instructional media; psychological principles, evaluation and current trends in shorthand and related instruction.
- BTE 4393** **ED 3 (3,0)**  
**Business Instructional Analysis III:** PR: EDF 3255 and EDF 3603. Techniques, materials, and instructional media; psychological principles, evaluation, and current trends in accounting and basic business instruction.
- BTE 6172** **ED 4 (4,0)**  
**Business Education Curriculum:** PR: Rank III Certificate or C.I. Curriculum planning and development; objectives; innovations, problems and issues in contemporary Business programs.
- BTE 6374** **ED 3 (3,0)**  
**Research in Typewriting Instruction:** PR: Rank III Certificate or C.I. Techniques, materials, and instructional media, psychological principles, evaluation, and research related to instruction in typewriting.
- BTE 6771** **ED 3 (3,0)**  
**Evaluation and Research in Business Education:** Rank III Certificate or C.I. A study of standard-

ized and prognostic tests; functions, construction, administration, and evaluation of measurement instruments; research techniques for business education.

**BTE 6772** **ED 3 (3,0)**

**Shorthand Instructional Techniques:** PR: Rank III Certificate or C.I. Techniques, materials, and instructional media; psychological principles, evaluation, and research related to instruction, in shorthand.

**BTE 6773** **ED 4 (3,4)**

**Office Simulation Techniques:** PR: Rank III Certificate or C.I. Methods of office simulation for teachers at the developmental and performance levels.

**BTE 6774** **ED 3 (3,0)**

**Basic Business Teaching Techniques:** PR: Rank III Certificate or C.I. Techniques, materials, and instructional media; psychological principles, evaluation and research related to instruction of basic business courses in high schools.

**BTE 6946** **ED 3 (3,0)**

**Practicum-Data Processing, Office Technology:** PR: Rank III Certificate or C.I. Techniques, materials, and instructional media; evaluation, and new trends of instruction with special emphasis on data processing for teachers.

**BTE 6947** **ED 3 (3,0)**

**Practicum-Consumer Education:** PR: Rank III Certificate or C.I. Consumer competencies and methods for teaching students intelligent consumption of goods and services in the free enterprise system.

**BUL 3111** **BA 3 (3,0) F,W,S,Su**

**Legal Environment of Business:** The presentation of law as an expanding social and political institution in the environment of the business enterprise.

**BUL 3112** **BA 3 (3,0)**

**Business Law I:** PR: BUL 3111. Recognized commercial organizations and their functions in the business world.

**BUL 3121** **BA 3 (3,0)**

**Business Law II:** PR: BUL 3112 desirable. An examination of the law underlying the transfer and sale of goods, commercial paper and secured transactions including their interaction with the commercial environment.

**BUL 3301** **BA 3 (3,0)**

**Property Law:** PR: BUL 3111, Junior Standing. Includes bailments, real and personal property, and security interests therein, insurance, suretyship and guaranty.

**BUL 5125** **BA 3 (3,0)**

**Business Environment and Business Law:** PR: Acceptance into the graduate program. An analysis of the legal and socio-economic environment surrounding business practices as affected by significant State and Federal legislation and regulation.

**CAP 3001** **NS 3 (3,0) F,W,S,Su**

**Computer Fundamentals for Business Applications I:** Hardware/software for business data processing; survey of business applications programs; study of prewritten programs (batch and interactive); writing programs in high level language.

**CAP 3002** **NS 3 (3,0)**

**Computer Fundamentals for Business Applications II:** PR: CAP 3001 or equivalent. Introduction to computer programming for business applications using RPG or BASIC Languages.

**CAP 3006** **NS 3 (3,0)**

**Analysis of Computer Systems and Hardware Capabilities:** PR: CAP 3002. Characteristics of computers and related equipment from business usage standpoint. Techniques of measuring hardware and system performance, benchmarking, task mix parameters, simulation and configuration analysis.

**CAP 3007** **NS 3 (3,0)**

**Data Structures and Operating Systems for Business:** PR: CAP 3002. Data set structures and relations to file activity. Operating system services, multiprogramming, accounting, background-foreground processing, overhead cost analysis.

- CAP 4401** **NS 3 (3,0) W**  
**Health Information Computer Systems:** PR: CAP 3001. Survey of computerized health information systems, application of automated data processing techniques for compiling, storing and retrieving medical records. Not open to computer science majors.
- CAP 5101** **NS 3 (3,0)**  
**Applications of Computers in Education:** PR: At least one programming course; intended for secondary teachers and administrators. A survey of current developments of the computer in the educative process; computer-assisted instruction, computer-managed instruction, academic counseling, simulation and games.
- CAP 5612** **NS 4 (4,0)**  
**Computer Based Educational Systems:** PR: COP 4550 or equivalent. The design and implementation of computer based educational systems. Selected projects using high-level programming languages.
- CAP 5623** **NS 4 (4,0)**  
**Heuristic Programming:** PR: COP 5554 or equivalent. Design and development of Heuristic problem-solving systems; knowledge structures, control structures heuristics; application areas include game playing, theorem proving, robotology, machine and human learning.
- CAP 5722** **NS 3 (3,0)**  
**Computer Graphics Systems I:** PR: CDA 3151 or equivalent. Architecture of graphics processors; display hardware; principles of programming and display software; problems and applications of graphic systems.
- CAP 5746** **NS 4 (4,0)**  
**Simulation/Performance of Computer Systems:** PR: CDA 5106 and COP 5613. Performance measurement of hardware and software systems, simulation techniques, monitoring programs.
- CAP 6723** **NS 3 (3,0)**  
**Computer Graphic Systems II:** PR: CAP 5722. Modeling design and analysis of graphics systems; data structures, numerical techniques, algorithms and optimum seeking methods for various problems in computer graphics.
- CAP 6744** **BA 3 (3,0)**  
**Simulation of Dynamic Systems:** PR: Graduate Standing. A survey of techniques for conducting simulation experiments on digital computers. These experiments involve mathematical and logical models of a business or economics system.
- CBH 3003** **SS 4 (4,0)**  
**Comparative Psychology:** PR: PSY 2013 and PSY 2014. A study of comparative behaviors of lower animals.
- CCJ 2020** **SS 4 (4,0) F,W,S,Su**  
**Introduction to Criminal Justice:** A survey of the field of criminal justice including crime, the history of law enforcement and the structure of the criminal justice system.
- CCJ 3010** **SS 4 (4,0) F,Su**  
**Crime in America:** A survey of crime and criminality in the United States with emphasis on crime data, its weaknesses, causation, and types of criminal behavior.
- CCJ 3020** **SS 4 (4,0) F,S**  
**Criminal Justice System:** Examination of the system of criminal justice; its goals, processing of cases and persons, and conflicts between components.
- CCJ 3260** **SS 4 (4,0) F,S**  
**Criminal Law in Action:** Basic concepts of criminal law, their origin and development, constitutional and procedural rules; and Federal and State relations.
- CCJ 3290** **SS 4 (4,0) W,Su**  
**Prosecution and Adjudication:** Examination of structures and goals of offices of prosecution and criminal trial courts, and of the processes of charging, adjudicating and sentencing defendants.
- CCJ 3300** **SS 4 (4,0) F,W,S**  
**The Correctional and Penal Systems:** Theories, structures and methods of institutional and non-institutional services in the rehabilitation of criminal offenders.

- CCJ 3330** **SS 4 (4,0) F**  
**Probation and Parole:** Analysis of probation and parole services and systems; the organization, administration and management of treatment and field services for various types of public offenders.
- CCJ 3400** **SS 4 (4,0)**  
**Municipal Police Administration:** PR: CCJ 2020. Study of contemporary operational concepts of administration with an emphasis on function, rather than structure.
- CCJ 3430** **SS 4 (4,0) S,Su**  
**The Criminal Justice Manager:** PR: C.I. Elements of first-line supervision and executive development. Administrative leadership; its nature; methods and traits.
- CCJ 3451** **SS 4 (4,0) W**  
**Justice System Technology:** Examination of the relevance of scientific and technological developments to justice systems and their applicability to the operations and management of the systems.
- CCJ 4440** **SS 4 (4,0) S**  
**Corrections Administration:** Organization, administration and operation of short and long term detention facilities or institutions including classification, treatment, security, supervision and prison sub-culture problems.
- CCJ 4450** **SS 4 (4,0) Su**  
**Justice Policy and Social Conflict:** The effects of social conflicts and political decisions on the administration of justice, stressing the law enforcement role.
- CCJ 4470** **SS 4 (4,0) S**  
**Financial Administration and Budgeting:** PR: C.I. Police budgets as instruments of policy making and management. Financial, fiscal, administrative and legal aspects.
- CCJ 4481** **SS 4 (4,0) F**  
**Police and the Community:** Police relationships with citizenry. Ethnic and social conflict in relation to law enforcement, and how police deal with groups, crowds, gangs, and nonconformist cultures.
- CCJ 4540** **SS 4 (4,0) W**  
**Delinquency Control:** Examination of programs and institutions including juvenile court process, intake services, and remedial procedures and practices.
- CCJ 4630** **SS 4 (4,0) W**  
**Comparative Justice Systems:** A survey of contemporary foreign criminal justice systems, differences emerging from various cultural and legal systems.
- CCJ 4941** **SS 6-12 (0,20-40) F,W,S,Su**  
**Criminal Justice Internship:** PR: C.I. Internship in municipal, county, state or federal criminal justice agency. Includes assignments in police, courts, corrections components.
- CDA 3151** **NS 4 (3,2)**  
**Minicomputer Programming/Laboratory:** PR: COP 3402. System and user defined macros, debugging techniques, introduction to an operating system, files, bootstrap loaders, tasking, diagnostic routines, introduction to microprogramming. Uses Varian 73 minicomputer.
- CDA 4102** **NS 4 (4,0)**  
**Introduction to Computer Architecture:** PR: CDA 3151, EEL 3341. Survey of machine instructions, processor characteristics, and microprogramming concepts.
- CDA 4142** **NS 4 (3,2)**  
**Microcomputer Organization:** PR: CDA 3151. An analysis of a microcomputer's organization, and chip set with emphasis on a system programming.
- CDA 4143** **NS 4 (3,2)**  
**Microcomputer Interfacing/Software:** PR: CDA 4142. A survey of current peripheral hardware available for microprocessors; how a wide range of devices are interfaced to a microcomputer with an emphasis in software.
- CDA 4144** **NS 4 (3,2)**  
**Microcomputer Applications:** PR: CDA 4143. A case study investigation into several commercial available microprocessor based systems.

- CDA 4161** **NS 4 (4,0)**  
**Programming for Large Scale Digital Systems:** PR: COP 3402, CDA 3151. Programming techniques and instruction sets for large scale digital computers.
- CDA 5106** **NS 4 (4,0)**  
**Analysis of Computer Architecture:** PR: CDA 4102. Analysis of computer systems organization: minicomputers, microprocessors, microcomputers, and large scale digital architectures are discussed.
- CDA 6107** **NS 4 (4,0)**  
**Microprogrammed Computer Architectures:** PR: CDA 5106. A continuation of CDA 5106 with an emphasis on microprogramming and processor design.
- CDA 6108** **NS 4 (4,0)**  
**Computer Architecture, Design and Evaluation:** PR: EDA 6107. Automated testing, fault tolerance, microprogrammed I/O, pipelining, cache memories, bit slice designs, computer hardware design languages, and performance measurement.
- CDA 6166** **NS 3 (3,0)**  
**Computer-Based Communications Networks:** PR: CDA 5106 and COP 5613. Functions of communications systems, communication system hardware, communication system organization and structure, examples.
- CES 4124** **EN 4 (4,0)**  
**Structural Engineering Analysis:** PR: EGN 3331. Analysis of statically indeterminate structures by flexibility and stiffness methods, and energy methods. Analysis of columns.
- CES 4144** **EN 4 (4,0)**  
**Matrix Methods of Structural Analysis:** PR: EGN 3331. Structural analysis of beams, frames, and plates by matrix methods.
- CES 4605** **EN 4 (4,0)**  
**Structural Steel Design:** PR: CES 4124 or C.I. Design of steel structural members. Selected topics in beam design, column design, plastic design, connections and built-up members.
- CES 4704** **EN 4 (4,0)**  
**Structural Concrete Design:** PR: CES 4124 or C.I. Principles of designing reinforced concrete members. Selected topics in concrete mixes, beams, columns, and ultimate analysis.
- CES 5102** **EN 4 (4,0)**  
**Intermediate Mechanics of Materials:** PR: EGN 3331 and MAP 3305. Elements of plane elasticity; failure theories; curved beams; columns; bending and torsion of thin-walled structures; theory of thin plates; applications to design.
- CES 5107** **EN 4 (4,0)**  
**Matrix Structural Analysis:** PR: CES 4144 or equivalent. Optimization and matrix methods applied to the design of real structures.
- CES 5608** **EN 3 (3,0)**  
**Structural Engineering Design:** PR: CES 4124, CES 4605, and 4704. Project course on design of steel and concrete structures.
- CES 6129** **EN 4 (4,0)**  
**Analysis of Plates and Shells:** PR: CES 5102 or C. I. Theory of bending of thin plates. Energy and approximation techniques. Non-linear behavior of plates. Theory of thin shells with small deformations.
- CES 6209** **EN 3 (3,0)**  
**Dynamics of Structures:** PR: EML 5271 or C.I. Dynamic behavior of linear structures. Natural vibrations of structural systems. Damping in structures. Response to periodic and non-periodic excitations. Emphasis on matrix methods.
- CES 6218** **EN 3 (3,0)**  
**Structural Stability:** PR: CES 5102 or C.I. Analysis of structural elements. Columns, Frameworks, Lateral stability. Introduction to the stability of plates. Energy and approximate methods.
- CES 6606** **EN 3 (3,0)**  
**Steel Design:** PR: CES 4605 or equivalent. Design of complete steel structures to include economics, plastic design and real building examples.

- CES 6707** **EN 3 (3,0)**  
**Concrete Design:** PR: CES 4704 or equivalent. Design of concrete structures to include economics, slabs, prestressed concrete, and real building examples.
- CHM 1034** **NS 5 (4,2) F,W,Su**  
**General Chemistry:** An introductory study of the fundamental concepts of chemistry, oriented toward AHS and Biology Education majors.
- CHM 2045** **NS 4 (4,0) F,W,Su**  
**Chemistry Fundamentals I:** PR: High School Chemistry or CHM 1034. Basic physical theory of chemical reactivity, atomic structure, chemical bonding, periodicity, stoichiometry, equilibria, thermodynamics, and kinetics.
- CHM 2046** **NS 3 (3,0) F,W,S**  
**Chemistry Fundamentals II:** PR: CHM 2045. Continuation of CHM 2045.
- CHM 2046L** **NS 1 (0,3) F,W,S**  
**Chemistry Fundamentals Laboratory:** PR: CHM 1034 or CR: CHM 2046. Illustration chemical principles and introduction to the techniques of inorganic and physical chemistry.
- CHM 2047** **NS 3 (3,0) W,S,Su**  
**Chemistry Fundamentals III:** PR: CHM 2046. Continuation of CHM 2046.
- CHM 2120C** **NS 2 (1,3) F,S**  
**Analytical Fundamentals:** PR: CHM 2046. Development of basic analytical skills and problem practice in stoichiometry, solution chemistry, and oxidation-reduction.
- CHM 2200** **NS 4 (4,0) F,W**  
**Introductory Organic Chemistry:** PR: CHM 1034 or CHM 2047. A survey of organic chemistry stressing its applications to our society. The chemistry of functional groups will be related to industrial and natural processes.
- CHM 2205L** **NS 1 (0,3) S**  
**Organic-Biochemistry Laboratory:** PR: CHM 2200 CR: BCH 3313. An introduction to organic and biochemical laboratory operations.
- CHM 3121C** **NS 3 (2,3) F,W**  
**Analytical Chemistry I:** PR: CHM 2120C. Lecture-Laboratory. Laboratory practice of classical and instrumental methods. Emphasis on problem solutions and choice of analytical procedure.
- CHM 3122C** **NS 3 (1,6) W,S**  
**Analytical Chemistry II:** PR: CHM 3121C. Continuation of CHM 3121.
- CHM 3210** **NS 4 (4,0) F,W**  
**Organic Chemistry I:** PR: CHM 2047. Theory and applications of organic chemistry: structure, bonding, kinetics, thermodynamics, reaction mechanisms, synthesis, and stereochemistry. Structure elucidation via spectrometric techniques.
- CHM 3211** **NS 3 (3,0) W,S**  
**Organic Chemistry II:** PR: CHM 3210. Continuation of CHM 3210.
- CHM 3211L** **NS 2 (0,6) W,S**  
**Organic Laboratory Techniques I:** PR: CHM 3210. An introduction to the laboratory techniques of organic chemistry including the preparation, reaction, and analysis of organic compounds.
- CHM 3212** **NS 3 (3,0) S,Su**  
**Organic Chemistry III:** PR: CHM 3211. Continuation of CHM 3211.
- CHM 3212L** **NS 2 (0,6) F**  
**Organic Laboratory Techniques II:** PR: CHM 3211 and CHM 3211L. Open-end laboratory to develop synthesis, techniques and structure elucidation skills.
- CHM 3410** **NS 5 (4,2) F**  
**Physical Chemistry I:** PR: CHM 2047, PHY 2041, and MAC 3312. Rigorous treatment of atomic and molecular structure, thermodynamics, kinetics, and chemical bonding.
- CHM 3411** **NS 3 (3,0) W**  
**Physical Chemistry II:** PR: CHM 3410. Continuation of CHM 3410.

- CHM 3411L** **NS 2 (0,6) W**  
**Physical Chemistry Laboratory I:** PR: CHM 3121C and CHM 3410. Classical as well as modern instrumental techniques coupled with computer data processing to measure physical properties and determine atomic and molecular parameters.
- CHM 3412** **NS 3 (3,0) S**  
**Physical Chemistry III:** PR: CHM 3411. Continuation of CHM 3411.
- CHM 3412L** **NS 2 (0,6) S**  
**Physical Chemistry Laboratory II:** PR: CHM 3411 and CHM 3411L. Continuation of CHM 3411.
- CHM 4020** **NS 3 (3,0)**  
**Chemistry in Society:** Chemical processes related to everyday living and/or topics of current concern to society. Meets advanced ESP requirements: designed for non-majors.
- CHM 4130C** **NS 5 (3,6) F**  
**Advanced Analytical Laboratory Technique:** PR: CHM 3212, CHM 3121, and CHM 3412. A lecture-laboratory course designed to give in-depth coverage to modern methods of analysis including electrochemistry, spectroscopy, and separation techniques.
- CHM 4160C** **NS 3 (1,6) W, even years**  
**Analytical Methods Development:** PR: CHM 3122C. A lecture-laboratory course in which students propose and evaluate procedures for inorganic and organic analyses.
- CHM 4220** **NS 3 (3,0) F, odd years**  
**Advanced Organic Chemistry I:** PR: CHM 3212 and CR: CHM 3410. Theoretical and physical-organic concepts of organic systems from the perspective of modern structural theory, thermodynamics and kinetics.
- CHM 4221** **NS 3 (3,0) F, even years**  
**Advanced Organic Chemistry II:** PR: CHM 3212 and CR: CHM 3410. A study of class reactions from a mechanistic and synthetic viewpoint and including recent and developing areas of importance.
- CHM 4580** **NS 3 (3,0) S, even years**  
**Advanced Physical Chemistry:** CR: CHM 3412 and PR: MAC 3314. Selected topics of thermodynamics, kinetics, quantum mechanics, and structure.
- CHM 4610** **NS 4 (4,0) S**  
**Inorganic Chemistry:** CR: CHM 3412. A discussion of descriptive inorganic chemistry based on various bonding theories, thermodynamics and kinetics.
- CHM 5710** **NS 3 (3,0) W**  
**Chemical Structure I:** PR: CHM 3212, 3122C, and 3412; or equivalent. Concepts in molecular structure and the relationships between structure and the chemical and physical properties of a substance.
- CHM 5711** **NS 3 (3,0) S**  
**Chemical Structure II:** PR: CHM 5710. Continuation of CHM 5710.
- CHS 3501** **NS 4 (4,0) W,Su**  
**Introduction to Forensic Science:** Intended for non-majors to provide an appreciation for the ways in which forensic science serves the civil and criminal justice system.
- CHS 3511** **NS 4 (2,6) F**  
**Criminalistics I:** PR: CHM 2047 or C.I. Examination and evaluation of evidence obtained from suspect criminal actions, including the microscopy of trace evidence.
- CHS 3512** **NS 4 (2,6) W**  
**Criminalistics II:** PR: CHS 3511. Continuation of CHS 3511.
- CHS 3521** **NS 4 (2,6) W**  
**Civilistics:** PR: CHS 3511. Examination and evaluation of evidence from civil actions involving water and air pollution, public safety, and product design.
- CHS 3531** **NS 4 (2,6) S**  
**Forensic Analysis Techniques:** PR: CHM 3121. Study of separation, purification, quantitative, and instrumental techniques in drug and narcotic analysis toxicology, blood factor, and enzyme identification.

- CHS 4110C** **NS 3 (2,3) S, odd years**  
**Nuclear and Radiochemistry:** PR: CHM 3122C and CR: CHM 3411. A lecture-laboratory course examining theories of fundamental particles, the chemical effects of nuclear transformations and the special uses of isotopes.
- CHS 4200** **NS 3 (3,0) W, odd years**  
**Concepts in Industrial Chemistry:** PR: CHM 3410. An introduction to industrial practices emphasizing the application of chemical principles in the development of a commercial process or product.
- CHS 4591** **NS 4 (0,40)**  
**Forensic Science Internship:** PR: C.I. Credit for full-time work (10-12 Weeks) in a professional forensic laboratory. This course may be repeated for credit.
- CHS 5240** **NS 2 (2,0) F**  
**Chemical Dynamics I:** PR: CHM 3412 or equivalent. Dynamics of chemical reactions and physical processes including equilibrium systems catalysis, transport processes and physical phenomena at interfaces.
- CHS 5241** **NS 4 (4,0) W**  
**Chemical Dynamics II:** PR: CHS 5240. Continuation of CHS 5240.
- CHS 5250** **NS 3 (3,0) F**  
**Chemical Synthesis I:** PR: CHM 3212, 3211, and 3412; or equivalent. Survey of chemical synthesis from the standpoint of planning a synthesis, intermediates, special techniques, protection of functional groups, experimental design and optimization of reaction conditions.
- CHS 5251** **NS 3 (3,0) S**  
**Chemical Synthesis II:** PR: CHS 5250. Continuation of CHS 5250.
- CHS 3260C** **NS 3 (1,6) F**  
**Separation Process:** PR: CHM 3211 and CHM 3412; or equivalent. A study of the basic operations utilized in separation processes. Topics will include distillation, azeotropic distillation, solvent extraction, absorption, crystallization, filtration and ion exchange.
- CHS 6261** **NS 3 (3,0) W**  
**Chemical Processes:** PR: CHS 6260 or equivalent. Case study approach which reviews strategy in the development of selected chemical processes.
- CHS 6262C** **NS 3 (2,3) S**  
**Process Kinetics and Control:** PR: CHM 3122 and CHS 6261; or equivalent. A case study approach analyzing kinetic data and techniques used in the design of reactors and process control systems.
- CHS 6263** **NS 2 (2,0) F**  
**Chemical Process Economics:** PR: C.I. Consideration of the various cost factors involved in economics of a chemical process and methods used in evaluating relative economics of various processes.
- CIS 4112** **NS 3 (3,0)**  
**Database Processing:** PR: COP 4530. I/O processing. File organization and access. Database technology. Commercial database systems. Database management system requirements.
- CIS 4323** **NS 3 (3,0)**  
**Data Processing Systems Analysis and Design:** PR: COP 4530. Data organization. Logical structure. Data base analysis and design.
- CIS 4324** **NS 3 (3,0)**  
**Data Processing Systems Implementation:** PR: CIS 4323, 4112 System implementation project. Selected topics of interest.
- CIS 5012** **NS 4 (4,0)**  
**Information and File Systems Analysis:** PR: COP 4530 or equivalent. Logical and physical information system design. Analysis of file systems. Introduction to data management systems.
- CIS 5041** **NS 4 (4,0)**  
**Information Organization and Retrieval:** PR: CIS 5012. Automatic analysis of information content in natural language text for automatic retrieval. Construction of dictionaries, null, synonym, etc. Recall and precision. Interactive feedback.



- CIS 6122** **NS 4 (4,0)**  
**Data Base Management Systems:** PR: CIS 5012. Data base development. Generalized data management systems. Data description and data models. Query languages. Study of available systems.
- CIS 6124** **NS 4 (4,0)**  
**Data Base Management Systems Theory:** PR: CIS 6122. Theory of data models, data languages and data base management systems.
- CLP 3003** **SS 4 (4,0)**  
**Psychology of Adjustment:** Psychological principles of adjustment; application of psychology to problems in living.
- CLP 3143** **SS 4 (4,0)**  
**Abnormal Psychology:** PR: PSY 2013 and PSY 2014. Classification, causation, and treatment of deviant patterns of behavior.
- CLP 4440** **SS 5 (2,3)**  
**Individual Intelligence Testing:** PR: PSY 3302. The nature of intelligence and its measurement. Training in Stanford-Binet and Wechsler testing. Lec.-Lab.
- CLP 6416** **SS 4 (2,2)**  
**Biofeedback and Stress:** PR: Graduate admission and C.I. Assessment and management of physiological stress response through biofeedback. Biofeedback treatment of stress produced clinical problems.
- CLP 6437** **SS 4 (4,0)**  
**Implementation and Evaluation:** PR: Graduate admission and C.I. Strategies and procedures for evaluating programs in community and school settings.
- CLP 6441** **SS 4 (3,2) F**  
**Psychological Assessment I:** PR: Graduate admission and C.I. Theories and techniques of psychological assessment with primary emphasis on intellectual assessment, interviewing skills & report writing.
- CLP 6445** **SS 4 (3,2) S**  
**Psychological Assessment II:** PR: CLP 6441, graduate admission theories and techniques of psychological assessment with primary emphasis on objective and projective techniques of personality assessment, interviewing skills and report writing.
- CLP 6456** **SS 4 (3,2) F**  
**Clinical Intervention I:** PR: Graduate Admission and C.I. Introduction to Counseling Theory, Experiential Lab.
- CLP 6457** **SS 4 (3,2) W**  
**Clinical Intervention II:** PR: Graduate Admission and C.I. Group Counseling: Theory and Process. Experiential Group Lab.
- CLP 6458** **SS 4 (3,2) S**  
**Clinical Intervention III:** PR: Grad Admission and C.I. Introduction to the principles and procedures of behavior modification as a clinical intervention technique.
- CLP 6459** **SS 4 (3,2) S**  
**Clinical Intervention IV:** PR: CLP 6441, 6445, 6456, 6457, 6458, EDP 6108. Graduate admission and C.I. Survey of theory and techniques in crisis intervention, family therapy, couples therapy and sex therapy.
- CLP 6932** **SS 2 (2,0) S**  
**Ethical and Professional Issues in Clinical Psychology:** PR: C.I. and Graduate Admission. Examination of APA Code of Ethics as applied to clinical situations. Topics include confidentiality, commitment procedures, licensing laws.
- CNM 4110** **NS 4 (4,0)**  
**Numerical Calculus:** PR: COP 2511 or COP 3215 and MAC 3314. Numerical methods for finding roots of nonlinear equations, solutions of systems of linear equations, and ordinary differential equations.

- CNM 5142** **NS 4 (4,0)**  
**Computational Methods/Linear Systems:** PR: CNM 4110 or MA 3113. Mathematical models for linear systems, linear programming, the simplex method, integer and mixed-integer programming, introduction to nonlinear optimization and linearization.
- CNM 6144** **NS 4 (4,0)**  
**Computational Methods/Analysis I:** PR: CNM 5142. Analysis of direct and iterative solutions of systems of linear equations, eigenvalues and vectors and roots of nonlinear equations, error analysis.
- CNM 6145** **NS 4 (4,0)**  
**Computational Methods/Analysis II:** PR: CNM 6144. Analysis of numerical methods for approximation, integration and solutions of ordinary differential equations. Lagrange polynomials, splines, Gaussian quadrature, Fourier series. Stability and illconditioning Error analysis.
- COC 1100** **NS 4 (4,0) F,W,S**  
**Introduction to Computer Science:** History, typical computer, number systems, control and data flow, peripheral components, memory devices, effects of computers on society, applications of computers.
- COC 3024** **NS 3 (3,0)**  
**Personal Computing:** Survey of personal computers available on the market; applications for education, entertainment and clerical work; programming in Basic with exercises.
- COM 1000** **SS 4 (4,0) F,W,S,Su**  
**Basic Communication:** Survey of basic factors affecting human interaction through communication; theories and models of communication; contributions of behavioral sciences and related arts; mass media in society.
- COM 3110** **SS 4 (4,0) F,W,S,Su**  
**Business and Professional Communication:** PR: SPC 1014 or C.I. Theoretical and practical training in effective presentational speaking for business and professions.
- COM 3120** **SS 4 (4,0) F,S**  
**Organizational Communication:** A study of communication functions and problems within the contexts of hierarchies.
- COM 3311** **SS 4 (4,0) F,W,S,Su**  
**Communication as a Behavioral Science:** Basic principles of the behavioral science approach to the study of contemporary communication.
- COM 4020** **SS 4 (4,0)**  
**Informational Communication:** An examination of available communication systems (non-technical) and their utilization within business, educational, entertainment, industrial, medical, and military organization.
- COM 6121** **SS 4 (4,0)**  
**Communications Management:** PR: C.I. Analysis and development, with reference to particular media. Organizational theory, structure and behavior. Management principles and operations.
- COM 6300** **SS 4 W**  
**Introduction to Graduate Study in Communication:** This course is designed to introduce the student to practical and theoretical considerations for independent research in communication.
- COM 6312** **SS 4 S**  
**Research Methods:** PR: COM 6300 or C.I. Provides practical experience in the development and execution of empirical research. Hypothesis development, research methodology, and data analysis are covered.
- COM 6314** **SS 4 (4,0)**  
**Audience Measurement:** PR: C.I. Examination and review of audience measurement techniques. Individuals assignments for compilation and analysis of measurement data.
- COM 6426** **SS 4 (4,0) W**  
**Information and Educational Systems:** PR: C.I. Sources, processing and transmittal of educational

and informational materials (software) used in educational broadcast systems, information retrieval systems, learning machines, etc.

**COP 1110**

**NS 3 (3,0) F,W,S**

**Computer Programming:** PR: College Algebra and Trigonometry or equivalent. Problem definitions, algorithms, flow charts, digital computer programming using a higher level language (FORTRAN).

**COP 2510**

**NS 3 (3,0) F,W,S**

**Programming I:** PR: College Algebra and College Trigonometry or equivalent. Algorithm concepts; basic programming concepts and techniques, flow of control character handling, data techniques; programming style; computer experienced in a procedure-oriented language (PL/1).

**COP 2511**

**NS 3 (3,0) F,W,S**

**Programming II:** PR: COP 2510. Continuation of basic programming concepts, arrays, procedures, structures, recursion, storage; sorting and searching algorithms; continued computer experience in a procedure-oriented language (PL/1).

**COP 3120**

**NS 3 (3,0) F,S**

**Cobol I:** PR: At least one programming course or equivalent experience. Basic COBOL programming, preparation of business reports, laboratory projects.

**COP 3121**

**NS 3 (3,0) W**

**Cobol II:** PR: COP 3120. Processing sequential, indexed and random files; advanced topics system utility programs and laboratory projects.

**COP 3215**

**NS 3 (3,0)**

**Programming and Numerical Methods:** CR: MAC 3312. Problem definitions, algorithms, flow charts, digital computer programming using FORTRAN for numerical applications.

**COP 3402**

**NS 4 (3,3)**

**Assembly Language Programming:** PR: COP 2511 or equivalent programming experience. Computer structure, data representation, addressing schemes, looping techniques, subroutines, direct input/output, assembly language programming, basic assembler organization. Uses Varian 73 minicomputer.

**COP 3522**

**NS 3 (3,0)**

**Structured Programming:** PR: COP 2511 or equivalent. Concepts of structured programming; files structure; advanced features of PL/1; programming in an interactive mode.

**COP 4530**

**NS 4 (4,0)**

**Data Structures:** PR: COP 3402 and COP 3515. Basic concepts of data; linear lists, strings, arrays, and orthogonal lists; ordering or sorting techniques; recursion; string and list processing languages.

**COP 4550**

**NS 4 (4,0)**

**Programming Languages I:** PR: COP 4530. Features of high-level programming languages; introduction to compiling and interpreting techniques; SNOBOL and LISP.

**COP 4620**

**NS 4 (4,0)**

**Programming Systems:** PR: CDA 3151 and COP 4530. The function and organization of operating systems. Design and implementation considerations regarding operating systems, compilers, assemblers and loaders.

**COP 5554**

**NS 4 (4,0)**

**Programming Languages II:** PR: COP 4550 or equivalent. A formal study of programming language design and specification, BNF grammars models of semantics, compilers and interpreters.

**COP 5613**

**NS 4 (4,0)**

**Operating System Design Principles:** PR: COP 4620 or equivalent. The structure and functions of operating systems, process communications techniques, scheduling algorithms, deadlocks, memory management, virtual systems, protection and security.

**COP 6555**

**NS 3 (3,0)**

**Philosophy of Programming/Languages:** PR: COP 5551 or equivalent. Basic principles of software physics including program level, effort, impurity classes and execution. Language comparison project using tools of software physics: semantic characterization of languages.

- COP 6614** **NS 4 (4,0)**  
**Operating Systems:** PR: COP 5613. Scheduling theory, queuing theory deadlock prevention algorithms, multiprocessor systems, paging algorithms.
- COP 6615** **NS 4 (4,0)**  
**Operating Systems Theory:** PR: COP 6614. Theory of operating systems for computer systems including multiprocessor systems and computer networks.
- COP 6642** **NS 4 (4,0)**  
**Introduction to the Theory of Translation:** PR: COP 5551. Language theory, the theory of translation and parsing, finite automata and pushdown acceptors.
- COP 6643** **NS 4 (4,0)**  
**Compiler Construction:** PR: COP 6642. Techniques in the design and implementation of compilers. A project is required.
- COT 4001** **NS 4 (4,0)**  
**Discrete Computational Structures:** PR: COP 2511, MAC 3313. Finite and discrete mathematical structures relating to the theory of computing, graphs, monoids, lattices, Boolean algebras; various models for algorithmic processes, finite automata, Turing machines.
- COT 5314** **NS 4 (4,0)**  
**Computational Complexity:** PR: COT 4001. Properties of algorithms, computational equivalence of machines, time-space complexity measures, examples of algorithms of different complexity, classification of algorithms, classes P and NP.
- CPO 3034** **SS 4 (4,0) F**  
**Politics of Developing Areas:** An analysis of non-Western political systems with emphasis upon the problems of political, socio-economic, and cultural development.
- CPO 3103** **SS 4 (4,0) F,W,S,Su**  
**Comparative Politics:** An analytical and comparative study of politics in other nations with emphasis upon the relationships of social environments and political systems.
- CPO 3502** **SS 4 (4,0) W**  
**Comparative Asian Politics:** Selected Asian political systems will be examined in terms of the interaction between political institutions and processes and social, cultural and economic structures.
- CPO 4024** **SS 4 (4,0) F**  
**Non-Western Politics:** Examination of the political system of one or two non-western nations, including the relationship of socio-cultural and historical environment to the political system.
- CPO 4123** **SS 4 (4,0) S**  
**Government and Politics of Great Britain:** A survey of British government, society, and institutions, with emphasis on the development of parliamentary democracy.
- CPO 4643** **SS 4 (4,0) W**  
**Government and Politics of the Soviet Union:** Examination of the origins, institutions, and functioning of the Soviet political system, including the role and characteristics of the communist party of the Soviet Union.
- CRM 5115** **NS 3 (3,0)**  
**Economics of Computers:** PR: CIS 5012. The computer industry, terms and conditions of sale and rental, cost and effectiveness of computer systems. Determining value, demand and price of computer services.
- CRM 5131** **NS 3 (3,0)**  
**Managing the Computer Professional:** PR: CIS 5012 and MAN 5051; or C.I. The programming group, team and project tasks, personality factors, motivating, training, experience.
- CRW 2020** **HFA 3 (3,0) F,W,S**  
**Principles of Creative Writing:** An exploratory course in the several types of creative writing; group analysis of original writing; critical reading of established authors.
- CRW 2221** **HFA 3 (3,0)**  
**Introduction to Fiction Writing:** Practice in writing the short story; group analysis and criticism of work produced by individual students.

- CRW 2321** **HFA 3 (3,0)**  
**Introduction to Verse Writing:** Practice in writing poetry; group analysis and criticism of work produced by individual students.
- CRW 3132** **HFA 3 (3,0) F**  
**Creative Writing Workshop I:** PR: C.I. Practice in established forms: essay, short story, and poetry.
- CRW 3140** **HFA 3 (3,0) W**  
**Creative Writing Workshop II:** PR: CRW 3132 or C.I. Individualized practice in writing in one of the established forms; analytic study of the work of pertinent authors.
- CRW 3152** **HFA 3 (3,0) S**  
**Creative Writing Workshop III:** PR: CRW 3142 or C.I. Individualized practice in writing in one of the established forms: analytic study of the work of pertinent authors.
- CRW 3530** **HFA 3 (3,0)**  
**Writing for Children:** Practice in writing publishable literature for pre-school and elementary level children.
- CRW 4940** **HFA 3 (3,0) F**  
**Writing Practicum I:** PR: C.I. Intensive writing practice in fiction, non-fiction, or verse.
- CRW 4941** **HFA 3 (3,0) W**  
**Writing Practicum II:** PR: CRW 4940. Continuation of CRW 4940.
- CRW 4942** **HFA 3 (3,0) S**  
**Writing Practicum III:** PR: CRW 4941. Continuation of CRW 4941.
- CYP 6948** **SS 3 (2,15) F,W,S**  
**Community Psychology Internship:** PR: Graduate admission, 2nd year status and C.I. Supervised placement in community setting. (May be repeated for credit).
- DAA 3160** **ED 3 (2,2) F,Su**  
**Movement as an Art Form:** Analysis of creative movement techniques which increase body awareness and enhance the communicative potential the instrument of dance.
- DAA 3700** **ED 2 (1,1) F,S**  
**Choreography of Contemporary Dance:** PR: Sophomore standing. Dance production as an art form.
- DAA 6050** **ED 3 (2,1)**  
**Rhythmics:** PR: Rank III Certificate or C.I. Instructional analysis in classical and modern rhythms.
- DAE 3301** **ED 2 (1,1) F,W,S,Su**  
**Instructional Analysis of Rhythmics:** PR: Sophomore standing. Analysis of rhythm and rhythmic activities as they relate to teaching physical education.
- DEP 3004** **SS 4 (4,0)**  
**Developmental Psychology:** PR: PSY 2013 and PSY 2014. The effects of genetic, psychological, maturational and social factors on behavior at various stages of development.
- DEP 3202** **SS 4 (4,0) F,W**  
**Psychology of Exceptional Children:** Psychological problems of exceptional children including diagnosis, associated emotional problems, effects of institutionalization, special class placement, attitudes, and appropriate intervention methods.
- DEP 3212** **SS 4 (4,0)**  
**Psychological Approaches to Mental Retardation:** The problems of mentally retarded citizens including diagnosis, environment versus heredity, legal restrictions, institutionalization, as well as methods of behavioral remediation.
- DEP 6057** **SS 4 (3,2)**  
**Development Psychology:** PR: Graduate admission and C.I. Psychological aspects of development including intellectual, social and personality factors.
- DHE 4101** **SS 4 (4,0)**  
**Population:** Concerned with the study of human population, its distribution, composition and change.

- DHE 4300** **SS 4 (4,0) W**  
**Human Ecology:** PR: SOC 2000. Principles governing the spatial distribution of human populations and activities within an area.
- EAB 3703** **SS 4 (4,0)**  
**Principles of Behavior Modification:** PR: EXP 3404. An examination of the control of behavior through applications of principles and theories of learning. Examples are drawn from clinical and social psychology and from child rearing.
- EAB 3704** **SS 4 (4,0)**  
**Behavioral Self Control:** PR: PSY 2013-2014. Application of behavioral and biofeedback techniques to self-regulation.
- EAS 4101** **EN 4 (3,2)**  
**Aerodynamics:** PR: EGN 3353. Subsonic and supersonic flight; airfoils in compressible and incompressible flow; flow about a body; thin air-foil and finite airfoil theory.
- EAS 4300** **EN 4 (4,0)**  
**Propulsion Systems:** PR: EML 3106. Analysis of jet propulsion systems including turbojets, ram-jets, and rockets.
- EAS 5114** **EN 3 (3,0)**  
**Aerodynamics:** PR: EAS 4101 or equivalent. Advanced aerodynamics principles including fluid dynamics, potential flow theory, airfoil and finite wing theory.
- EAS 6123** **EN 3 (3,0)**  
**Aerodynamics:** PR: EAS 4101 or equivalent. Theoretical methods useful for predicting performance and stability of thin lifting surfaces and slender vehicles at subsonic, supersonic and hypersonic speeds.
- EAS 6400** **EN 3 (3,0)**  
**Aeromechanics:** Advanced applied aerodynamics including stability and control of aerospace vehicles. Generalized vehicle performance. Small disturbance dynamic stability and control response.
- ECI 3404** **EN 3 (2,3)**  
**Civil Engineering Materials:** PR: C.I. The characterization of materials used in civil engineering works. Emphasis on concrete, soils, and bituminous materials.
- ECI 3603** **EN 3 (2,2)**  
**Engineering and Environmental Geology:** Principles of physical geology with emphasis on engineering and environmental topics. Study of land forms, geologic maps, geologic structure, weathering, groundwater, mass wasting, and earthquakes.
- ECI 4145** **EN 3 (3,0)**  
**Construction Methods:** PR: C.I. Factors, methods, planning, and equipment related to civil engineering construction.
- ECI 4305** **EN 4 (4,0)**  
**Geotechnical Engineering I:** PR: EGN 3331 and EGN 3353. Engineering properties and classification of soils. Design considerations for compaction, seepage, consolidation, and settlement analysis.
- ECI 4305L** **EN 2 (1,3)**  
**Geotechnical Engineering Laboratory:** PR: ECI 4305 or C.I. Fundamental geotechnical engineering experiments, classification, grain size, atterberg limits, compaction, etc.
- ECI 5147** **EN 4 (4,0) F**  
**Construction Management:** PR: C.I. Planning and Management of Construction Projects: CPM and PERT analysis with preparation of estimates and contract documents. Selection and Economics of heavy construction materials.
- ECI 5215C** **EN 4 (3,3) Su**  
**Hydraulic Engineering:** PR: EGN 3353. Environmental and civil engineering hydraulics applications. Pipe and open channel flow, fittings, flow measurements, etc.
- ECI 5306** **EN 4 (4,0)**  
**Geotechnical Engineering II:** PR: ECI 4305. Continuation of ECI 4305 with emphasis on shear strength and design factors for earth pressures, bearing capacity, and slope stability.

- ECI 6197** **EN 4 (4,0)**  
**Public Works Engineering:** PR: C.I. Principles and practices, operation and maintenance, equipment, utilities, planning and design, etc.
- ECI 6198** **EN 4 (4,0)**  
**Regional Planning, Design, and Development:** PR: TTE 6607. Project course dealing with planning, design, and development of regional systems, including projections, case studies, design alternatives, environmental impact, etc.
- ECI 6235** **EN 3 (3,0) F**  
**Open Channel Hydraulics:** PR: EGN 3353 or C.I. Free surface flow studies by empirical and theoretical methods for the design, operation, and management of open channels.
- ECI 6324** **EN 3 (3,0)**  
**Foundation Analysis and Design I:** Analysis and design of fundamental foundation units including spread footings, combined footings, mats, and retaining walls.
- ECI 6325** **EN 3 (3,0)**  
**Foundation Analysis and Design II:** Continuation of topics in ECI 6324 including sheet piles and pile foundations.
- ECI 6608** **EN 3 (3,0)**  
**Advanced Topics in Engineering Geology:** PR: C.I. Geologic aspects of major civil engineering works including dams, reservoirs, urban development, transportation systems, etc.
- ECI 6617** **EN 3 (3,0)**  
**Groundwater and Seepage:** Theories of groundwater movement, geological factors, analysis and design technique, etc. Emphasis on practical considerations.
- ECM 4104** **EN 3 (3,0)**  
**Mathematics Review for Engineers:** Comprehensive review of college algebra trigonometry, analytical geometry, vector calculus, and an introduction to differential equations for non-current engineering students wishing to pursue advanced work.
- ECM 4114** **EN 3 (3,0) W**  
**Engineering Mathematical Analysis:** PR: MAC 3314 and MAP 3305. The application of mathematical methods to engineering problems including vector and tensor fields, state space techniques, orthogonal curvilinear coordinates and orthogonal functions.
- ECM 4124** **EN 3 (3,0) S**  
**Engineering Mathematical Systems:** PR: MAP 3305 and ESI 4503. The solution of differential equations generated from modeling real systems. Examples from economics, biology, engineering, et al.
- ECM 4134** **EN 3 (3,0) F**  
**Optimum Seeking Methods:** PR: C.I. Methods of search for the optimum of incompletely specified functions. Single and multivariable search techniques, random search, Fibonacci search, minimax concept, and gradient methods.
- ECM 4304** **EN 4 (3,3) S**  
**Digital Systems Hardware Organization:** PR: ECM 4504. Analysis and design of computer subsystems and digital controllers in AHPL using techniques ranging from logic to micro programming.
- ECM 4504** **EN 4 (3,3) F**  
**Mini-Computers in Engineering Systems:** PR: COP 3215 or equivalents. EEL 4342 or EEL 3341C. Organization of the computer, processor, memory and I/O. Assembly level programming. Input-output using programmed transfer and interrupt type I/O. Mini-computer orientation.
- ECM 4804** **EN 3 (3,0) F**  
**Engineering Software Design:** PR: COP 3215 or equivalent; CR: MAP 3305. Design theory and construction of special purpose engineering software. Survey of problem oriented programming languages.
- ECM 4814** **EN 4 (3,3) W**  
**Real Time Mini-Computer Systems:** PR: EGN 3703 and ECM 4504. Computer I/O Systems and equipment, Sampling, quantization, buffering and real time processing. Use of the NOVA mini-computer system for data acquisition, display and control.

- ECM 5135** **EN 3 (3,0) Su**  
**Analytical Methods in Engineering:** PR: ECM 4114 or C.I. The kinematics and dynamics of ideal field theory. Complex potential and conformal mapping with application to problems in fluid flow, thermal, and electrical potential.
- ECM 5235** **EN 3 (3,0) S**  
**Analytical Methods in Engineering:** PR: ECM 4114 or C.I. Applications and solutions of partial differential equations. Concepts of mathematical modeling. Development of characteristics properties of equations and solution methods.
- ECM 5505C** **EN 4 (3,3) W**  
**Microcomputer Application in Engineering:** PR: ECM 4504 or C.I. Introduction to design and application of microcomputer-based monitoring and control systems: machine language programming; software development aids.
- ECM 5506C** **EN 4 (3,3) S,Su**  
**Engineering Applications of Computer Graphics:** PR: COP 3215, ESI 4503. Introduction to the use of computer graphics in engineering applications, including the use of X-Y Plotter and CRT terminal hardware.
- ECM 5705** **EN 3 (3,0) W**  
**Engineering Data Reduction:** PR: STA 3032. Methods for processing and analysis of scientific test and process data, including computer filtering schemes and data compression and recovery techniques.
- ECM 6416** **EN 3 (3,0) W**  
**Discrete Systems Simulation:** PR: STA 3032 or equivalent. Computer-based modeling and analysis of discrete-space, discrete-time engineering related systems. Use of FORTRAN IV and GPSS/360 for implementing such models. Laboratory assignments.
- ECM 6426** **EN 3 (3,0) S**  
**Continuous System Simulation:** PR: EGN 3703 or equivalent. Use of state-space techniques, numerical integration, and CSSL programs. Laboratory assignments.
- ECM 6436** **EN 3 (3,0) F**  
**Automata Theory:** PR: EEL 4342 or equivalent. Structural theory and performance characteristics of the finite-state machines.
- ECM 6606** **EN 4 (3,2) S**  
**Hybrid Computer Systems:** PR: ECM 4114 or C.I. Analysis and design of Hybrid Systems and components. Applications of hybrid systems to problems in optimization theory, control, man-machine systems, and biological systems.
- ECM 6706** **EN 4 (3,2) S**  
**Engineering Data Reduction:** PR: ECM 5705. Digital analysis of multidimensional data. Applications of multidimensional orthogonal transforms.
- ECM 6805C** **EN 4 (3,3) S**  
**Microcomputer Applications Design:** PR: ECM 5505C or C.I. Advanced applications of microcomputer systems. Design of systems and software to implement a case study in microcomputer usage.
- ECO 2000** **BA 3 (3,0) F,W,S,Su**  
**Fundamentals of Economics:** A terminal course in the fundamentals of economics. Not open to business majors.
- ECO 2013** **BA 4 (4,0) F,W,S,Su**  
**Principles of Macroeconomics:** A study of national income accounting, income and employment theory, business fluctuations, money and banking, and monetary and fiscal policy in the U.S. economy.
- ECO 2023** **BA 4 (4,0) F,W,S,Su**  
**Principles of Microeconomics:** The determination of prices in a market economy; their role in allocating consumer and producer goods in distributing incomes. Efficiency of markets and evaluation of public policies designed to improve efficiency.
- ECO 3101** **BA 4 (4,0) F,W,S,Su**  
**Intermediate Price Theory:** PR: ECO 2023 and 2013. Theoretical analysis of the determination of



product and factor prices under different market structures.

**ECO 3203** **BA 4 (4,0) F,W,S,Su**  
**Intermediate Money, Income and Employment Theory:** PR: ECO 2013 and 2023. Theoretical analysis of the determination of national income and employment, including an examination of the monetary system.

**ECO 3411** **BA 4 (4,0) F,W,S,Su**  
**Quantitative Methods and Business Decision Analysis:** PR: Junior Standing, ACC 2324, ECO 2013, 2023, and STA 2014. The use of statistical methods as scientific tools in the analysis of economics and business problems.

**ECO 3702** **BA 3 (3,0)**  
**International Economics:** PR: ECO 2023 and ECO 2013. Fundamental principles of international trade and foreign exchange, including the balance of payments and problems of foreign economic policy.

**ECO 4225** **BA 3 (3,0)**  
**Monetary Theory and Policy:** PR: FIN 3233. A study of the factors that influence the supply of and demand for money and credit, and the effect of changes in these factors on the allocation of resources, levels of national income, employment, and prices.

**ECO 4303** **BA 3 (3,0)**  
**History of Economic Thought:** PR: ECO 2023 and ECO 2013. A study of the leading ideas of the major contributors to the development of economic thought.

**ECO 4412** **BA 3 (3,0)**  
**Economic Statistical Analysis:** PR: ECO 3411. Concepts and methods of developing, analyzing and interpreting measures of economic activity, and business and economic change.

**ECO 4503** **BA 3 (3,0) F,W,S,Su**  
**Public Finance in the American Economy:** PR: ECO 2013. Analysis of fiscal institutions and decision-making in the public sector of the American economy; budget planning and execution, taxation, debt; and theory of taxes.

**ECO 5055** **BA 4 (4,0)**  
**Economic Concepts:** PR: Acceptance into the graduate program. Introduction to micro and macro economic analysis.

**ECO 5403** **BA 3 (3,0)**  
**Mathematical Economics:** PR: ECO 2013. An introduction to the mathematical tools of modern economic analysis.

**ECO 5413** **BA 4 (4,0) W S**  
**Statistics for Business and Economics:** PR: Acceptance into the graduate program. Statistical theory and problems relating to business and economics including time series and correlation theory, index number theory and statistical interference.

**ECO 5423** **BA 3 (3,0)**  
**Econometric Methods:** PR: Graduate standing and ECO 3411 or equivalent. The application of econometric methods to economic theory and problems. Emphasis is placed on the validation of a model.

**ECO 6111** **BA 3 (3,0)**  
**Economic Analysis of the Firm:** PR: Graduate standing and ECO 5055 or equivalent. Commodity price and output determination; factor price determination and functional income distribution; analysis of different types of markets.

**ECO 6204** **BA 3 (3,0)**  
**Aggregate Economics-Income, Unemployment and Growth:** PR: Graduate standing and ECO 5055 or equivalent. Macroeconomic measurement, theory and policy, for the student with a limited economic background.

**ECO 6206** **BA 3 (3,0)**  
**Business Cycles and Forecasting:** PR: ECO 5055 or equivalent. Use of economic tools for measuring changes in aggregate economic activity, changes in production and prices, and the use of statistical techniques.

- ECO 6226** **BA 3 (3,0)**  
**Money, Banking and Economic Activity:** PR: Graduate standing. A study of the institutions in which the money supply is generated and the influence of monetary policy on economic stability and growth.
- ECO 6227** **BA 3 (3,0)**  
**Monetary Theory and Policy:** PR: Graduate standing and a course in Money and Banking. An analysis of the fundamental theory underlying the supply of money, demand for money and effects of monetary variables of the level of economic activity.
- ECO 6305** **BA 3 (3,0)**  
**History of Economic Thought:** PR: Graduate standing. The history and development of Pre-Keynesian economic doctrines with emphasis on classical and post-classical economic thought.
- ECO 6415** **BA 3 (3,0)**  
**Statistical Models for Business:** PR: Graduate standing and ECO 5413 or equivalent. The theory of model analysis including validation of model assumptions through Monte Carlo analysis and advanced statistical techniques.
- ECO 6416** **BA 3 (3,0)**  
**Econometrics:** PR: ECO 5055/ECO 5413 or equivalent. The mathematical formulation of economic theories and the use of statistical procedures to measure the theoretical relationships and to verify or reject the theories.
- ECO 6505** **BA 3 (3,0)**  
**Public Finance and Financial Policy:** PR: Graduate standing and ECO 5055 or equivalent. Analysis of the fiscal role and instruments of government and their effects on the economy; taxation, debt, and fiscal policy.
- ECO 6705** **BA 3 (3,0)**  
**International Trade:** PR: Graduate standing. An inquiry into the theory of international trade, commercial policy and economic integration.
- ECO 6715** **BA 3 (3,0)**  
**Theory of International Finance and Monetary Institutions:** PR: Graduate standing. Analysis of the international money market, international equilibrium and adjustment mechanism, exchange rate variations, balance of payments, capital flow, and effects of international monetary policies.
- ECP 3103** **BA 3 (3,0)**  
**Manpower and Human Resources:** PR: ECO 2023 and ECI 2013. Examines labor as a human resource or human capital. Special emphasis placed upon the changing role of manpower and manpower policies.
- ECP 3203** **BA 3 (3,0)**  
**Economics of Labor:** PR: ECO 2023 and ECO 2013. A survey of the growth, structure, objectives, and collective bargaining practices of organized labor groups.
- ECP 3423** **BA 3 (3,0)**  
**Economics of Public Utilities:** PR: ACC 2304, ACC 2324 and ACC 3003, and ECO 2013 or C.I. The nature of public utilities, the economics of rate determination and regulatory policy.
- ECP 3433** **BA 3 (3,0)**  
**Transportation Economics:** PR: ECO 2023, and ECO 2013. Economic characteristics and governmental regulation of public carriers. Consideration of competitive relations between modes of transportation and criteria for public investment in transportation and criteria of public investment in transportation systems.
- ECP 4403** **BA 3 (3,0)**  
**Business and Government:** PR: ECO 2023 and ECO 2013. A survey of the most significant public policies affecting business firms.
- ECP 4703** **BA 3 (3,0)**  
**Managerial Economics:** PR: Junior standing. ACC 2324, ECO 2023, ECO 2013 and ECO 3411. The uses of economic analysis in economic decisionmaking and business policy formulation.
- ECP 5615** **BA 3 (3,0)**  
**Economics of Urban Areas:** PR: ECO 2013. Economic problems arising from and associated with the growth of cities and suburban areas.

- ECP 6205** **BA 3 (3,0)**  
**Labor Economics:** PR: Graduate standing and ECO 5055 or equivalent. An investigation into the nature and function of the labor markets, with specific concern for both institutional and non-institutional imbalance.
- ECP 6305** **BA 3 (3,0)**  
**Environmental Economic Analysis:** PR: Graduate standing. An investigation of environmental problems, policies of protection and difficulties in making quantitative assessments of environmental damages.
- ECP 6405** **BA 3 (3,0)**  
**Industrial Organization and Performance:** PR: Graduate standing. A study of the performance of industries representative of various types of market structure and practices, relative to price and efficiency.
- ECP 6426** **BA 3 (3,0)**  
**The Economics of Regulated Industries:** PR: Graduate standing. Economic, legal, and administrative concepts of regulation with emphasis on goals, tasks, phases, and procedures of regulation pertaining to transportation, electric, gas and communicative systems.
- ECP 6704** **BA 3 (3,0)**  
**Managerial Economics:** PR: Graduate standing and ECO 5055 or equivalent. The use of economic tools and methods of reasoning applied to a wide range of business and economic problems.
- ECS 4003** **BA 3 (3,0)**  
**Comparative Economic Systems:** PR: ECO 2023, and ECO 2013. An analysis of the fundamental institutions of the American economic system and a comparison of the American economic system with other economic systems.
- ECS 4013** **BA 3 (3,0)**  
**Economic Development:** PR: ECO 2023 and ECO 2013. The process and problems of economic development.
- ECS 6004** **BA 3 (3,0)**  
**The Economics of Central Planning:** PR: Graduate standing. An analysis of the economics of planning as applied to the economy of the Soviet Union and Soviet type centrally planned economic systems.
- ECS 6015** **BA 3 (3,0)**  
**Economic Development:** PR: Graduate standing. Analysis of theories and problems of growth and development with special attention to resource scarcity, population growth, and interaction of foreign trade and internal development.
- EDA 6061** **ED 4 (4,0) F,S,Su**  
**Organization and Administration of Schools:** PR: Certificate or C.I. School organizational patterns kindergarten through junior college. Study of functions such as scheduling, staffing, community relations, design and operation of facilities, financial management.
- EDA 6232** **ED 4 (4,0)**  
**Legal Aspects of School Operation:** PR: Certificate or C.I. Study of state and federal laws affecting the operation of public schools emphasizing individual rights and responsibilities of students, faculty, and administrators.
- EDA 6240** **ED 4 (4,0)**  
**Educational Financial Affairs:** PR: Certificate or C.I. Theoretical and practical approaches to managing school business affairs at Central Office and individual school levels.
- EDA 6260** **ED 4 (4,0)**  
**Educational Systems and Facilities:** PR: Certificate or C.I. Application of Current Educational Management and Behavioral Theory for Systems Approaches in Schools and Educational Facilities.
- EDA 6502** **ED 4 (4,0) W,Su**  
**Organization and Administration of Instructional Programs:** PR: Certificate or C.I. Purpose and functions of school learning centers, curricula, media, and establishment of educational priorities, review and analysis of various grouping patterns for individualizing instruction.

- EDE 3201** **ED 2 (2,0) F,W,S**  
**Elementary School Curriculum:** PR: Admission to Phase III or C.I. Basic scope and sequence of the elementary school curriculum; personnel, and services; philosophical concepts; planning for instruction.
- EDE 3301** **ED 3 (3,0) F,W,S**  
**Teaching Strategies in the Elementary School:** PR: EDF 3603 or C.I. Study of selected teaching strategies and teaching skills, including effective utilization of audio-visual media, individualizing instruction, pupil motivation and management. Concurrent teaching laboratory experiences.
- EDE 3411** **3 (3,0) F,W,S**  
**Teaching and Evaluation in the Elementary School:** PR: EDF 3603 or C.I. Identification of learning problems, particularly exceptional children; assessing pupil performance; determining effectiveness of instruction. Concurrent teaching laboratory experiences.
- EDE 3942** **ED 3 (0,14) F,W,S**  
**Elementary School Student Teaching—Block A:** PR: EDF 3255 and EDF 3603. Junior year student teaching in an elementary school under the supervision of a certified classroom teacher.
- EDE 3943** **ED 3 (0,14) F,W,S**  
**Elementary School Student Teaching—Block B:** PR: EDE 3942. Junior year student teaching in an elementary school under the supervision of a certified classroom teacher.
- EDE 4937** **ED 3 (3,0) F,W,S,Su**  
**Drug Abuse Education:** PR: C.I. Drug abuse in contemporary society. Objectives, content, resources, and techniques of drug abuse education.
- EDE 4943** **ED 9 (0, 30) F,W,S**  
**Elementary School Student Teaching—Block C:** PR: EDE 3943. Senior year student teaching in an elementary school under the supervision of a certified classroom teacher.
- EDE 5541** **ED 3 (3,0) F,W,S,Su**  
**Individualizing Instruction in the Elementary School:** PR: Rank III Certificate or C.I. Study of basic philosophy, organizational patterns, techniques, materials, and activities related to individualizing instruction in the elementary school classroom.
- EDE 6205** **ED 4 (4,0) W,Su**  
**Elementary School Curriculum:** PR: Rank III Certificate or C.I. Analysis of the forces which shape and contribute to the vertical and horizontal curriculum designs of elementary schools.
- EDF 2116C** **ED 4 (2,2)**  
**Classroom Development and Learning:** PR: One psychology course or C.I. Interdisciplinary approach focusing on relationship of classroom activities to principles of development and learning.
- EDF 3255** **ED 4 (2,2) F,W,S,Su**  
**Classroom Management and Learning:** PR: One psychology course or C.I. Analysis of techniques and skills for effective classroom management and discipline.
- EDF 3603** **ED 4 (2,2) F,W,S,Su**  
**Teaching Analysis:** Initial requirement; an opportunity to examine and participate in general and specific dimensions of teaching with socio-economics factors emphasized. EDF 3255 recommended concurrently.
- EDF 4003** **ED 3 (3,0) F,W,S,Su**  
**Overview of Education:** Study of public education in the United States focusing on the development of structure and process in the educational enterprise.
- EDF 6120** **ED 3 (3,0) F,W,S,Su**  
**Studies in Human Development and Childhood:** PR: Certificate or C.I. Recent research in Human Development and childhood relevant to contemporary American education. Emphasis prenatal through age 11.
- EDF 6136** **ED 3 (3,0) F,W,S,Su**  
**Adolescent Development and the Schools:** PR: Certificate or C.I. Recent research in human development in adolescence with special emphasis upon research of interest to secondary school teachers.

- EDF 6257** **ED 3 (3,0) F,W,S,Su**  
**Analysis of Classroom Teaching:** PR: Certificate or C.I. Analyses of verbal and non-verbal behaviors of teachers and their effect upon classroom instruction and learning.
- EDF 6258** **ED 3 (3,0) F,W,S,Su**  
**Behavior Problems in the Public School:** PR: Certificate or C.I. Role of the teacher in identification, strategies for remediation and referral procedures for working with behavioral problem children. Mental hygiene principles stressed.
- EDF 6401** **ED 3 (3,0) F,S,Su**  
**Statistics for Educational Data:** PR: EDF 6481, Certificate or C.I. Research methods applicable to educational settings. Design rationale, parametric and non-parametric statistics, and data interpretation.
- EDF 6432** **ED 3 (3,0) F,W,S,Su**  
**Measurement and Evaluation in Education:** PR: EDF 6481, Certificate or C.I. Rationale and construction of evaluative instruments, including classroom tests. Analysis of standardized and non-standardized tests in the classroom.
- EDF 6481** **ED 3 (1,2)**  
**Fundamentals of Graduate Research in Education:** PR: Rank III or C.I. Designed to promote an efficient use of library and computer center; practice in reading and interpreting research in education emphasizing writing skills.
- EDF 6520** **ED 3 (3,0) W,Su**  
**History of Education:** Evolution of education practices from the Greeks to the moderns, including both Eastern and Western cultural variables.
- EDF 6557** **ED 3 (3,0) F,W,Su**  
**Philosophical Foundations of Classroom Learning:** PR: Certificate or C.I. A systematic approach to the philosophical bases of learning and the effect such philosophies have on school programs and curriculum.
- EDF 6608** **ED 3 (3,0) W,Su**  
**Social Factors in American Education:** PR: Certificate or C.I. Analysis of general and specific aspects of American education as they relate to Social and Behavioral Sciences.
- EDG 3032C** **ED 4 (2,2) F,W,S,Su**  
**Humanistic Aspects of School Programs:** PR: Successful completion of Phase I or C.I. Study of General Applications of the Humanistic viewpoint to school programs.
- EDG 4938** **ED 3 (3,0) F,W,S**  
**Student Teaching Seminar:** PR: Admission to Phase III. Seminar taken concurrently with student teaching exploring class management, aspects of professional and personal development, and current school problems and possible solutions.
- EDG 4941** **ED 2-12 (0,2-12)**  
**Direct Field Experience:** PR: Approval of Professional Laboratory. Field experience in an appropriate educational setting under the direction of a supervising teacher and/or university supervisor.
- EDG 6337** **ED 3 (3,0) F,S,Su**  
**Techniques of Game Use in Education:** PR: Certificate or C.I. Analysis, development, and use of educational games as an approach to classroom teaching.
- EDG 6691** **ED 4 (4,0)**  
**Research Utilizing Problem Solving:** PR: Certificate or C.I. The identification and diagnosis of classroom and/or school building problems. Action plans are formulated to resolve these problems and to evaluate action taken.
- EDG 6940** **ED 2-12 (0, 2-12)**  
**Internship:** PR: Approval of Professional Laboratory. Internship in an appropriate educational setting under the direction of a qualified supervisor.
- EDP 3004** **SS 4 (4,0)**  
**Educational Psychology:** PR: PSY 2013 and PSY 2014. Application of psychological principles and research methods to classroom behavior and learning.

- EDP 6108** **SS 4 (4,0)**  
**Psycho-educational Diagnosis:** PR: Graduate admission and C.I. Interpretation of psychoeducational tests. Emphasis on evaluation of exceptional children.
- EDS 5356** **ED 4 (4,1) F,W,S**  
**Supervision of Professional Laboratory Experiences:** PR: C.I. Study of the undergraduate professional laboratory experiences program with emphasis on the role and responsibilities of the Teacher Education Associate or Supervising Teacher.
- EDS 6111** **ED 4 (2,2) W,Su**  
**Administration and Supervision of Staff Development:** PR: Rank III Certificate or C.I. Role and procedures for the supervisor or administrator in staff development. Assessment of staff development needs and delivery systems are stressed.
- EDS 6123** **ED 4 (4,0) F,W,S,Su**  
**Educational Supervisory Functions:** PR: Certificate or C.I. Analysis of school supervisory functions in human relations, leadership, personnel administration, and in-service education for instructional improvement.
- EDS 6130** **ED 4 (4,0) F,W,S,Su**  
**Educational Supervisory Techniques:** PR: Rank III Certificate or C.I. and EDS 6123. Development of techniques in observation, group processes, communication, and evaluation for assessment of school personnel and programs.
- EEC 4203** **ED 4 (4,0) F**  
**Principles and Programming in Early Childhood Education:** PR: C.I. Consideration of basic concepts, goals and principles underlying program planning; trends in research and development. Concurrent laboratory experiences.
- EEC 4204** **ED 4 (4,0) W**  
**Curriculum in Early Childhood Education:** PR: C.I. Exploration of early childhood curriculum; organizing for instruction; selection of appropriate objectives and activities in developing a balanced program. Concurrent laboratory experiences.
- EEC 4303** **ED 4 (4,0) S**  
**Creativity in Nursery-Kindergarten Education:** PR: C.I. Using art and music activities in the early childhood education program to develop individual creativity.
- EEC 5205** **ED 4 (4,0) F**  
**Programs in Early Childhood Education:** PR: Rank III Certificate or C.I. Philosophy, content, facilities, instructional materials, and activities appropriate for children ages 3, 4 and 5; current research; new curricula. Concurrent laboratory experiences.
- EEC 5206** **ED 4 (4,0) W**  
**Organization of Instruction in Early Childhood Education:** PR: Rank III Certificate or C.I. Organization in instruction and techniques in areas relating to language arts, social sciences, science, mathematics, health and physical education; problems relating to reading readiness, perception and cognition. Concurrent laboratory experiences.
- EEC 5208** **ED 4 (4,0) S**  
**Creative Activities in Early Childhood:** PR: Rank III Certificate or C.I. Organization of instruction and methods for creative activities involving music, art, literature and educational toys. Integration of activities and basic skills curriculum. Concurrent laboratory experience.
- EEC 6932** **ED 3 (3,0)**  
**Seminar in Early Childhood Education:** PR: Rank III Certificate or C.I. Study and evaluation of research applicable to the design and construction of a curriculum for 3, 4 and 5 year old children.
- EED 6071** **ED 4 (4,0) F,Su**  
**Behavior Disorders in Schools:** PR: Rank III Certificate or C.I. Assessment/analysis of behavior disorders, cause and effects, identification, and theories.
- EED 6215** **ED 4 (4,0) W,Su**  
**Development of a Personalized Program for Children with Behavior Disorders:** PR: Rank III Certificate or C.I. Study of various approaches to use in teaching children with behavior disorders, including precision teaching, behavior management techniques, and interpersonal communications skills.

- EED 6247** **ED 4 (4,0) S,Su**  
**Educational Programming for Children with Behavior Disorders:** PR: Rank III Certificate or C.I. A study of existing models and theories of educational programs for children with behavior disorders.
- EEL 3122C** **EN 4 (3,3) F,W**  
**Electrical Networks:** PR: EGN 3373. Analysis and design of linear circuits, transients, network function. Laplace transform.
- EEL 3307C** **EN 4 (3,3) W,S**  
**Electronic Engineering:** PR: ENG 3373; MAP 3305. Electronic devices and circuits design including small signal amplifiers, and switching circuits.
- EEL 3341C** **EN 4 (3,3) F,S**  
**Introduction to Digital Circuits:** PR: COP 2510 and PHY 2041. Logic gates, memory devices, combinational and sequential subsystems, Karnaugh Maps. Intended primarily for computer science majors.
- EEL 3470** **EN 4 (4,0) F,W**  
**Electromagnetic Fields:** PR: ENG 3373L and MAP 3305. Introduction to electrical fields and waves.
- EEL 3552** **EN 4 (3,3) W,S**  
**Signal Analysis & Communications:** PR: EEL 3122C. Signal theory. Fourier series and integral. Design of modulation systems.
- EEL 4200C** **EN 3 (2,3)**  
**Electrical Machinery:** PR: EGN 3375. Methods and techniques of systems analysis applied to the dynamics of electrical machinery.
- EEL 4308C** **EN 3 (2,3) F**  
**Semiconductor Devices:** PR: EEL 3307 and EGN 3364. Semiconductors with uniform and non-uniform impurity distributions; impurity diffusion, analysis of the p-n junction. Junction and metal-oxide FET and other devices.
- EEL 4309C** **EN 3 (2,3) S**  
**Active Circuits:** PR: EEL 3307, CR: EGN 4714. Integrated circuit fabrication and characteristics. Feedback amplifier types, performance and stability. Introduction to operational amplifier design and application.
- EEL 4342C** **EN 4 (3,3) F,W**  
**Logical Component Design:** PR: EGN 3373L. Switching theory and logical design. Logic circuit minimization techniques. Applications to serial and parallel digital components including adders, registers and counters.
- EEL 4430C** **EN 4 (3,3) W**  
**Microwaves:** PR: EEL 3470. Microwave devices and systems and measurement techniques.
- EEL 4512C** **EN 4 (3,3) S**  
**Communication Systems:** PR: STA 3032, EEL 3122 and EEL 3307. Information transmission, modulation, and noise systems design.
- EEL 4701C** **EN 4 (3,3) W**  
**Logical Systems Design:** PR: EEL 4342. Systems investigation, design, and operation of digital computers; study of a basic hardware set and a basic software set.
- EEL 4702C** **EN 4 (3,3) W**  
**Digital Systems Organization:** PR: EEL 4342 or ECM 4504. Design, analysis and implementation of computer based control systems utilizing minicomputers and microprocessors.
- EEL 4800C** **EN 3 (2,2) S**  
**Analog Computers:** PR: EGN 3373 and EGN 3703. Theory and operation of modern analog computer. Analysis and design of systems by simulation.
- EEL 5173** **EN 3 (3,0) F**  
**Signal and System Analysis:** PR: EEL 3122. Difference equations, transform techniques, state variables applied to continuous and discrete systems.

- EEL 5260** **EN 3 (3,0) W**  
**Electric Power Generation and Distribution:** PR: EGN 3375 or equivalent. Concept of complex power in single and three phase systems. Synchronous machines, power transformer, and transmission lines system design.
- EEL 5365** **EN 3 (3,0) F**  
**Introduction to Digital Systems:** PR: EEL 4342 or equivalent. Combinational logic, sequential logic, introduction to controller design.
- EEL 5441** **EN 3 (3,0) F**  
**Coherent Optics Applications:** PR: PHY 3421 and EEL 3470 or C.I. Coherent optical radiation and propagation. Design and analysis of optical components and systems.
- EEL 5505** **EN 3 (3,0)**  
**Digital Signal Processing:** PR: EEL 3122 or C.I. Sample data models via Laplace and Z-transforms, digital filter synthesis, Discrete Fourier Transforms with fast Fourier Transform algorithms.
- EEL 5542** **EN 3 (3,0) F**  
**Random Processes:** PR: EEL 3122 and STA 3032. Random variables, averaging sampling, elements of probability theory.
- EEL 5630** **EN 3 (3,0) W**  
**Modern Control Design:** PR: EGN 4714 or C.I. State space representation of dynamic systems, the transition matrix, linearization of systems, optimal control.
- EEL 6144** **EN 3 (3,0) Su**  
**Synthesis of Electric Filters:** Analysis and design of electric filters.
- EEL 6349** **EN 3 (3,0) W**  
**Computer System Design:** PR: EEL 5365 or C.I. The specification, design, and programming of a digital computer system. Examination of digital systems architecture using a digital design language.
- EEL 6371** **EN 3 (3,0) F**  
**Amplifier Design:** Small-signal device models; analysis and synthesis of electronic amplifier circuits in frequency and time domains.
- EEL 6372** **EN 3 (3,0) W**  
**Operational Amplifiers:** The design of the differential amplifier stage, multi-staging, linear circuit applications, uses in non-linear circuits, active filters.
- EEL 6446** **EN 3 (3,0)**  
**Remote Sensing Optical Systems:** PR: EEL 3470 or equivalent. Study of electromagnetic phenomena and systems design at optical and near optical wavelengths and the use of such systems in environmental monitoring.
- EEL 6488** **EN 3 (3,0) Su**  
**Electromagnetic Fields:** Maxwell's equations. Boundary conditions. Propagation, reflection, and refraction of waves. Guided Waves. Radiation.
- EEL 6502** **EN 3 (3,0) W**  
**Digital Processing of Signals:** PR: EEL 5173 or C.I. Linear discrete system design theory, z-transform theory, discrete spectrum analysis, digital filtering, and Fast Fourier Transforms.
- EEL 6504** **EN 3 (3,0) S**  
**Communication Systems:** PR: EEL 6530 or C.I. Deep-space, LOS, and troposcatter communication system. Phase-locked loops, diversity, ranging. SNR and Error-rate calculations system design.
- EEL 6530** **EN 3 (3,0) W**  
**Communication Theory:** PR: EEL 5542 or C.I. Theory and systems design for communicating in the presence of noise, modulation, optimum filtering, phase-lock loop.
- EEL 6560** **EN 3 (3,0) W**  
**Optical Electronics:** PR: EEL 5441 or C.I. Introduction to optical electronic systems design, such as both gas and solid state laser systems, optical detectors, modulators, and frequency converters. Optical communication systems.



- EEL 6561** **EN 3 (3,0) S**  
**Fourier Optics:** Application of Fourier Transform theory to optical systems design. Development of optical correlation techniques. Holographic techniques and applications.
- EEL 6612** **EN 3 (3,0) W**  
**Modern Control Theory:** State space method of analysis and design for discrete and continuous control, phase plane, Lyapunov stability.
- EEL 6621** **EN 3 (3,0) Su**  
**Nonlinear Control Systems:** PR: EEL 6612. Analysis and design techniques for nonlinear systems, stability classifications, limit cycles, Popov's theorem. State variable description.
- EEL 6671** **EN 3 (3,0) S**  
**Optimal Control Systems:** PR: EEL 6612. Cost Function; control restraints, initial and target states. Design pontryagin's theorem, time, fuel, and energy optimization.
- EEL 6717** **EN 3 (3,0) S**  
**Digital Computer Systems:** PR: EEL 6349, ECM 4504 or C.I. Design of various computer systems. The Processor-Memory-Switch level of system analysis applied to systems with one or more central or I/O processors.
- EEL 6811** **EN 3 (3,0) F**  
**Modern Analog Computers:** Analog programming fundamentals and techniques emphasizing integral use of logic and analog elements as applied to systems design, boundary value problems, and partial differential equations.
- EEL 6811L** **EN 1 (0,3) F**  
**Modern Analog Computer Laboratory:** CR: EEL 6811. Laboratory for EEL 6811.
- EES 3031** **EN 2 (1,3) S**  
**Environmental Instrumentation:** PR: EGN 1380, 1381. Applications of the basic laboratory techniques and instrumentation required for environmental engineering practice.
- EES 3104** **EN 3 (3,0)**  
**Environmental Engineering Biology:** PR: EGN 1381. Principles of biology applicable to the engineering design of water supply and treatment, wastewater treatment and disposal, waste degradation and environmental quality control.
- EES 4202** **EN 3 (2,3) F**  
**Environmental Engineering—Chemical Foundations I:** PR: EES 3036. Engineering applications of physical and analytical chemistry in the treatment of water and wastewater.
- EES 4204** **EN 3 (2,3) W**  
**Environmental Engineering—Chemical Foundations II:** PR: EES 4202 or C.I. Continuation of EES 4202 to include organic chemistry and biochemistry and their application to environmental engineering.
- EES 4404** **EN 4 (4,0)**  
**Environmental Health:** PR: EGN 3704. Topics and design examples in industrial hygiene, occupational and radiological health hazards, and pollution effects, such as those due to air noise, solid wastes, etc.
- EEX 4010** **ED 4 (4,0) F,S**  
**Introduction to Exceptional Children:** PR: C.I. Educational programs, teaching procedures, and materials necessary to provide for the needs of exceptional students.
- EEX 4141** **ED 4 (4,0) W,Su**  
**Oral Communication Disabilities of Exceptional Children:** PR: C.I. Identification and remediation procedures of communication disabilities, including the areas of speech, hearing, and language disorders.
- EEX 4221** **ED 4 (4,0) W,Su**  
**Dimensions to Psycho-educational Appraisal:** PR: C.I. Educational policies and procedures aimed at identification of exceptional children in the public schools; evaluation procedures for individual children.
- EEX 5051** **ED 4 (4,0) F,W,S,Su**  
**Exceptional Children in the Schools:** PR: Senior Standing or C.I. Characteristics, definitions,

educational problems, and appropriate educational programs for the exceptional children in schools.

**EEX 5105** **ED 4 (4,0) W,Su**  
**Educational Implications for the Speech and Language Disorders of Exceptional Children:** PR: Rank III Certificate or C.I. Identification, evaluation, interpretation, and planning appropriate learning experiences to aid exceptional children with speech, hearing, and language disorders.

**EEX 5215** **ED 4 (4,0) W,Su**  
**Psycho-educational Appraisal of Exceptional Children:** PR: Rank III Certificate or C.I. Selection of performance objectives, diagnostic measures, prescriptive teaching programs, and progress evaluation procedures for individualizing instruction.

**EEX 6863** **ED 1-12 (0,1-12) F,W,S**  
**Supervised Teaching Practicum with Exceptional Children:** PR: Bachelor's degree, approved program, and C.I. Supervised observation and teaching under the direction of a properly certified exceptional child teacher.

**EGC 3443** **SS 4 (4,0)**  
**Interviewing and Counseling Techniques:** PR: PSY 2013, 2014 and PPE 3003. A survey into practical experience of interviewing and counseling procedures in most facets of psychology and related fields.

**EGC 5005** **ED 4**  
**Introduction to Guidance in Schools:** PR: Completion of Phase II of Educ. Prof. Prep. or Certificate or C.I. A basic course presenting an overview of the philosophy, organization, administration and operation of guidance and pupil personnel services in the schools.

**EGC 5033** **ED 4 (4,0) W,Su**  
**Guiding Human Relationships in the Classroom:** PR: Senior standing or Certificate. A course to teach human relationship skills which will enhance intra- and inter-personal relating skills in classrooms.

**EGC 6215** **ED 4 (3,2) F,S**  
**Individual Psycho-Educational Testing I:** Binet, WISC-R, WAIS: PR: EDF 6402 or C.I. Analysis of test theory and practice in administration, scoring, interpretation, and case report writing.

**EGC 6225** **ED 4 (3,2) W,Su**  
**Individual Psycho-Educational Testing II:** PR: C.I. Analysis of test theory and practice in administration, scoring and interpretation of tests assessing achievement, visual-motor and cognitive ability, adaptive behavior, and self-concept.

**EGC 6235** **ED 5 (2,3) W,Su**  
**Procedures for School Group Guidance Testing:** PR: EDF 6432 or C.I. Survey of various educational and psychological objective instruments used in schools to measure achievement, aptitude, interests, ability. Emphasis on administration and score interpretation.

**EGC 6317** **ED 4 (4,0)**  
**Vocational and Career Development Procedures:** PR: Certificate. Forces which affect career choice and shape personal development; vocational counseling, career education, and parent-student-school interrelationships.

**EGC 6435** **ED 4 (3,1) F,S**  
**Theories of Individual Counseling:** PR: EGC 5005 or C.I. Major theories and approaches to school counseling, correlating them with counterpart theories of personality and learning.

**EGC 6436** **EN 4 (1,3) W**  
**Techniques of Counseling:** PR: EGC-5005, EGC-6435, or C.I. The nature of the counseling relationship, therapeutic attitudes and techniques, and their relationships to theoretical concepts.

**EGC 6446** **ED 5 (0,5) F,W,S,Su**  
**Counseling Practicum in Schools:** PR: EGC 5005, 6435, 6436 or C.I. Supervised counseling emphasizing competence in (1) individual counseling; (2) working with groups; (3) tests in education-vocational-personal counseling. May be repeated for credit.

**EGC 6505** **ED 4 (4,0)**  
**Group Procedures in School Guidance Counseling:** PR: Certificate. EGC 5005 or EGC 6435, or C.I. Nature, theory, process of group counseling including study of dynamics related to change in

values and behavior of children and adolescents; class demonstration and practice.

**Egn 1081** **EN 3 (3,0)**

**Man Made World:** Introduction to engineering and its role in the understanding of the man made world.

**Egn 1111C** **EN 3 (2,3) F,W**

**Engineering Graphics:** Spatial visualization, sketching, and graphical presentation as a form of engineering communication. Engineering drawing, descriptive geometry, manipulation of vectors and graphical solution techniques.

**Egn 1380** **EN 3 (3,1) F,W**

**Chemical Foundations of Engineering:** PR: Satisfactory performance in one year of high school chemistry or physics; CR: MAC 2154. Engineering applications of basic chemical concepts. Atomic and molecular structure, states of matter and their energies, chemical equilibria and reaction rates, organic compounds, and industrial processes.

**Egn 1381** **EN 3 (3,1) W,S**

**Chemical Foundations of Engineering:** PR: EGN 1380. Continuation of EGN 1380.

**Egn 1510** **EN 4 (3,2) F,W**

**Creative Design:** PR: C.I. Role of the engineer as a creative design professional. Emphasis on understanding the creative process and the factors that influence it. Case studies.

**Egn 2382** **EN 4 (4,0) F,W,S,Su**

**Engineering Concepts:** CR: MAC 3311. Introduction to the basic physical phenomena essential to understanding of engineering structures, machines processes, and systems. Primary emphasis on mechanics, materials behavior, and thermofluid mechanics phenomena.

**Egn 3311** **EN 4 (4,0) F,W,S,Su**

**Engineering Analysis—Statics:** PR: EGN 2382 and MAC 3312. Fundamental concepts of mechanics including resultants of force systems, free-body diagrams, equilibrium of rigid bodies, and analyses of structures.

**Egn 3321** **EN 4 (4,0) F,W,S,Su**

**Engineering Analysis—Dynamics:** PR: EGN 3311 and MAC 3313. Kinematics and kinetics of particles and rigid bodies; mass and acceleration, work and energy, and impulse and momentum.

**Egn 3331** **EN 5 (4,2) F,W,S,Su**

**Mechanics of Materials:** PR: EGN 2382; CR: MAP 3305. Concepts of stress and strain, Hooke's Law; strength and deflection of axial force members, shafts in torsion and beams in flexure; combined stress; stability of columns.

**Egn 3343** **EN 4 (4,0) F,W,S,Su**

**Thermodynamics:** PR: EGN 3321; CR: MAC 3314. Work, heat and energy transformations. Relation of properties. Laws, concepts and modes of analysis common to all applications of thermodynamics in engineering.

**Egn 3353** **EN 4 (3,3) F,W,S,Su**

**Fluid Mechanics:** PR: EGN 3343. Basic principles of continuum fluid mechanics and transport concepts.

**Egn 3363** **4 (3,3) F,W,S,Su**

**Structure and Properties of Materials I:** PR: EGN 1381 and MAC 3312. Electrons and bonding, crystals, non-crystalline solids, equilibrium diagrams, non-equilibrium phase transformations, and diffusion in solids.

**Egn 3364** **EN 3 (2,2) F,W,S,Su**

**Structure and Properties of Materials II:** PR: EGN 3363. Chemical, mechanical and electrical properties of materials; structure and properties of engineering alloys.

**Egn 3373L** **EN 4 (3,3) F,W,S,Su**

**Principles of Electrical Engineering:** PR: EGN 3383; CR: MAP 3305. Fundamental laws of electrical circuits, DC and AC analysis, analog and digital electronics.

**Egn 3374L** **EN 4 (3,2) F,W,S,Su**

**Electronic Engineering:** PR: EGN 3373. Introductory concepts of electronic components with emphasis on solid state devices, basic amplifiers, biasing, small signal performance.

- EGN 3375L** **EN 4 (3,3) F,W,S,Su**  
**Electrical Devices and Systems:** PR: EGN 3373L. Electromagnetic energy conversion devices, feedback amplifiers, and instrumentation.
- EGN 3383** **EN 4 (4,0) F,W,S,Su**  
**Electrical Science:** PR: MAC 3313 and EGN 2382. General concepts of electricity and magnetism; the development of fundamental laws of electrical engineering; the introduction of the basic circuit elements.
- EGN 3613** **EN 3 (3,0) F,W,S,Su**  
**Engineering Economic Analysis:** PR: ECO 2000 or C.I. Economic evaluation of engineering alternatives and design. Time value of money and economic impact of taxes, risk, depreciation.
- EGN 3703** **EN 3 (2,2) F,W,S,Su**  
**Systems Analysis:** PR: MAP 3305. Introduction to mathematical analysis of linear systems. Behavior of linear systems as manifested by characteristics functions. Introduction to Laplace transforms, matrices, and state variable techniques.
- EGN 3704** **EN 3 (3,0) F,W,S,Su**  
**Engineering and the Environment:** PR: EGN 1381 or equivalent. Man's interaction with the air, water and land environment and the role of engineering in control of this environment for the benefit of mankind.
- EGN 3842** **EN 3 (3,0) F,W,S,Su**  
**Production Management Concepts:** The evolution of concepts, processes and institutions in the management of the production function. Productivity trends and measures of performance in contemporary industrial production.
- EGN 4032** **EN 2 (2,0)**  
**Professionalism, Practice and Ethics:** PR: Junior or Senior standing. Study of the professional engineer's role, practice and responsibility to act in the interests of public health, safety and welfare.
- EGN 4033** **EN 3 (3,0)**  
**Technology and Social Change:** Review of existing theories of social change, analysis of the role of technology as related to social change, and study of contemporary events in technology and their possible impact on society.
- EGN 4344** **EN 3 (3,0) F,W,S,Su**  
**Thermodynamics and Transport Processes:** PR: EGN 3343; CR: EGN 3353. Consequences of the second law and combined first and second law analysis of thermodynamics systems. Introduction to heat transfer including conduction, convection, and radiation.
- EGN 4514** **EN 3 (2,2) S**  
**Senior Creative Design:** PR: Senior standing. Application of the fundamental engineering design algorithm to design synthesis and inventiveness methods culminating in an individual or group engineering design project.
- EGN 4624** **EN 3 (3,0) F,W,S,Su**  
**Engineering Administration:** PR: EGN 3613 and senior standing. Engineering organization and administration; delegation of authority and responsibility; effective utilization of resources; compensation structure, labor-management relations; selected case studies.
- EGN 4634** **EN 3 (3,0) F,W,S,Su**  
**Operations Research:** PR: STA 3032. Mathematical methods of operations research; linear programming, techniques of optimizations.
- EGN 4714** **EN 4 (4,0) F,S**  
**Linear Control Systems:** PR: MAP 3305 and EGN 3375L. Theoretical and experimental study of the dynamics of linear, lumped parameter models of mechanical, electrical, fluid, thermal systems as applied to control systems and design applications.
- EGN 4813** **EN 3 (3,0)**  
**Science in History:** Examination of the reciprocal relations of science and society from ancient to recent times.
- EGN 4814** **EN 3 (3,0)**  
**Engineering & Technology in History:** Important developments in engineering and technology and

their effect on society and our socio-economic processes.

**EGN 4815** **EN 3 (3,0)**

**Historical Architecture:** Architecture as the realization of changing aesthetic and cultural ideals and the expression of changing forms of society. Development of understanding of our physical environment through a study of the forms, functions and determinants of architecture.

**EGN 4823** **EN 3 (3,0)**

**Topics in Urban Development:** Production, distribution, and consumption of various commodities. Engineering relationships to distribution, internal structure, function of urban developments. Interrelationship of engineering, social, economic, and cultural phenomena.

**EGN 4824** **EN 3 (3,0)**

**Energy and Man:** Investigation of the forms of energy available, energy resources versus requirements in a technological society of increasing population problems, solutions and future predictions.

**EGN 4825** **EN 3 (3,0)**

**Man and Environment:** PR: C.I. Environmental factors of importance to man, man's interaction with the environment, engineering and non-engineering measures to insure improvement and maintenance of environmental quality. Not for engineering students.

**EGN 4832** **EN 3 (3,0)**

**Computers, Cybernetics and Society:** The effects of computers and the cybernetic revolution on the individual and society. Effects of possible and negative feedback on biological, technological and social systems. Computers and their interactions with human system.

**EGN 4843** **EN 3 (3,0)**

**Systems Modeling:** PR: COC 1100 or equivalent. Representation of man/machine systems through analytic and computer-based models. Case studies in the analysis and improvement of systems in industry, education, and government.

**EGN 4844** **EN 3 (3,0)**

**Man and Machine:** The influence and interrelationship of invention and technical progress on the evolution of social forms and institutions.

**EGN 5034** **EN 3 (3,0)**

**Engineering and Public Works:** PR: C.I. The purposes, function, and role of engineering within public works.

**EGN 5035** **EN 3 (3,0)**

**Topics in Technological Development:** PR: C.I. Case studies of selected topics in the engineering and technological development of western civilization. The weight-driven clock, steam engine, electric power, radar, electronics, etc.

**EGN 5036** **EN 3 (3,0)**

**Engineering Codes and Standards:** PR: C.I. Development, history, and function of engineering codes and standards and their use in protecting public health and safety.

**EIN 3106** **EN 4 (4,0) Su**

**Engineering Law:** PR: Junior standing. Influence of contract, property and tort law, upon engineering activities; contracts, agency, partnerships, corporations, liens and expert testimony. Patents and licensing.

**EIN 3315L** **EN 4 (3,2) F**

**Management Standards:** CR: EGN 3613 or equivalent. Management standards for evaluation and control of man and man-machine systems. Flow and operation analysis, work measurement, job evaluations. Laboratory assignments.

**EIN 3393** **EN 3 (3,0)**

**Production Management:** PR: Sophomore standing. Principles and methods of production viewed from a managerial decision-making level.

**EIN 4116** **EN 3 (3,0) W**

**Industrial Information Systems:** PR: COP 3215, EIN 4332. Study of computerized information systems applied to manufacturing operations. Emphasis on development of automated information systems for control of men, materials and equipment. Laboratory assignments.

- EIN 4130L** **EN 4 (4,0)**  
**Safety Administration:** Organization of safety programs. Motivating safety habits and safety consciousness. Organizational aspects of accident prevention. Safety information systems and accidents costs.
- EIN 4214L** **EN 4 (4,0) W**  
**Safety Engineering:** PR: Junior standing. Basic principles of accident prevention in relation to hazards within workplace environment including machinery, flammable materials, pressure vessels and electrical hazards.
- EIN 4243** **EN 3 (2,2) S**  
**Human Engineering:** PR: Senior standing. Man-machine systems; design and conduct of human engineering studies.
- EIN 4264** **EN 4 (4,0)**  
**Occupational Health:** Industrial health hazards and occupational diseases. Control of health hazards; substitutions of less toxic materials, process changes, segregation of hazardous processes, noise control, radiation hazards.
- EIN 4332** **EN 3 (3,0) F**  
**Management Control Systems:** PR: STA 3032. Management decision rules including mathematical and economic models of forecasting, scheduling, order, and inventory control problems. Lab assignments using computer algorithms.
- EIN 4364L** **EN 4 (3,2) S**  
**Industrial Facilities Planning design:** PR: EIN 3315. Comprehensive design of industrial production systems including inter-relationships of plant location, process design, and materials handling. Laboratory assignments.
- EIN 4383** **EN 3 (2,2) Su**  
**Network Analysis:** PR: EGN 4634. Development, application and computerized analysis of networks for systems analysis and control. Applications of CPM, PERT, GERT, and maximal flow concepts.
- EIN 4414** **EN 3 (3,0)**  
**Introduction to Public Systems Analysis:** PR: STA 3032 or equivalent. Application of probability and statistics to the analysis of public systems data. Operations research models and applications; economic decision-models; cost/benefit analysis.
- EIN 5117L** **EN 4 (4,0) S**  
**Management Information Systems I:** PR: EIN 4116 or C.I. The design and implementation of computer-based Management Information Systems. Consideration is given to the organizational, managerial and economic aspects of MIS.
- EIN 5234L** **EN 4 (3,2)**  
**Industrial Security Systems Engr:** PR: Consent of instructor: Consideration of security threats. Methods of detection/control with emphasis on design and layout of automatic alarm systems for intrusion detection.
- EIN 5235L** **EN 4 (3,2)**  
**Industrial Fire Protection Engineering I:** PR: Consent of instructor. Chemistry of combustion, fire hazards properties of materials, storage and handling. Fire protection standards, codes and regulations. Building and facilities design and construction.
- EIN 6140** **EN 3 (3,0) S**  
**Project Engineering:** PR: Graduate standing. Role of the project engineering in research and development, emphasizing the sequence of steps from project proposal to project completion. Analytical techniques will be considered.
- EIN 6215** **EN 3 (3,0) W,Su**  
**System Safety:** PR: EIN 4214 or C.I. Concepts of system safety as applied to the recognition, evaluation and prevention or control of hazards in industry. Fault free analysis and risk management.
- EIN 6236L** **EN 4 (3,2)**  
**Industrial Fire Protection Engineering II:** PR: EIN 5235. Design/test of plant water supply systems. Methods of fire detection/control including design layout of automatic water, gas, powder extinguishment systems. Inspection/maintenance procedures.

- EIN 6258** **EN 3 (3,0)**  
**Man—Computer Interaction:** PR: EIN 4243 or C.I. The elements of man-computer interactive systems; hardware and software considerations; requirements of CAI, CAD, and MIS applications; design difficulties found in these systems.
- EIN 6337** **EN 4 (4,0)**  
**Production & Inventory Control:** PR: EIN 4332 or equivalent. Review of models and techniques used in forecasting, production control and inventory control. Includes aggregate planning, production scheduling, inventory management, models, etc.
- EIN 6338** **EN 3 (3,0) W**  
**Production Control:** PR: EIN 4332 & EIN 4116 or C.I. Analytical methods in production control. Topics include: forecasting, production planning and scheduling, sequencing, and manufacturing process control. Emphasis given to the application of computer systems.
- EIN 6357** **EN 3 (3,0) F**  
**Engineering Economic Analysis:** PR: EGN 3613. The engineering economic audit, breakeven point analysis, variable budget control of manufacturing costs, cost analysis and product pricing.
- EIN 6387** **EN 3 (3,0) Su**  
**Analysis of Industrial Operations:** PR: EIN 6357. Role of engineering economics and operations research in analysis of industrial operations. Includes application of linear programming, queuing, inventory model and decision theory case studies.
- EIN 6416** **EN 3 (3,0)**  
**Public Works Economics:** PR: EGN 3613 or equivalent. Economic considerations in public works planning. The nature and objective functions of public works projects; cost estimating, cost allocation and pricing. Cost/benefit analysis on primary and secondary benefits from public works projects.
- EIN 6417** **EN 3 (3,0) W**  
**Public Operating Systems Analysis:** PR: STA 3032 or equivalent. Data base for public operating systems, including identification of data requirements. Development of service demand and workload relationships, resource and manpower requirements.
- EIN 6419** **EN 4 (4,0)**  
**Urban Dynamics:** PR: C.I. Use of computer simulation to analyze governmental and private sector policies in selected areas such as housing programs, industrial, growth, worker training programs, environmental quality control, urban planning and land use planning.
- ELD 6051** **ED 3 (3,0) F,W,Su**  
**Theories of Learning Disabilities of School Children:** PR: Rank III Certificate or C.I. An introduction to etiology of learning disorders, with emphasis on psychological process disorders as they relate to school achievement.
- ELD 6114** **ED (3,0) F,W,Su**  
**Instructional Diagnosis of the Learning Disabled Child:** PR: ELD 6051 and EEX 5215. Evaluation techniques for diagnosing learning disabilities related to development in the basic school skills areas.
- ELD 6211** **ED 3 (3,0) S,Su**  
**Behavior Management Techniques with Exceptional Children:** PR: Rank III Certificate or C.I. Study of pupil management techniques and methods of continuous assessment for modifying and monitoring the learning behavior of exceptional pupils.
- ELD 6235** **ED 3 (3,0) S**  
**Individualized and Prescriptive Instruction for the Learning Disabled Child:** PR: Rank III Certificate or C.I. Study of program innovations and prescriptive programming for pupils with learning disabilities.
- EMA 4403** **EN 3 (3,0) F**  
**Semiconductor Materials and Devices:** PR: EGN 3375L and EGN 3364. Electrical conduction in semiconductors; basic concepts of drift, diffusion, carrier generation and recombination. Physical theory and models for the junction diode and transistor.
- EMA 4413** **EN 3 (3,0) W**  
**Electronic Properties of Materials:** PR: EGN 3363 and PHY 3101. Electronic processes in solids.

Electrical, magnetic and optical properties of solids. Electron energies in solids. Superconducting materials.

**EMA 5415** **EN 3 (3,0)**  
**Electronic Materials:** PR: EMA 4403 or C.I. Advanced topics on electronic materials.

**EMA 6126** **EN 3 (3,0) F**  
**Physical Metallurgy:** PR: EML 3233 or C.I. Thermodynamics and kinetics of nucleation and growth reactions to metallurgical processes with special emphasis on nucleation in solids. Diffusion theory. Point, line and surface defects.

**EMA 6626** **EN 3 (3,0)**  
**Mechanical Metallurgy:** PR: EML 3234. Microscopic treatment of the theories of strengthening, fracture, fatigue, and the role of dislocation interactions.

**EME 5208** **ED 4 (2,2)**  
**Media and Methods in Teaching:** PR: Rank III Certificate or C.I. Practicum on various media in the classroom with emphasis on student film making and production.

**EML 3106** **EN 4 (4,0)**  
**Thermodynamics of Mechanical Systems:** PR: EGN 3343. Applied thermodynamics, availability analysis, thermodynamics of reactive and non-reactive mixtures, thermodynamic relations of properties. Thermodynamic design analysis of complete mechanical systems.

**EML 3233** **EN 3 (3,0) S, odd years**  
**Physical Metallurgy:** PR: EGN 3363. Principles underlying the study of transformation in metals. Precipitation, martensite, recrystallization, and solidification.

**EML 3234** **EN 3 (3,0)**  
**Mechanical Properties of Material:** PR: EGN 3331, EGN 3363. Fundamentals of the behavior of engineering materials. Plastic deformation, fracture, fatigue, and creep.

**EML 3236** **EN 3 (3,0) F**  
**Structure and Properties of Alloys:** PR: EGN 3363. Relation of properties to structure, properties and environmental factors of engineering alloys.

**EML 3262** **EN 3 (2,2) F,S**  
**Kinematics and Kinetics of Machines:** PR: EGN 3321. Graphical, mathematical, and computer aided kinematics analysis and synthesis of basic mechanisms. Kinetic analysis of machines.

**EML 3502** **EN 4 (4,0) W**  
**Machine Design and Analysis:** PR: EML 3262. Application of concepts and principles of stress, deflection, strength, and fatigue analysis to machines design.

**EML 3709** **EN 4 (4,0)**  
**Gas Dynamics:** PR: EGN 3353. Continuation of EGN 3353. Topics in gas dynamics including shock waves, viscous flow analysis and solutions in boundary layer theory.

**EML 4142** **EN 4 (4,0)**  
**Heat Transfer:** PR: EGN 3353. Steady state and transient conduction in one and two dimensions, convective and radiative heat transfer. Analysis and design of heat exchangers.

**EML 4222** **EN 4 (4,0) W**  
**Vibration Analysis:** PR: EGN 3331. Undamped and damped vibrations of single degree of freedom systems. Forced vibrations, transient response. Many degrees of freedom systems, normal modes, vibration of elastic bodies.

**EML 4272** **EN 3 (3,0)**  
**Dynamics of Machinery:** PR: EML 3262, EML 4222. Critical speeds and response of flexible rotor systems, whirl gyroscopic effects; balancing of rotating and reciprocating masses; cam dynamics.

**EML 4303** **EN 3 (2,3)**  
**Measurement Systems:** PR: EGN 3331, EGW 3373. Application of system design concepts to measurement. Fundamental theory of static and dynamic measurements. Transducer principles and validation of experimental data.

**EML 4411** **EN 4 (4,0)**  
**Mechanical Power Systems:** PR: EML 3106. Analysis and design of large power generating systems and components with emphasis of steam plants utilizing both chemical and nuclear fuels.



- EML 4412L** **EN 2 (1,3) W,S**  
**Mechanical Engineering Laboratory:** PR: EGN 3353. Experimental studies of phenomena and performance of fluid flow, heat transfer, thermodynamic and mechanical power systems.
- EML 4505** **EN 3 (2,3) F,W,S**  
**Engineering Design:** PR: EML 3502 and ENL 3106, and senior standing. Application of the design process to the design of engineering components and systems. Fluid, mechanical and thermal problems are considered.
- EML 5105** **EN 3 (3,0) W**  
**Statistical Thermodynamics:** PR: EGN 3343. Statistical approach to thermodynamic concepts, laws, and methods of analysis. Generalized p-v-T data. Special systems.
- EML 5228** **EN 4 (4,0)**  
**Acoustics:** PR: C.I. Elements of vibration theory and wave motion; radiation, reflection, absorption, and transmission of acoustic waves; architectural acoustics; control and abatement of environmental noise pollution.
- EML 5271** **EN 3 (3,0)**  
**Intermediate Dynamics:** PR: EGN 3321, 3331, MAC 3311 or C.I. Dynamics of Particles, distributed mass systems, and rigid bodies from an advanced viewpoint. Virtual work. Lagrange's and Euler's equations. Hamilton's principles.
- EML 5451** **EN 3 (3,0)**  
**Energy Conversion:** PR: EGN 3343 and PHY 3101. Unconventional methods of energy conversion; particular emphasis on fuel cells, thermoelectrics, thermionics, solar energy, photovoltaics, nuclear, and magneto-hydrodynamics.
- EML 6104** **EN 3 (3,0)**  
**Classical Thermodynamics:** PR: EML 3106 or C.I. A general postulative approach to classical macroscopic thermodynamics featuring states as fundamental constructs. Conditions of equilibrium, stability criteria, thermodynamic potentials. Maxwell relations and phase transitions.
- EML 6124** **EN 3 (3,0)**  
**Two Phase Flow:** PR: C.I. General transport equations for multiphase systems including gas-liquid, gas-solid and liquid-solid systems.
- EML 6131** **EN 3 (3,0)**  
**Combustion Phenomena:** PR: EML 4142. Physical and chemical aspects of combustion phenomena. Rate processes, chemical kinetics, structure, propagation, aerodynamics and stability of premixed and diffusion flames.
- EML 6154** **EN 3 (3,0) F**  
**Conduction Heat Transfer:** PR: EML 4142 or C.I. Classical and numerical techniques to the solution of steady and transient conduction heat transfer problems, applications to the design of thermal systems.
- EML 6155** **EN 4 (4,0) W**  
**Convection Heat Transfer:** PR: EML 6712 or C.I. Convection heat, mass and momentum transfer in laminar and turbulent flows. Emphasis on analysis and evaluation of heat transfer coefficients, heat exchanger theory and design.
- EML 6157** **EN 3 (3,0)**  
**Radiation Heat Transfer:** PR: EML 6131 or C.I. Radiation properties and analysis of radiation heat transfer problems. Experimental techniques, applications to the design of space devices and solar energy systems.
- EML 6223** **EN 4 (4,0)**  
**Synthesis of Vibrating Systems:** PR: EML 5271 or C.I. Mechanical systems with multi-degrees-of-freedom. Introduction to non-linear and random vibrations. Concepts of modern dynamic analysis.
- EML 6279** **EN 3 (3,0) S**  
**Synthesis of Planar Mechanisms:** PR: EML 5271 or C.I. Advanced synthesis, analysis, and design of plane mechanisms. Application of inversion techniques. Robert's Laws, Euler-Savary equation. Freudenstein's equation. Dynamic force analysis and balancing.

- EML 6306** **EN 3 (3,0)**  
**Advanced Engineering Instrumentation:** PR: EML 4303 or equivalent. Theoretical and experimental study of principles of operation, analysis and design techniques for systems of a mechanical and electromechanical nature.
- EML 6311** **EN 3 (3,0)**  
**System Control:** PR: EGN 4714 or equivalent. Theoretical, experimental and computer methods involved in the design and control systems. Emphasis on non-linear systems and advanced methods for control system analysis and optimization.
- EML 6402** **EN 3 (3,0)**  
**Turbomachinery:** PR: EAS 4300 or EML 4411 or equivalent. Application of the principles of fluid mechanics, thermodynamics and aerodynamics to the design and analysis of pumps, compressors, and turbines.
- EML 6416** **EN 4 (4,0)**  
**Solar Energy Systems:** PR: EGN 3343, EML 4142 or C.I. Application of thermal science fundamentals to analysis of solar energy components and systems. Solar radiation, flat plate collectors, focusing collectors, water heating; space heating and cooling.
- EML 6453** **EN 4 (4,0) F**  
**Energy Analysis:** PR: Consent of instructor. Examination of energy demands and potential supply, computer simulation of resource depletion, alternate energy resources, transportation systems, economic and environmental constraints.
- EML 6506** **EN 4 (2,2) W, odd years**  
**Experimental Mechanics:** PR: EML 3303 or C.I. Selected topics in: photoelasticity. Application of holography to the determination of vibration modes. Measurement of correlation and coherence functions, transfer functions and acoustic emission.
- EML 6530** **EN 3 (3,0) S**  
**Principles of Design:** PR: CES 5102, EML 5271 or C.I. Morphology of design, introductory decision theory, reliability analysis and safety factors, strength optimization, probabilistic aspects and advanced topics in machine design.
- EML 6531** **EN 3 (3,0) W, even years**  
**Mechanical Behavior of Materials:** PR: CES 5102 or C.I. Emphasis on design applications. Macroscopic concepts of fracture mechanics, fatigue. Introduction to plasticity, limit analysis. Composite materials.
- EML 6532** **EN 3 (3,0) F, even years**  
**Computer-Aided Design:** PR: CES 5102 or C.I. Theory, application and implementation of digital computer oriented algorithms for the synthesis, simulation, analysis and design of mechanical systems.
- EML 6609** **EN 3 (3,0) F**  
**Environmental Thermodynamics:** PR: EML 3106. Thermodynamics of the environment with applications to the analysis, control and design of thermal systems.
- EML 6710** **EN 4 (4,0)**  
**Advanced Gas Dynamics:** PR: EML 3709 or C.I. Analysis of steady and unsteady subsonic, supersonic and hypersonic flows. Aerodynamics applications to the design of nozzles, diffusers, and high speed wind tunnels.
- EML 6712** **EN 4 (4,0) W**  
**Mechanics of Viscous Flow:** PR: ECM 4114 or C.I. Principal concepts and methods for viscous fluid motion. Incompressible and compressible boundary layer analysis for laminar and turbulent flows.
- EMR 4011** **ED 4 (4,0) W,Su**  
**Mental Retardation:** PR: C.I. An orientation to the meaning, the prevalence, the courses, and educational provisions for the mentally retarded child.
- EMR 4211** **ED 3 (3,0) W**  
**Curriculum and the Educable Mentally Retarded Child:** PR: C.I. Curriculum content and instructional strategies for the educable mentally retarded child.
- EMR 4360** **ED 3 (3,0) F**  
**Teaching Mentally Retarded Students:** PR: C.I. Organizing for instruction: present day and

emerging diagnostic and prescriptive teaching practices.

**EMR 5051**

**ED 4 (4,0) S**

**Fundamental Concepts of Mental Retardation:** PR: Rank III Certificate or C.I. Characteristics, and symptom groupings, diagnostic procedures, learning characteristics, and educational treatment procedures of the mentally retarded.

**EMR 5225**

**ED 3 (3,0)**

**Curriculum Planning Procedures for the Trainable Mentally Retarded:** PR: Rank III Certificate or C.I. Curriculum experiences, media use, pre-vocational skills development for development levels of trainable mentally retarded children.

**EMR 6218**

**ED 3 (3,0)**

**Curriculum Planning Procedures for the Educable Mentally Retarded:** PR: Rank III Certificate or C.I. Appropriate curriculum experiences and adjustments; media use; develop prevocational skills of educable mentally retarded children.

**EMR 6261**

**ED 3 (3,0)**

**Homemaking and Social Learning Skills for the Mentally Retarded:** PR: Rank III Certificate or C.I. Personal development and management in clothing maintenance and repair, cooking, the use of hand tools, and homemaking tasks.

**EMR 6362**

**ED 3 (3,0)**

**Classroom Organization for Teaching the Mentally Retarded:** PR: Rank III Certificate. EEX 5215, or C.I. Organization, scheduling, materials, equipment, instructional procedures.

**ENC 1103**

**HFA 4 (4,0) F,W,S,Su**

**Composition I:** Expository writing with emphasis on effective communication. Writing topics to be based on selected readings.

**ENC 1135**

**HFA 3 (3,0) F,W,S,Su**

**Exploring Literature Through Writing:** PR: ENC 1103 or equivalent. Writing practice based on readings in contemporary prose and poetry selected to invite the interest of students in literature.

**Note on Freshman English Program:**

ENC 1103 and 1135 may be taken to satisfy the State Department requirement for certification in secondary school teaching or for transfer to colleges that require one full year of Freshman English. Students who intend to major in English, English Education, or Library Science must have taken ENC 1135. English, Education and Library Science majors must complete ENC 1135 before enrolling in any English courses numbered above 1135 with the exception of ENC 3352.

**ENC 1251**

**HFA 3 (3,0) W,S**

**Writing and Research:** PR: ENC 1103. A writing course designed to focus on effective written argument and thorough preparation of library research papers.

**ENC 3352**

**HFA 3 (3,0) F,W,S,Su**

**Professional Reporting Writing I:** Emphasis on clear expository writing of memoranda, reports and articles in the student's particular field.

**ENC 3355**

**HFA 3 (3,0) F,W,S,Su**

**Professional Report Writing II:** Instruction and practice in scientific writing including preparation of scientific reports in the student's particular field.

**ENC 3412**

**HFA 4 (4,0) F**

**Writing Skills:** Intensive practice in description narration, exposition and argumentation; control of tone, mood, viewpoint, and level of diction. Applicable to article, essay, and short-story writing.

**ENC 3612**

**HFA 4 (4,0) W**

**Magazine Writing I:** PR: ENC 3412 or C.I. Structure and organization of articles, essays, profiles, and reviews; market analysis; data gathering may be repeated for credit.

**ENC 5529**

**HFA 4 (4,0)**

**Rhetoric and Literature:** Investigates the development of written strategies of persuasion. Traces their relation to practical and imaginative literature. Applications to classroom teaching of literature and composition.

<b>ENG 1542</b>	<b>HFA 2 (2,2) F,W,S,Su</b>
<b>Grammar Review:</b> A systematic review of basic English grammar to improve clarity and accuracy of writing.	
<b>ENG 3220</b>	<b>HFA 3 (3,0)</b>
<b>Continental European Fiction Since 1900:</b> A selection of significant works of fiction written in various languages during the present century, read in translation.	
<b>ENG 3714</b>	<b>HFA 3 (3,0) S</b>
<b>Structure of Verse:</b> Intensive study of the structural characteristics of English, poetry, metrical systems, rhyme, scansion, and poetic rhetorical devices.	
<b>ENG 3716</b>	<b>HFA 3 (3,0) S</b>
<b>Exploring Poetry:</b> A broad cultural approach to poetry, with emphasis upon the major themes and preoccupations of poets of all ages. Students from all disciplines are welcome.	
<b>ENG 3810</b>	<b>HFA 3 (3,0) S</b>
<b>Practical Criticism:</b> Student evaluation of selected fiction, poetry, and drama through practical exercises in literary criticism.	
<b>ENG 4226</b>	<b>HFA 3 (3,0)</b>
<b>British and American Fiction Since 1900</b>	
<b>ENG 4320</b>	<b>HFA 3 (3,0)</b>
<b>The British Novel in the 18th Century</b>	
<b>ENG 4324</b>	<b>HFA 3 (3,0)</b>
<b>The British Novel in the 19th Century</b>	
<b>ENG 4344</b>	<b>HFA 3 (3,0)</b>
<b>The American Novel in the 19th Century</b>	
<b>ENG 4452</b>	<b>HFA 3 (3,0)</b>
<b>British and American Drama Since 1900</b>	
<b>ENG 4512</b>	<b>HFA 3 (3,0)</b>
<b>History of the English Language:</b> Study of the English language and its development from Anglo-Saxon to Modern.	
<b>ENG 4550</b>	<b>HFA 4 (4,0) W</b>
<b>Modern English Grammar:</b> Emphasis upon the analysis and comparison of traditional, structural, and transformational grammar.	
<b>ENG 4574</b>	<b>HFA 3 (3,0)</b>
<b>Black English:</b> A study of the phonology, morphology, and syntax of Black English. Provides an understanding of the implications of Black English in contemporary society.	
<b>ENG 4743</b>	<b>HFA 3 (3,0)</b>
<b>British and American Poetry Since 1900</b>	
<b>ENG 4813</b>	<b>HFA 3 (3,0)</b>
<b>Historical Survey of Literary Criticism:</b> Study of the major critics from classical antiquity through the modern era.	
<b>ENG 5215</b>	<b>HFA 4 (4,0)</b>
<b>Studies in Contemporary Fiction:</b> Fiction of the last 20 years in the United States and Britain.	
<b>ENG 5430</b>	<b>HFA 4 (4,0)</b>
<b>English Drama to 1642 (exclusive of Shakespeare)</b>	
<b>ENG 5431</b>	<b>HFA 4 (4,0)</b>
<b>Restoration and 18th Century English Drama</b>	
<b>ENG 5830</b>	<b>HFA 4 (4,0)</b>
<b>Modern Theories of Literature:</b> Criticism since 1800.	
<b>ENG 6108</b>	<b>HFA 4 (4,0)</b>
<b>Literary Genres:</b> Provenance, structure and critical problems in a specific genre such as tragedy, the epic, the novel, or the lyric.	

<b>ENG 6155</b>	<b>HFA 4 (4,0)</b>
<b>Media and Popular Literature:</b> Study of the literary content of contemporary media; popular fictions, such as science fiction, detective fiction, and historical fiction. Application to classroom teaching.	
<b>ENL 2011</b>	<b>HFA 3 (3,0) F,Su</b>
<b>Survey of English Literature to 1625</b>	
<b>ENL 2018</b>	<b>HFA 3 (3,0) F,W</b>
<b>Survey of English Literature, 1626-1798</b>	
<b>ENL 2025</b>	<b>HFA 3 (3,0) W,S</b>
<b>Survey of English Literature, 1798-1914</b>	
<b>ENL 3028</b>	<b>HFA 3 (3,0) F,W</b>
<b>Survey of British Literature Since 1914</b>	
<b>ENL 4110</b>	<b>HFA 3 (3,0)</b>
<b>Chaucer:</b> <i>The Canterbury Tales</i> , <i>Troilus and Criseyde</i> , and other works.	
<b>ENL 4120</b>	<b>HFA 3 (3,0)</b>
<b>Milton:</b> <i>Paradise Lost</i> , <i>Paradise Regained</i> , <i>Samson Agonistes</i> , shorter poems and selected prose.	
<b>ENL 4131</b>	<b>HFA 3 (3,0) F,W</b>
<b>Readings in Shakespeare:</b> Reading and analysis of a selected group of comedies, histories, and tragedies for English Education majors.	
<b>ENL 4132</b>	<b>HFA 3 (3,0) Odd Yrs.</b>
<b>Shakespeare Studies:</b> Reading, analysis, and discussion of Shakespeare's plays. May be repeated for credit.	
<b>ENL 4321</b>	<b>HFA 3 (3,0) Even Yrs.</b>
<b>Renaissance Studies:</b> Reading, analysis and discussion of literature in English: 1588-1660. May be repeated for credit.	
<b>ENL 4353</b>	<b>HFA 3 (3,0) Odd Yrs.</b>
<b>18th Century Studies:</b> Reading, analysis, and discussion of literature in English: 1660-1800. May be repeated for credit.	
<b>ENL 4521</b>	<b>HFA 3 (3,0) Even Yrs.</b>
<b>19th Century Studies:</b> Reading, analysis, and discussion of literature in English: 1800-1914. May be repeated for credit.	
<b>ENL 5145</b>	<b>HFA 4 (4,0)</b>
<b>Shakespeare's Histories</b>	
<b>ENL 5146</b>	<b>HFA 4 (4,0)</b>
<b>Shakespeare's Comedies</b>	
<b>ENL 5147</b>	<b>HFA 4 (4,0)</b>
<b>Shakespeare's Tragedies</b>	
<b>ENL 5332</b>	<b>HFA 4 (4,0)</b>
<b>English Renaissance Literature I:</b> Elizabethan poetry and prose, 1588-1603.	
<b>ENL 5346</b>	<b>HFA 4 (4,0)</b>
<b>English Renaissance Literature II:</b> Jacobean and Caroline poetry and prose, 1603-1642.	
<b>ENL 5347</b>	<b>HFA 4 (4,0)</b>
<b>English Renaissance Literature III:</b> Commonwealth and poetry and prose, 1642-1660, including Milton.	
<b>ENL 5355</b>	<b>HFA 4 (4,0)</b>
<b>Studies in Restoration English Literature:</b> Literature of the Restoration.	
<b>ENL 5356</b>	<b>HFA 4 (4,0)</b>
<b>English Literature 1700-1745:</b> Prose and poetry of the first half of the 18th Century.	
<b>ENL 5357</b>	<b>HFA 4 (4,0)</b>
<b>English Literature, 1745-1798:</b> Prose and poetry of the last half of the 18th Century.	

- ENL 5405** **HFA 4 (4,0)**  
**The Romantic Revolt (19th Century Literature):** The romantic revolt in poetry and prose; English, American, and Continental literature, 1798-1832.
- ENL 5415** **HFA 4 (4,0)**  
**Doubt and Belief (19th Century Literature):** English, American, and Continental literature, 1832-1870.
- ENL 5424** **HFA 4 (4,0)**  
**Decadence and Renewal (19th Century Literature):** English, American, and Continental literature, 1870-1914.
- ENU 4005** **EN (4) S**  
**Nuclear Reactor Engineering:** PR: ENU 4103. Nuclear concepts, and plant cycles for energy conversion. Application of thermodynamics, fluid mechanics, heat transfer, control theory and materials to nuclear reactor design.
- ENU 4103** **EN 4 (4,0)**  
**Nuclear Engineering:** PR: EGN 3343 and PHY 3101. Introduction to the principles of nuclear engineering, nuclear chain reactions, reactor systems and control, health physics, radiation shielding and applications of nuclear energy.
- ENV 4119** **EN 3 (3,0)**  
**Air Pollution:** PR: EGN 3704. Sources, causes, and effects of air pollution. Engineering standards, analysis, and design considerations.
- ENV 4404** **EN 4 (4,0) F**  
**Environmental Engineering—Water Supply:** CR: EGN 3353. Water resources, hydrologic cycle, water quality, chemistry of natural water. Design consideration for water treatment, transmission and distribution.
- ENV 4434** **EN 3 (3,0) S**  
**Sanitary Systems Design:** PR: ENV 4404 and 4504 or C.I. Planning capacity and design of water distribution systems, sanitary sewerage, storm drainage systems, water and wastewater treatment plants.
- ENV 4504** **EN 4 (4,0) W**  
**Environmental Engineering—Wastewater:** CR: ENV 4404. Drainage systems, collection and transmission of wastewater, channel flow, biodegradation of organic wastes. Design principles of wastewater treatment, effluent and sludge handling and disposal.
- ENV 5355** **EN 3 (3,0)**  
**Solid Wastes:** PR: EGN 3704 or C.I. Engineering design and analysis problems associated with collection and disposal of solid wastes.
- ENV 5615** **EN 4 (4,0)**  
**Environmental Impact Assessment:** PR: C.I. Evaluation, estimating, and predicting the effects of structures, processes, and systems upon the environment and the effects of environmental changes upon human populations.
- ENV 5625** **EN 4 (4,0)**  
**Water Resources Engineering:** PR: ENV 4404 Systems identification and solution to complex water allocation problems, and other hydraulic engineering designs and operations using economic analysis and operations research techniques.
- ENV 6015** **EN 4 (4,0)**  
**Unit Operations and Processes of Sanitary Engineering:** PR: ENV 4404, and ENV 4504. Theory and design of physical, chemical, and biological operations and processes used in sanitary engineering.
- ENV 6016** **EN 4 (4,0)**  
**Unit Operations and Processes of Sanitary Engineering II:** Continuation of ENV 6015. Theory and design of physical, chemical, and biological operations and processes.
- ENV 6017L** **EN 2 (0,6) S**  
**Unit Operations and Processes Laboratory:** PR: EES 5206 or C.I. Laboratory exercises in physical, chemical, and biological processes applicable to design.

- ENV 6106** **EN 3 (3,0)**  
**Atmospheric Pollution Control:** PR: ENV 4119 or C.I. Atmospheric composition and dynamics, sources and nature of contaminants, toxicity thresholds and biological significance, engineering methods of measurement design and control.
- ENV 6356** **EN 4 (4,0)**  
**Solid Wastes Management:** Study of the extent and characteristics of the solid waste problem, collection and disposal systems, environmental modeling and selected designs.
- ENV 6416** **EN 3 (3,0)**  
**Water and Wastewater Treatment Systems:** PR: C.I. Integration of unit operations and processes into treatment systems. Emphasis will be placed on functional hydraulic, and economic design using computers.
- ENV 6436** **EN 3 (3,0) S**  
**Water and Wastewater Systems Design:** PR: ENV 4404 and 4504 or C.I. Project course on design of water and wastewater systems.
- ENY 4004** **NS 4 (3,3)**  
**General Entomology:** PR: ZOO 1010. Introduction to insects; their identification, biology and ecology.
- ESE 3011** **ED 3 (3,0) F,W,S**  
**School Programs:** PR: EDF 3255 and EDF 3603. A study of the public school curriculum, kindergarten through grade twelve.
- ESE 3321** **ED 4 (3,3) F,W,S**  
**Teaching Techniques:** PR: EDF 3603, CR: ESE 3940. A series of modules on the use and evaluation of selected technical teaching skills.
- ESE 3322** **ED 4 (3,3) F,W,S**  
**Teaching Strategies:** PR: EDF 3603, CR: ESE 3940. A series of modules on planning, development and managing teaching situations.
- ESE 3940** **ED 3 (0,14) F,W,S**  
**Secondary School Student Teaching—Block A:** PR: EDF 3255 and EDF 3603. Junior year student teaching in a secondary school under the supervision of a certified classroom teacher.
- ESE 4943** **ED 9 (0,30) F,W,S**  
**Secondary School Student Teaching—Block C:** PR: ESE 3940. Senior year student teaching in a secondary school under the direction of a certified classroom teacher.
- ESE 5214** **ED 4 (4,0)**  
**Secondary School Curriculum Improvement:** PR: Rank III Certificate or C.I. Secondary School self-studies for curriculum projects, accreditation reports, or staff development.
- ESE 5335** **ED 4 (4,0)**  
**Teaching the Non-English Student:** PR: FLE 3063 or Bilingual and non-linguistic instruction in curriculum areas and in English as a second language.
- ESE 6217** **ED 3 (3,0)**  
**Patterns of Curriculum and Instruction:** PR: Rank III Certificate or C.I. An analysis of exemplary secondary school programs and instructional procedures.
- ESE 6218** **ED 3 (3,0) F**  
**Curriculum Writing:** PR: Rank III Certificate or C.I. Goal analysis, task analysis, needs assessment and writing performance objectives for developing courses of study.
- ESE 6325** **ED 4 (4,0) S**  
**Curriculum in the Secondary School:** PR: Rank III Certificate or C.I. The foundations, design and development of curriculum in the American culture.
- ESE 6935** **ED 3 (3,0)**  
**Seminar in Secondary School Instruction:** PR: Rank III Certificate or C.I. Systematic and objective analysis of instruction, human relations, approaches to improving instructions and teaching strategies.
- ESI 4144** **EN 4 (4,0) F,S**  
**Engineering Applications of Computer Methods:** PR: COP 3215 and MAC 3314. Structuring

engineering problems for computers including computer characteristics and performance measures. Introduction to time sharing and computer aided design.

**ESI 4503** **EN 3 (3,0) W**  
**Numerical Methods in Systems Analysis:** PR: STA 3032. Application of vector space and matrix concepts to systems problems. Analysis of linear transformations and simultaneous linear equations. Introduction to finite Markov processes.

**ESI 4524** **EN 3 (2,2) S**  
**System Simulation with Digital Computers:** PR: COP 3215 or equivalent. Methods and procedures for simulating large scale systems with digital computers, FORTRAN, CSMP and GPSS programming languages are used.

**ESI 5234** **EN 3 (3,0) W**  
**Engineering Reliability and Quality Assurance:** PR: STA 3032 or C.I. Design and management of reliability programs and quality assurance systems; mathematics of reliability.

**ESI 5575** **EN 4 (4,0) F**  
**Mathematical Systems Theory II:** PR: C.I. Introduction to nonlinear analysis. Approximation methods of numerical solutions. Stability of non-linear systems. Systems examples to be taken from engineering, environmental science, and economics.

**ESI 6316** **EN 3 (3,0) F**  
**Operations Research I:** PR: EGN 4634 or equivalent. Methods of operations research including formulation of models and derivation of solutions by optimization techniques; sequencing and replacement, linear programming, geometric and dynamic programming.

**ESI 6317** **EN 4 (4,0) W**  
**Operations Research II:** PR: ESI 6136. Introduction to stochastic models and techniques including queuing theory. Simulation, non-linear programming, calculus of variations, and forecasting.

**ESI 6336** **EN 3 (3,0) Su**  
**Queuing Systems:** PR: ESI 5217. Analysis of queuing systems and waiting line problems using analytical and Monte Carlo methods. Laboratory assignments.

**ESI 6342** **EN 3 (3,0) S**  
**Inventory Theory:** PR: EIN 4332 & EIN 4116 or C.I. Introduction to the theory of inventory control. Emphasis on construction and solution of mathematical models. Includes analysis of inventory systems under deterministic and stochastic demand.

**ESI 6416L** **EN 4 (4,0) F**  
**Linear Programming:** PR: EGN 4634 or equivalent. Theoretical and computational aspects of linear programming and related topics. Includes simplex algorithms, duality theory and integer programming. Operational applications and computer solutions are emphasized.

**ESI 6427** **EN 4 (4,0) W**  
**Non-linear Programming:** PR: ESI 6316. Study of non-linear programming, separate programming, and geometric programming.

**ESI 6437** **EN 4 (4,0) S**  
**Dynamic Programming:** PR: ESI 6136. A study of the optimization of multi-stage decision processes based on the application of the principle of optimality. Stochastic and deterministic models are developed.

**ESI 6525** **EN 4 (4,0) F**  
**Systems Dynamics:** PR: COP 3215 or equivalent. Industrial dynamics and the use of computer-based simulation models for the improvement of management control systems. Use of Dynamo II computer simulation language.

**ESI 6576** **EN 4 (4,0) W**  
**Mathematical Systems Theory III:** PR: ESI 5575. Adaptive systems and trainable machines. Introduction to cybernetics and artificial intelligence.

**ESL 1141** **HFA 4 (4,0) W,S**  
**Basic Writing:** PR: C.I. A course in basic English writing, designed primarily for the international student, to provide intensive practice in writing effective sentences and paragraphs.

**ETC 4410C** **EN 4 (3,2)**  
**Structural Design:** PR: ETG 4530. Design of mechanical and structural elements. Strength,



fatigue, safety factors and code requirements.

**ETE 3122C** **EN 4 (4,0)**

**Electronic Circuits:** PR: 10 quarter hours of Solid State Electronics and MAC 3253. Analysis and design of Electronic Circuits. Introduction to computer-aided design.

**ETE 3632** **EN 4 (3,2)**

**Digital Circuits:** PR: 10 hours solid state electronics. Design of digital circuits using integrated circuits. Laboratory.

**ETE 4111** **EN 5 (4,2)**

**Electricity and Electronics:** Basic principles of electric circuits and electronic amplifiers. Introduction to integrated circuits.

**ETE 4161L** **EN 2 (0,4)**

**Senior Systems Laboratory:** PR: Senior Standing and C. I. Experiments covering topics in electronics module. Use of latest integrated circuit function blocks.

**ETE 4210C** **EN 4 (3,2)**

**Servomechanisms:** PR: ETE 4111. Analysis and design of servo devices and systems.

**ETE 4326** **EN 3 (3,0)**

**Feedback Control:** PR: ETE 3122 and MAC 3254. Feedback control system analysis and design techniques, control system components, and applications to practical control systems.

**ETE 4422** **EN 3 (3,0)**

**Communications Systems:** The study of modulation/demodulation systems.

**ETE 4423C** **EN 4 (3,2)**

**Communication Systems II:** PR: ETE 4422 or equivalent. Analysis and design of advanced electronic communication systems.

**ETE 4432** **EN 3 (3,0)**

**Antennas and Propagation:** PR: ETE 3122. Basic theory and technology used in high frequency transmission lines and waveguides, propagation and radiation, antennas.

**ETE 4541** **EN 4 (4,0) W**

**Power Transmission:** PR: C.I. Analysis of transmission systems and components. Control, stability, fault analysis and protection in power systems.

**ETE 4562** **EN 4 (4,0) W**

**Power Utilization:** PR: C.I. Analysis of the economic aspects of distribution and use of power in industry. Analysis of motors and generators.

**ETE 4650** **EN 4 (4,0)**

**Microcomputer Electronics:** PR: ETE 3632 and a programming course. Hardware analysis and design of solid state electronic Microcomputers. Applications.

**ETE 4661** **EN 4 (3,2)**

**Computer Systems:** PR: ETE 3632. Design and analysis of computational circuitry, memory, computer interfaces, displays, and I/O devices. Study of microcomputers with applications.

**ETE 4735C** **EN 4 (3,2)**

**Electro-Mechanical Design:** PR: ETE 4111 and ETG 4510. Introduction to mechanical and electro-mechanical devices and their applications in industry.

**ETG 3502** **EN 4 (4,0) F**

**Applied Statics:** PR: MAC 1132 or Equivalent. Coplanar parallel, concurrent and nonconcurrent force systems. Noncoplanar concurrent and nonconcurrent force systems. Centroids, centers of gravity and moments of inertia of areas.

**ETG 4510** **EN 4 (4,0)**

**Applied Dynamics:** PR: MAC 3254 and ETC 3502. Basic principles of dynamics. Kinematics and kinetics of rectilinear motion and rotation. Work, energy, power, impulse, momentum and impact.

**ETG 4530C** **EN 4 (4,0)**

**Strength of Materials:** PR: ETG 3502 or C.I. Relationship between external forces and action of members of a structure. Topics include stress and strain, torsion, beams, columns, stress concentrations and fatigue.

- ETG 4910** **EN 3 (3,0)**  
**Senior Project:** PR: ETM 4590. Individual project involving product conception, design, development, construction, and testing. A final technical report is required.
- ETI 3421C** **EN 4 (4,0)**  
**Materials and Processes:** PR: MAC 1142 and 1143 or equivalent. Relation between structure and properties of metals, wood, ceramics and polymers. Testing and inspection, casting, forming and working of metals, heat treatment, and joining.
- ETI 3440** **EN 4 (3,3)**  
**Product Design:** Principles of layout and dimensions for production. Considerations of design factors, standards, specifications and codes with emphasis on productibility.
- ETI 3611** **EN 3 (3,0)**  
**Work Analysis:** PR: Junior standing. Analysis of work elements in technical projects. Work simplification and methods improvements in technical operations.
- ETI 3651** **EN 3 (3,0)**  
**Computer Methods in Industry:** PR: COP 1100 or equivalent. An overview of industrial EDP applications. Includes data processing concepts, functions of the computer, and applications in data processing, process and machine control.
- ETI 3654** **EN 3 (2,2)**  
**Cost Estimation and Analysis:** Determination and analysis of cost of manufacturing and construction operations including applicable indirect costs. Costs of all applicable work materials and services are included.
- ETI 3671** **EN 3 (3,0)**  
**Technical Economic Analysis:** PR: Junior standing. Analysis of cost elements in technical operations. Basis for comparison of alternatives.
- ETI 3690** **EN 3 (3,0)**  
**Technical Sales:** Application of technical knowledge in sales and service. Relationship of technical sales organization to production, customers, and competitors.
- ETI 4110** **EN 3 (3,0)**  
**Industrial Quality Control:** Fundamentals of industrial quality control. Technical specifications, measurements standards, inspection, and gaging. Process control techniques.
- ETI 4452** **EN 3 (3,0)**  
**Plant Maintenance Operation:** Organization of the maintenance function in manufacturing and service industries. Maintenance planning and scheduling analysis of required and preventive maintenance operations, including economic trade-offs.
- ETI 4640** **EN 3 (3,0)**  
**Process Planning and Scheduling:** Planning and control of specific tasks, and manhours related thereto. Includes description and application of techniques used in construction and manufacturing industries.
- ETI 4661** **EN 3 (3,0)**  
**Plant Layout and Material Handling:** Covers functional phases of plant site selection, plant layout, material handling, warehousing, space allocation, CPM concepts and use of electronic computers.
- ETI 4700** **EN 3 (3,0)**  
**Occupational Safety:** Accident prevention and the operation of an industrial safety program. Basic requirements of the Occupational Safety and Health Act standards.
- ETM 3310** **EN 4 (4,0) F**  
**Applied Fluid Mechanics:** PR: Basic Physics Course and Junior standing. Application of principles of fluid mechanics. With emphasis on pipes, pumps, and other equipment.
- ETM 3314** **EN 3 (3,0)**  
**Hydraulics and Hydrology:** PR: Junior standing. Applied hydraulics and hydrology including design of closed and open channel flow, rainfall, runoff, seepage, ground water, storage and impoundments, wells, etc.

- ETM 4201** **EN 4 (4,0)**  
**Applied Thermodynamics:** PR: MAC 3254. Introduction to concepts of energy, work and heat; thermodynamic properties and processes; basic laws; cycle efficiency; flow through orifices and nozzles; empirical design formulae.
- ETM 4403C** **EN 4 (3,2)**  
**Applied Kinematics:** PR: ETG 3502, ETG 4510. Masses, motions, kinematics and dynamics of mechanisms.
- ETM 4512C** **EN 4 (3,2)**  
**Applied Design of Machine Elements:** PR: ETG 3502, ETG 4530. Design of basic machine elements including cams, gears, bearings and couplings taking into account loads, stresses, and strength of materials.
- ETM 4590** **EN 3 (3,0)**  
**Design Integration:** PR: ETI 3440. Project design involving planning, control, prototype construction, testing and evaluation.
- ETM 4750C** **EN 4 (4,0) S**  
**Applied Air Conditioning:** PR: C.I. Analysis of body comfort, psychrometrics, heat sources, cooling load, air distribution, duct sizing, control systems, and balancing.
- EUH 2000** **HFA 4 (4,0) F,W,S**  
**Ancient and medieval Civilization:** Rise of culture and civilization in the West from earliest times to the eve of the Renaissance.
- EUH 2001** **HFA 4 (4,0) F,W,S**  
**European Civilization from the Renaissance to the French Revolution:** Europe from its feudalmanorial state through the Napoleonic era.
- EUH 2002** **HFA 4 (4,0) F,W,S**  
**Modern European Civilization:** The Romantic era, the influence and liberalism, nationalism, and modern industrialism upon political, social, economic, and intellectual life.
- EUH 2545** **HFA 4 (4,0)**  
**Introduction to Anglo-American Law:** A historical survey of the development of the principles and processes of the American law from its origins in English common law to the present.
- EUH 3121** **HFA 4 (4,0)**  
**Age of Transition:** A survey of social, economic, political, religious, and cultural developments in Europe from the fall of Rome to the 10th century.
- EUH 3122** **HFA 4 (4,0)**  
**Medieval Society and Civilization.**
- EUH 3142** **HFA 4 (4,0)**  
**Renaissance and Reformation:** The influence of Renaissance humanism on arts, letters, and politics; Luther and Protestantism; the Catholic Counter-Reformation and the Thirty Years' War.
- EUH 3202** **HFA 4 (4,0)**  
**Enlightenment and Religious Revival:** Science and political absolutism; the Enlightenment and the *philosophies*; secularism, cosmopolitanism and humanitarianism; the French Revolution; religious revival, and the beginning of romanticism. (Formerly EUH 3121.)
- EUH 3235** **FHA 4 (4,0)**  
**Romanticism and Realism:** Napoleon and nationalism; new ideas; conservation; liberalism, romanticism, republicanism and socialism; urbanization, technology and mass culture; religious decline; *Realpolitik*, racism, imperialism and militarism. (Formerly EUH 3122.)
- EUH 3242** **HFA 4 (4,0)**  
**The Rise of Mass Culture and Democracy, 1890-1930:** Europe in the era of modern technology, militarism, the First World War, Paris Peace Conference, popular culture, and new democratic institution east of the Rhine.
- EUH 3281** **HFA 4 (4,0)**  
**Second World War and Rebirth of Europe:** Origins of World War II; Hitler's "New Order," and resistance movements; Cold War; de-Stalinization of Russia; Sovietization of East Central Europe; Western reconstruction, and prosperity.

- EUH 3400** **HFA 4 (4,0)**  
**The Classical World: Greece:** History and culture of Greece from the Minoan-Mycenaean to the Hellenistic age, with emphasis on contributions in art, literature and philosophy. (Same as HUM 3431).
- EUH 3411** **HFA 4 (4,0)**  
**The Classical World: Rome:** History and culture of Rome from the Etruscan Period to the dissolution of the empire, with emphasis on contributions in architecture, law and literature. (Same as HUM 3432).
- EUH 3453** **HFA 4 (4,0)**  
**Age of Revolution and Napoleon:** Cause and course of the revolution; the rise and fall of Napoleon; impact on the thought and action of Western Europe.
- EUH 4284** **HFA 4 (4,0)**  
**Fascism and the Totalitarian Dictatorships:** Totalitarian ideologies, institutions, and practices in Lenin's and Stalin's Russia. Mussolini's Italy, and Hitler's Third Reich; fascist movements in the non-totalitarian states.
- EUH 4451** **HFA 4 (4,0)**  
**France, 1815-1914:** Legacy of the French Revolution; Revolutions of 1830 and 1848; Franco-Prussian War and Third French Republic; Franco-German-Rivalry and formation of the Entente.
- EUH 4456** **HFA 4 (4,0)**  
**France, 1914-Present:** World War and aftermath; Locarno spirit; rise of Fascism and French response, World War II; Fourth Republic and Reconstruction; deGaulle and the Fifth Republic.
- EUH 4462** **HFA 4 (4,0)**  
**The Rise of Modern Germany:** Central Europe from the Reformation to 1890; The Thirty Years' War and absolute despotism; Austro-Prussian rivalry; the German Enlightenment, Bismarck and the Second Reich.
- EUH 4464** **HFA 4 (4,0)**  
**Hitler's Third Reich:** German nationalism and militarism; World War I and the Versailles Treaty; the Weimar Republic and the rise of the Nazis; Second World War, division and recovery.
- EUH 4501** **HFA 4 (4,0)**  
**English History: 1485-1815**
- EUH 4502** **HFA 4 (4,0)**  
**British History: 1815-Present**
- EUH 4503** **HFA 4 (4,0)**  
**English History to 1485**
- EUH 4511** **HFA 4 (4,0)**  
**British History: Tudor-Stuart Period:** A study of the Tudor-Stuart period, with particular emphasis on the civil/religious conflicts of the time.
- EUH 4530** **HFA 4 (4,0)**  
**British Empire and Commonwealth:** Development of the British Empire and Commonwealth since the American Revolution.
- EUH 4571** **HFA 4 (4,0)**  
**History of Russia to 1801:** Kievan State; Mongol Yoke; Development of Muscovite Expansionism and Absolutism; Time of Troubles; Westernization of Russia under Peter I and Catherine; Role of Orthodox Church.
- EUH 4572** **HFA 4 (4,0)**  
**History of Russia: 1801-1917:** Alexander I; Napoleonic Invasion, Revolutionary Movement; Russian Policy toward Central Asia and China; Great Reforms; Russo-Japanese War; Revolution of 1905; Constitutional Period; Triple Entente.
- EUH 4573** **HFA 4 (4,0)**  
**History of the Soviet Union: 1917-Present:** First War; 1917 Revolutions; Civil War; New Economic Policy; Stalin-Trotsky Struggle; Collectivization; Stalinist Purges; Second War; Post-Stalin Russia; Khrushchev; Sino-Soviet Relations.

- EUH 4582** **HFA 4 (4,0)**  
**Soviet Foreign Policy: 1917-Present.**
- EUH 4620** **HFA 4 (4,0) W**  
**European Great Powers: 1815-1915:** Congress of Vienna, Metternich's system Crimean War, unifications of Italy & Germany, the Bismarckian era, the alliance systems, & the outbreak of World War I.
- EUH 4621** **HFA 4 (4,0)**  
**War and International Politics in Europe, 1914 to Present:** The relationship of the European Great Powers from the outbreak of WW I to the present.
- EVS 3220** **EN 3 (3,0)**  
**Wastewater Systems:** Fundamentals techniques applicable to technical projects dealing with collection and transmission of wastewater, treatment of wastewater, handling and disposal of effluent and sludge.
- EVS 3240** **EN 3 (3,0)**  
**Water Supply Systems:** Techniques applicable to technical projects dealing with resources, hydrology, treatment, transmission and distribution.
- EVS 4101** **EN 3 (3,0)**  
**Environmental Sampling and Analyses:** Fundamental techniques applicable to sampling and performing lab analyses of our physical environment, including air, water and land. Interrelation and analysis of results.
- EVS 4233** **EN 3 (3,0)**  
**Treatment Plant Analyses and Control:** Basic techniques applicable to lab analyses, control measures, and overall operation of water and wastewater treatment plants.
- EVS 4362** **EN 3 (3,0)**  
**Air Pollution Control:** Fundamental Techniques applicable to analyzing composition and sources of pollutants, measuring concentrations, and controlling emissions. Aid pollution control programs, laws, rules, and regulations.
- EVS 4682** **EN 3 (3,0)**  
**Solid Waste Management:** Techniques applicable to solid waste composition, collection and disposal. Solid wastes programs, laws, rules and regulations.
- EVT 3062** **ED 4 (4,0) F,W,S,Su**  
**Professional Role of the Vocational Teacher:** PR: EVT 3063 or C.I.
- EVT 3365** **ED 4 (4,0) F,W,S**  
**Methods of Teaching in Vocational Subjects:** PR: EVT 3063 or C.I. Study, practice and achievement of basic teaching techniques specifically applicable to vocational education.
- EVT 3366** **ED 4 (4,0) F,W,S**  
**Instructional Materials for Vocational Education:** PR: 3063 or C.I. Study, practice, and achievement of skills in the use of instructional materials, equipment, and related vocational teaching techniques.
- EVT 3367** **ED 4 (4,0) F,W,S**  
**Evaluation of Vocational Instruction:** PR: EVT 3063 or C.I. Study, practice and achievement of competency in assessing student cognitive, affective, and psychomotor performance in vocational education.
- EVT 3371** **ED 4 (4,0) F,W,S,Su**  
**Essential Teaching Skills in Vocational Education:** Study, practice, and achievement of selected essential teaching skills for beginning vocational instructors.
- EVT 3562** **ED 3 (3,0) F,W,S**  
**Special Needs of Vocational Students:** PR: EVT 3063 or C.I. Achievement of teacher competency in meeting the special educational needs of the handicapped, culturally different, slower learner, and those with reading deficiencies.
- EVT 3815** **ED 3 (3,0) F,W,S**  
**Management of the Vocational Classroom and Laboratory:** PR: EVT 3063 or C.I. Organization and management of school facilities for instructional purposes and skill in providing for student health and safety.

- EVT 4066** **ED 2-6 (2-6,0) F,W,S**  
**Principles and Practices of Vocational Education:** PR: Rank III Certificate or C.I. Study of the history, structure, and current status of vocational education. Achievement of competency in applying principles of vocational education to contemporary instructional programs.
- EVT 4368** **ED 2-6 (2-6,0) F,W,S**  
**Advanced Teaching Techniques for Vocational Education:** PR: EVT 3365 or C.I. Study, practice, and achievement of higher level teaching techniques, especially those involving interaction and higher cognitive levels.
- EVT 5260** **ED 2-6 (2-6,0) W**  
**Cooperative Programs in Vocational Education:** PR: Rank III Certificate or C.I. Study of cooperative vocational programs, and achievement of competencies needed to establish, manage, and coordinate co-op program activities in all vocational areas.
- EVT 5267** **ED 2-6 (2-6,0) F**  
**Vocational Program Planning, Development and Evaluation:** PR: Rank III Certificate or C.I. Achievement of selected teacher competencies related to program objectives, courses of study, long-range plans, and techniques for evaluating vocational program effectiveness.
- EVT 5561** **ED 2-4 (2-4,0)**  
**Student Guidance in the Vocational Program:** PR: Rank III Certificate or C.I. Achievement of skills used by teachers as they gather student data, confer with students, and help students plan for employment or further education.
- EVT 5564** **ED 2-4 (2-4,0)**  
**Student Vocational Organizations:** PR: Rank III Certificate or C.I. Competencies needed by vocational teachers as they establish and supervise student vocational organizations in secondary and post-secondary schools.
- EVT 5664** **ED 2-6 (2-6,0) S**  
**School/Community Relations for Vocational Education:** PR: Rank III Certificate or C.I. Achievement of proficiency in the use of media techniques to promote the vocational program. Development and maintenance of productive relationships between school and community groups.
- EVT 5685** **ED 2-6 (2-6,0) F**  
**Competency-Based Vocational Education:** PR: Rank III Certificate or C.I. Achievement of teacher competencies unique to the installation and management of competency-based vocational training programs in secondary and post-secondary schools and community colleges.
- EVT 5817** **ED 2-6 (2-6,0) W**  
**Management of Vocational Programs:** PR: Rank III Certificate or C.I. Study and achievement of selected competencies needed by vocational teachers, supervisors, and local administrators in the management of vocational education programs in the schools.
- EVT 6065** **ED 4 (4,0)**  
**Philosophical Foundations of Vocational Education:** An in-depth study of principles and philosophy for vocational education.
- EVT 6264** **ED 4 (4,0)**  
**Administration in Vocational Education:** PR: Rank III Certificate or C.I. Administrative responsibilities in a local program of Vocational Education which includes two or more fields of occupational education.
- EVT 6265** **ED 4 (4,0)**  
**Supervision in Vocational Education:** PR: Rank III Certificate or C.I. Supervisory techniques for planning and implementing improvement of staff, curriculum and personal relations in Vocational Education.
- EXP 3204C** **SS 5 (3,2)**  
**Perception:** PR: PSY 2013, PSY 2014. Consideration of physical and psychological variables in perceptual phenomena. Lec.-Lab.
- EXP 3304** **SS 4 (4,0)**  
**Motivation:** PR: PSY 2013 and PSY 2014. Psychological and physiological aspects of human motivation.
- EXP 3404** **SS 5 (3,2) F,W,S,Su**  
**Basic Learning Processes:** PR: PSY 2013 and PSY 2014. Theories and research findings from

basic laboratory investigation of learning phenomena. Lec.-Lab.

**EXP 3513C**

**SS 5 (3,2)**

**Complex Human Learning:** PR: PSY 2013 and PSY 2014. Selected topics from theories and research on complex human learning and problem solving. Lec.-Lab.

**EXP 6306**

**SS 4 (4,0) F**

**Motivation, Training, and Performance Appraisal:** PR: Graduate admission and C.I. Survey of the area of industrial motivation, training, and performance appraisal.

**FIL 3400**

**SS 4 (4,0)**

**History of the Motion Picture:** Development of the film industry, its social and economic impact. Same as THE 3251.

**FIN 3100**

**BA 3 (3,0) F,W,S**

**Personal Investments:** PR: Junior standing. Fundamentals of managing and investing one's money. Course satisfies Advance Environmental Studies requirement. Not usable for BSBA Degree credit.

**FIN 3233**

**BA 4 (4,0) F,W,S,Su**

**Money and Banking:** PR: Junior standing, ACC 2324, ECO 2023 and 2013. Nature of money, commercial banking system, monetary theory, policy, relation to the level of economic activity, and activities of the Federal Reserve and U.S. Treasury.

**FIN 3303**

**BA 4 (4,0) F,W,S,Su**

**Financial Institutions:** PR: FIN 3403. A study of how financial intermediaries obtain and use their funds and the role they fill in the economy.

**FIN 3324**

**BA 4 (4,0) W**

**Commercial Bank Administration:** PR: FIN 3403, FIN 3303. Administrative areas of a commercial bank including operations, management of bank assets and liabilities, lending policies, trust & fiduciary activities, and regulatory aspects.

**FIN 3403**

**BA 5 (5,0) F,W,S,Su**

**Finance:** PR: Junior standing, ACC 2324, ECO 2023 and ECO 2013. Fundamentals of obtaining and administering funds to meet short and long-term capital needs.

**FIN 3453**

**BA 4 (4,0) F,W,S**

**Financial Models:** PR: FIN 3403, ECO 3411. Mathematical models applied specifically to financial problems, including those models suitable for representation and manipulation of computers.

**FIN 3502**

**BA 4 (4,0)**

**Investments:** PR: FIN 3403 or C.I. Principles of determining investment policy for individual institutional portfolios.

**FIN 4414**

**BA 4 (4,0) F,S**

**Financial Management:** PR: FIN 3403. Case studies dealing with business financial management problems and current issues.

**FIN 4514**

**BA 4 (4,0)**

**Security Analysis:** PR: Fin 3403 and FIN 3502. The problems of selecting securities for various investment purposes.

**FIN 4524**

**BA 4 (4,0) W,Su**

**Portfolio Management:** PR: FIN 3403. The management of security and asset portfolios with emphasis on portfolio selection and management using basic techniques derived from portfolio theory.

**FIN 5405**

**BA 4 (4,0) F,S**

**Financial concepts:** PR: Acceptance into the graduate program, ACC 5004 and ECON 5055 or equivalents. Effects of financial decisions upon the firm, interrelationships of these effects and alternatives available to financial managers in meeting financing needs of the firm.

**FIN 6426**

**BA 3 (3,0)**

**Financial Management of Current Operations:** PR: Graduate standing and FIN 5405 or equivalent. Management of current assets and current liabilities. Special problems associated with expansion, contraction, merger and failure.

- FIN 6436** **BA 4 (3,0)**  
**Capital Management and Analysis:** PR: Graduate standing and FIN 5405 or equivalent. Financial planning, valuation, sources of long-term capital, concepts of cost of capital and capital budgeting.
- FIN 6506** **BA 3 (3,0)**  
**Analysis of Investment Opportunities:** PR: Graduate standing and FIN 5405 or equivalent. Techniques for evaluating securities, investment decision making, portfolio management.
- FLE 3063** **ED 3 (3,1)**  
**Foreign Language as Human Behavior:** PR: or CR: LIN 3010 or C.I. Nature of language, language learning and teaching basic skills. Weekly laboratory.
- FLE 3333** **ED 4 (3,2)**  
**Foreign Language Instructional Analysis:** PR: EDF 3255 and EDF 3603. Objectives for a school curriculum and of methods and materials for teaching foreign language.
- FLE 4380** **ED 3 (3,1)**  
**Oral Teaching of Foreign Languages:** PR: ESE 3940 or C.I. Audio-lingually-based demonstration class. Practice in linguistic methods. One hour laboratory required.
- FRE 1005** **HFA 1 (1,0)**  
**French Diction:** This course is especially designed for music and voice students with an emphasis on musical terms, French songs and opera libretti.
- FRE 1100** **HFA 4 (4,1) F**  
**Elementary French Language and Civilization:** Designed to initiate the student to the major language skills; listening, speaking, reading, and writing.
- FRE 1101** **HFA 4 (4,1) W**  
**Elementary French Language and Civilization:** PR: FRE 1100 or equivalent. Continuation of FRE 1100.
- FRE 1102** **HFA 4 (4,1) S**  
**Elementary French Language and Civilization:** PR: FRE 1101 or equivalent. Continuation of FRE 1101.
- FRE 2200** **HFA 4 (4,1) F**  
**Intermediate French Language and Civilization:** PR: FRE 1102 or equivalent. Development of language skills at the intermediate level, review of grammar, study of syntax, idiomatic expressions, study of French culture.
- FRE 2201** **HFA 4 (4,1) W**  
**Intermediate French Language and Civilization:** PR: FRE 2200 or equivalent. Continuation of FRE 2200.
- FRE 2202** **HFA 4 (4,1) S**  
**Intermediate French Language and Civilization:** PR: FRE 2201 or equivalent. Continuation of FRE 2201 with greater emphasis on French civilization from the Middle Ages to the present.
- FRE 3240** **HFA 4 (4,1) F**  
**French Conversation:** PR: FRE 2202 or equivalent. Development of skills in conversation and comprehension. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- FRE 3420** **HFA 4 (4,0)**  
**French Composition:** PR: FRE 2202 or equivalent. Development of skills in composition.
- FRE 4421** **HFA 4 (4,0)**  
**Advanced French Conversation:** PR: FRE 3240. Advanced conversation on directed topics from various disciplines: Literature, art, psychology, philosophy, music, business and the sciences.
- FRE 4422** **HFA 4 (4,0)**  
**Advanced French Compositions:** PR: FRE 3420. Readings and written imitations of modern literary styles in the form of themes, sketches, poems and original stories.
- FRE 4500** **HFA 4 (4,0) W**  
**French Civilization and Culture:** PR: FRE 3240 or FRE 3420. A survey analyzing development of key elements of French life: its historical, artistic, intellectual, scientific, spiritual contributions to



the world via readings, lectures, films, other media. Conducted in French.

- FRE 4780** **HFA 4 (4,0)**  
**French Phonetics and Diction:** PR: FRE 3420 or equivalent. French phonology with emphasis on phonic groupings.
- FRW 3100** **HFA 4 (4,0) F**  
**Survey of French Literature I:** PR: FRE 2202 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance.
- FRW 3101** **HFA 4 (4,0) W**  
**Survey of French Literature II:** PR: FRE 2202 or equivalent. Main literary current and works of the seventeenth and eighteenth centuries.
- FRW 3102** **HFA 4 (4,0)**  
**Survey of French Literature III:** PR: FRE 2202 or equivalent. Main literary currents and works of the nineteenth and twentieth centuries.
- FRW 3370** **HFA 4 (4,0)**  
**Short Stories of 18th, 19th and 20th Centuries:** PR: FRE 2202 or equivalent. Selected readings designed to increase reading speed and develop analytical abilities. Authors include: Voltaire, Maupassant, Flaubert, Camus and others.
- FRW 4310** **HFA 4 (4,0)**  
**Seventeenth Century French Theatre:** PR: FRW 3101. Corneille, Racine, and Moliere. A study of the lives and principal works of the authors.
- FRW 4440** **HFA 4 (4,0)**  
**French Literature of the Eighteenth Century:** PR: FRW 3101. The philosophical movement; Montesquieu, Vauvenargues, Voltaire, Diderot, Buffon.
- FRW 4460** **HFA 4 (4,0) S**  
**French Romanticism:** PR: FRW 3101. Great poets and dramatists of the Romantic Movement: Hugo, Lamartine, Vigny, Musset and others.
- FRW 4462** **HFA 4 (4,0)**  
**Nineteenth Century French Literature:** PR: FRW 3102. Realism and naturalism.
- FRW 4481** **HFA 4 (4,0)**  
**Twentieth Century French Literature:** PR: FRW 3102. Contemporary French novel.
- FRW 4820** **HFA 4 (4,0)**  
**Stylistics:** PR: FRE 3240 or equivalent. An intense study of textual criticism. An examination of the relationship between language and literature; explications and linguistic analysis of literary texts.
- GEB 3004** **BA 3 (3,0) F,W,S,Su**  
**Management:** PR: Junior standing. The interdisciplinary application of the managerial functions of planning, organizing, staffing, directing, and controlling. For Non-Business Majors ONLY.
- GEO 1200C** **EN 4 (4,0)**  
**Physical Geography:** Basic physical elements of geography including climate, landforms, soils, natural vegetation, minerals and their integrated patterns of world distribution.
- GEO 3370** **EN 3 (3,0)**  
**Resources Geography:** Analysis of basic principles and problems associated with development, use, conservation, and management of natural resources with special emphasis on the United States.
- GEO 3470** **SS 4 (4,0)**  
**World Political Geography:** Analysis of types and distributions of political systems, review of factors which affect relative power of diverse politics, areas of conflict and arbitration.
- GEO 3602** **SS 4 (4,0)**  
**Urban Geography:** The city as a geographical phenomenon created by human effort, its historical development; patterns of land use as related to economic, sociological and political influences.
- GER 1005** **HFA 1 (0,1)**  
**German Diction:** This course is especially designed for music and voice students with an

emphasis on musical terms. German songs and opera libretti.

**GER 1100** **HFA 4 (4,1) F**  
**Elementary German Language and Civilization:** Designed to initiate the student to the major language skills: listening, speaking, reading, and writing.

**GER 1101** **HFA 4 (4,1) W**  
**Elementary German Language and Civilization:** PR: GER 1100 or equivalent. Continuation of GER 1100.

**GER 1102** **HFA 4 (4,1) S**  
**Elementary German Language and Civilization:** PR: GER 1101 or equivalent. Continuation of GER 1101.

**GER 2200** **HFA 4 (4,1) F**  
**Intermediate German Language and Civilization:** PR: GER 1102 or equivalent. Designed to continue development of language skills at the intermediate level, together with a review of grammar.

**GER 2201** **HFA 4 (4,1) W**  
**Intermediate German Language and Civilization:** PR: GER 2200 or equivalent. Continuation of GER 2200.

**GER 2202** **HFA 4 (4,1) S**  
**Intermediate German Language and Civilization:** PR: GER 2201 or equivalent. Continuation of GER 2201 with greater emphasis on German civilization from the Middle Ages to the present.

**GER 3240** **HFA 4 (4,0)**  
**German Conversation:** PR: GER 2202 or equivalent. Development of skills in conversation and comprehension through practice.

**GER 3420** **HFA 4 (4,0)**  
**German Composition:** PR: GER 2202 or equivalent. Development of skills in composition.

**GEW 3100** **HFA 4 (4,0)**  
**Survey of German Literature I:** PR: GER 2202 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance and Baroque.

**GEW 3101** **HFA 4 (4,0)**  
**Survey of German Literature II:** PR: GER 2202 or equivalent. Main literary currents and works of the 17th and 18th centuries.

**GEW 3102** **HFA 4 (4,0)**  
**Survey of German Literature III:** PR: GER 2202 or equivalent. Main literary currents and works of the 19th and 20th centuries.

**GEW 3370** **HFA 4 (4,0)**  
**Short Story:** PR: GER 2202 or equivalent. German short prose works of the 19th and 20th centuries.

**GEY 3610** **SS 4 (4,0)**  
**Psychology of Aging:** PR: PSY 2014. An examination of basic psychological processes related to the aging process with emphasis on the applied implications of changes in perceptual-motor, social-emotional and cognitive-intellectual functioning.

**GLY 1000** **NS 4 (4,0) F,W**  
**Geology and its Applications:** Geologic applications and hazards including: gemstones, geothermal energy, fossil fuels, groundwater, sinkhole, beach erosion, landslides, earthquakes, "tidal" waves, volcanism. Appropriate for Environmental Studies.

**GLY 1100** **NS 4 (4,0) S**  
**Historical Geology:** Lunar and planetary histories, evolution of earth's crust including drifting continents and mountain building, evolution of life as reconstructed from fossils. Appropriate for Environmental Studies.

**GLY 4005** **NS 3 (2,2)**  
**Rocks and Minerals:** Their identification and significance as indicators of geologic processes. Meets advanced ESP requirements: designed for non-majors.

- GLY 4006** **NS 4 (4,0) S**  
**Geology of Our National Parks and Monuments:** Unique geologic features preserved in our national park system and the processes that gave rise to these features. Meets advanced ESP requirements; designed for non-majors.
- HIS 4150** **HFA 4 (4,0)**  
**History and Historians:** PR: C.I. A study of European and/or American historiography. May be repeated once for credit.
- HIS 4970** **HFA 4**  
**Senior Thesis:** Original research paper available to advanced history majors, topics to be selected in consultation with a directing professor.
- HLP 4460** **ED 3 (2,1) F,W,S,Su**  
**Teaching Elementary School Health and Physical Education:** PR: Admission to Phase II or C.I. Observation, organization, practice, and conduct of health and physical education activities in the elementary school.
- HSC 3081** **HRP 3 (3,0)**  
**Medical Self Assessment:** Development of clinical skills and understanding of one's health to encourage active participation of the individual in his own health care.
- HSC 3152** **HRP 3 (3,0) W**  
**Health Law:** Principles of law as applied to the health field with special reference to health practices.
- HSC 3328** **HRP 3 (3,0)**  
**U.S. Health Care Systems:** Organization and management of health care delivery systems in the United States; ethical, legal, community and professional relationships, needs, resources, programs, trends in health care.
- HSC 3501** **HRP 3 (3,0)**  
**Interpretation of Clinical Tests:** PR: BCN 1023 and PCB 3703 or C.I. Introduction to laboratory tests emphasizing those relating to gas transport and enzymology.
- HSC 3531** **HRP 5 (5,0) F**  
**Medical Terminology:** A study of the language of medicine and allied health specialties, including word construction, definitions and application of terms.
- HSC 4101** **HRP 4 (4,0) F**  
**Organization and Management for Health Agencies:** PR: Health Related Professions major or C.I. Analysis of health agency organizations and management procedures.
- HSC 4302** **HRP 4 (4,0)**  
**Community and Public Health Services:** History and philosophy of public health, interphase of governmental, voluntary, and private health agencies; current community health problems, issues, and needs; social and economic factors.
- HSC 4393** **HRP 3 (3,0)**  
**History and Future of Health Care:** Health care institutions; purposes of health agencies, organizations and allied health professionals; new trends in health care delivery. Meets Advanced ESP requirements; designed for non-majors.
- HSC 4411** **HRP 4 (4,0) W**  
**Epidemiology:** PR: STA 2014 or C.I. General concepts and scope; distribution of selected diseases; factors influencing health and disease in a population.
- HSC 4511** **HRP 3 (3,0)**  
**Fundamentals of Medicine I:** PR: ZOO 3733 or PCB 3703; or C.I. A study of the pathophysiology and treatment of specific disease entities.
- HSC 4512** **HRP 5 (5,0)**  
**Fundamentals of Medicine II:** PR: HSC 4511 or C.I. A continuation of HSC 4511.
- HUM 2200** **HFA 4 (4,0) F,W,S,Su**  
**Landmarks in Western Humanities:** Selected examples of man's creative achievements in literature, philosophy, art, music; inter-related to enlarge understanding of the nature of man and appreciation of human values.

- HUM 3431** **HFA 4 (4,0)**  
**The Classical World: Greece:** History and culture of Greece from the Minoan-Mycenaean to the Hellenistic age, with emphasis on contributions in art, literature and philosophy. (Same as EUH 3400).
- HUM 3432** **HFA 4 (4,0)**  
**The Classical World: Rome:** History and culture of Rome from the Etruscan Period to the dissolution of the empire, with emphasis on contributions in architecture, law and literature. (Same as EUH 3411).
- HUM 4301** **HFA 4 (4,0) W**  
**The Classical Ideal in the Arts:** The search for order and form reflected in the arts of Greece and later cultures. Concerns reason, structure, objectivity, harmony. Open to all upperclassmen.
- HUM 4302** **HFA 4 (4,0) F**  
**The Romantic Ideal in the Arts:** The Romantic quest for identity with nature and the sublime in the arts of various times. Concerns feeling, imagination, subjectivity, creativity. Open to all upperclassmen.
- HUM 4303** **HFA 4 (4,0) S**  
**The Spiritual Ideal in the Arts:** The search for the meaning and experience of the sublime reflected in the arts. Spiritual impulses contrasted to pathos and ethos. Open to all upperclassmen.
- HUM 4906** **HFA 6-15**  
**Supervised Special Training:** Supervised special work experience. Open to students combining a major in Humanities and Fine Arts with Business Administration. Must be arranged in advance of registration.
- HUM 4935** **HFA 3 (3,0)**  
**Senior Seminar: Humanities and Arts in Human Affairs:** Forum on the art and thought of the contemporary world, intended for senior students. Offered as Advanced Environmental Studies seminar.
- HUN 3** **HRP 4 (4,0) F**  
**Human Nutrition:** Essentials of nutrition related to the life cycle. The physiological, psycho-social, and cultural aspects of nutrition and the inter-relationship with disease is emphasized.
- INP 3004** **SS 4 (4,0)**  
**Industrial Psychology:** PR: PSY 2013, PSY 2013, PSY 2014, and STA 2014. Psychological principles of employee selection, training, morale.
- INP 3102** **SS 4 (4,0)**  
**Applied Psychology:** Applications of principles of psychology to personal adjustment, industry, and education.
- INP 6215** **SS 4 (4,0) S**  
**Assessment Centers:** Graduate Admission. Survey of assessment center methodology and application.
- INP 6317** **SS 4 (4,0) F**  
**Organizational Psychology and Applied Problems:** PR: Graduate admission and C.I. Review of theories research and application of psychological principles to applied industrial/organizational settings.
- INP 6946** **SS 4 (0,4)**  
**Industrial Psychology Practicum I:** PR: Graduate admission and C.I. Supervised placement in school setting.
- INP 6947** **SS 4 (0,4)**  
**Industrial Psychology Practicum II:** PR: Graduate admission and C.I. Supervised research in industry.
- INR 3002** **SS 4 (4,0) F,S**  
**International Relations:** Analysis of the fundamental principles and factors affecting interstate relations; the foreign policy decision-making processes of states.
- INR 3024** **SS 4 (4,0) F**  
**Nationalism: A Systematic Analysis:** Theories of modern nationalism as a world-wide political

phenomenon including problems of nationalistic wars and rebellions, multi-national states, trans-national organizations.

**INR 3081**

**SS 4 (4,0) W,Su**

**Contemporary International Politics:** Application of the theory and fundamentals of international politics to contemporary world affairs with attention to the impact of current developments upon the international system.

**INR 4102**

**SS 4 (4,0) F**

**American Foreign Policy:** Development of American foreign policy with emphasis on the role and policies of the United States in the contemporary world.

**INR 4224**

**SS 4 (4,0) F**

**Contemporary International Politics of Asia:** Examination of the role in foreign policies of major and secondary powers as they relate to trends in Asia.

**INR 4244**

**SS 4 (4,0)**

**Inter-American Politics and Organizations:** Examination of relations among American Republics. Special attention given the roles of the United States, the Organization of American States, and trade and aid arrangements.

**INR 4274**

**SS 4 (4,0) F**

**International Politics of the Middle East:** The external politics of the Middle East from a regional-global perspective with particular attention to the region's impact upon the relations of major powers.

**INR 4334**

**SS 4 (4,0) W**

**American Defense Policy:** Study of policy evolution since World War II including consideration of the social and political costs involved and means of control.

**INR 4335**

**SS 4 (4,0) W**

**Coercion in International Politics:** An examination of the role of coercive techniques among states in a nuclear age including theories of nuclear strategy and deterrence.

**INR 4401**

**SS 4 (4,0) F**

**International Law I:** An introduction to the nature, evolution and sources of international law and its role in interstate relations.

**INR 4402**

**SS 4 (4,0)**

**International Law II:** PR: INR 4401 or C.I. Examination of various subareas of International Law including maritime law, laws of the sea and seabed, air law, and the legal status of outer space.

**INR 4502**

**SS 4 (4,0) S**

**International Organizations:** The nature and growth of international agencies of cooperation. Attention focused on the problems and development of functional, regional, and universal organizations.

**ITA 1005**

**HFA 1 (1,0)**

**Italian Diction:** This course is especially designed for music and voice students with an emphasis on musical terms, Italian songs and opera libretti.

**ITA 1100**

**HFA 4 (4,1) F**

**Elementary Italian Language and Civilization:** Designed to initiate the student to the major language skills: listening, speaking, reading, and writing, in addition to an introduction to Italian culture.

**ITA 1101**

**HFA 4 (4,1) W**

**Elementary Italian Language and Civilization:** PR: ITA 1100 or equivalent. Continuation of ITA 1100.

**ITA 1102**

**HFA 4 (4,1) S**

**Elementary Italian Language and Civilization:** PR: ITA 1101 or equivalent. Continuation of ITA 1101.

**ITA 2200**

**HFA 4 (4,0) F**

**Intermediate Italian Language and Civilization:** Designed to continue development of language skills at intermediate level, plus a review of grammar, study of syntax, idiomatic expression, extensive readings and further study of Italian culture.

- ITA 2201** **HFA 4 (4,0) W**  
**Intermediate Italian Language and Civilization:** Designed to continue development of language skills at intermediate level, plus a review of grammar and study of syntax.
- ITA 2202** **HFA 4 (4,0) S**  
**Intermediate Italian Language and Civilization:** Designed to continue development of language skills at intermediate level, plus a review of grammar and study of syntax.
- JOU 3003** **SS 4 (4,0) W**  
**History of American Journalism:** Development of newspapers and magazines, the press associations and the growth of the electronic media.
- JOU 3100** **SS 4 (1,3) F,W**  
**Basic Reporting:** Development of skills in gathering and writing for the mass media. Student must have minimum ability to type.
- JOU 3101** **SS 4 (1,3) W,S**  
**News Reporting II:** PR: A minimum grade of C in JOU 3100. Further development of interviewing, newsgathering and writing skills under deadline pressure.
- JOU 3200** **SS 4 (1,3) F,W,S**  
**Copy Editing:** PR: Minimum grade of C in JOU 3100; ability to type 30 wpm. Fundamentals of copy editing for printed media, including selection, processing and display of news.
- JOU 3202** **SS 4 (4,0) S**  
**Advanced Editing:** PR: A minimum grade of C in JOU 3200 or equivalent: Planning content and format of newspaper and other periodicals; layout; dummyming, departmental editing, copy desk management.
- JOU 3309** **SS 4 (4,0)**  
**Film Criticism:** PR: A minimum grade of C in JOU 3100. The practice of writing movie reviews: students will review at least one film a week during the course.
- JOU 3600** **SS 4 (4,0)**  
**Photojournalism I:** Learning the use of the still camera, darkroom procedures, review at least one film a week during the course. Communication majors only.
- JOU 3601** **SS 4 (4,0)**  
**Photojournalism II:** PR: JOU 3600 or equivalent. Advanced photojournalism, including photo essays and special effects photography in black and white.
- JOU 4104** **SS 4 (4,0)**  
**Public Affairs Reporting:** PR: A minimum grade of C in JOU 3100 and JOU 3101. Study of community news sources, reporting courts, city and county government.
- JOU 4300** **SS 4 (4,0) S**  
**Feature Writing:** PR: A minimum grade of C in JOU 3100. Writing of feature articles for newspapers and magazines.
- JOU 4302** **SS 4 (4,0)**  
**Editorial and Column Writing:** PR: A minimum grade of C in JOU 3100. Building the editorial page, backgrounding and interpreting the news.
- JOU 4305** **SS 4 (4,0)**  
**Technical and Scientific Writing:** PR: Minimum grade of C in JOU 3100. The practice in the gathering of materials for technical and scientific articles; digesting of technical information into more readable forms.
- JOU 4306** **SS 4 (4,0)**  
**Critical Writing:** PR: A minimum grade of C in JOU 3100. Practice in writing reviews of plays, concerts and books.
- JOU 4602** **SS 4 (1,6) W**  
**Color Photography for the Mass Media:** Taking pictures in color; developing and printing via the Cibachrome process; PR: JOU 3600.
- JOU 4802** **SS 4 (4,0)**  
**The Newspaper in the Classroom:** Study of the use of the newspaper as a teaching aid in the classroom. Designed for persons currently teaching or majoring in education.

- JOU 5310** **SC 4 (4,0)**  
**Freelance Writing:** PR: Evidence of satisfactory writing skills. A study of the techniques and procedures of freelance writing, including the preparation of several manuscripts.
- LAE 3335** **ED 4 (3,2)**  
**English Instructional Analysis:** PR: EDF 3255 and EDF 3603. Course objectives for a school curriculum and methods and materials which have special application for teaching English.
- LAE 3414** **ED 4 (4,0) F,W,S,Su**  
**Literature for Children:** PR: Admission to Phase II or C.I. General survey of books and materials; criteria for analysis and evaluation; types of books available considered in terms of interests, needs, and abilities of children.
- LAE 4314** **ED 4 (4,0) F,W,S,Su**  
**Language Arts in the Elementary School:** PR: Admission to Phase II or C.I. Content, principles, materials and techniques involved in teaching speaking, listening, writing, and spelling in the elementary school; organizing for instruction.
- LAE 4342** **ED 3 (3,0)**  
**Teaching Language and Composition:** PR: EDF 3255 and EDF 3603. Techniques and methods in teaching of dialects, semantics, the various grammars. A survey of composition and rhetorical methods of selected authors.
- LAE 4464** **ED 3 (3,0)**  
**Literature for Adolescents:** PR: Senior standing or C.I. Selecting and evaluating books for adolescents with emphasis on the use of literature in the development of young people.
- LAE 6375** **HFA 4 (4,0)**  
**Practicum: The Teaching of Composition:** Close work with an experienced instructor in teaching an undergraduate composition course, combined with regular group meetings for discussion of problems of teaching composition.
- LAE 6389** **HFA 4 (4,0)**  
**Practicum: The Teaching of Literature:** Close work with an experienced instructor in teaching an undergraduate literature course, combined with regular group meetings for discussion of problems of teaching literature.
- LAE 6616** **ED 4 (4,0) F,S,Su**  
**Trends in Language Arts Education:** PR: Rank III Certificate or C.I. Historical development and trends, English usage systems, materials, instructional strategies.
- LAE 6637** **ED 3 (3,0)**  
**English Programs in the Secondary School:** PR: Rank III Certificate or C.I. Concepts, problems, and advanced topics.
- LAE 6714** **ED 4 (4,0)**  
**Investigation in Children's Literature:** PR: Rank III Certificate or C.I. Learning through the utilization of children's literature; literature analysis and evaluation; storytelling skill development; visual and reference materials.
- LAH 3130** **HFA 4 (4,0) F**  
**Latin American History: The Colonial Period:** A Survey course in Latin American History to the beginning of the Wars of Independence in 1810.
- LAH 3201** **HFA 4 (4,0) F**  
**Latin American History: The 19th Century:** Continuation of LAH 3130.
- LAH 3300** **HFA 4 (4,0) W**  
**Latin American History: The 20th Century:** Continuation of LAH 3201.
- LAT 1100** **HFA 4 (4,1) F**  
**Elementary Latin Language and Civilization:** Designed to develop Latin language skills at the elementary level: listening, speaking, reading, and writing, in addition to an introduction to Roman Culture.
- LAT 1101** **HFA 4 (4,1) W**  
**Elementary Latin Language and Civilization:** PR: LAT 1100 or equivalent—Continuation of LATIN 1100.

- LAT 1102** **HFA 4 (4,1) S**  
**Elementary Latin Language and Civilization:** PR: LAT 1101 or equivalent—Continuation of LATIN 1101.
- LEA 3001** **SS 4 (4,0)**  
**Law and the Legal System:** A survey of legal systems; selected areas of substantive law; ethical considerations; terminology; and role and scope of the legal assistant.
- LEA 3013** **SS 4**  
**Legal Investigation:** A study of how legal questions are researched to obtain the applicable law; and of information collection and investigation procedures.
- LEA 3014** **SS 4 (4,0)**  
**Legal Composition:** C.I. or P.R. LEA 3013. Practicum in preparation of briefs, memoranda and legal documents, including review of accepted practice and format.
- LEA 3101** **SS 4**  
**Litigation and Trial Practice:** A study of the more common types of law suits and procedures involved in the preparation, litigation and appeal of cases.
- LEA 3151** **SS 4 (4,0) W, Su**  
**Compensation for Injuries:** Study of the law governing liability for civil injuries, both personal and property.
- LEA 3201** **SS 4**  
**Property Law:** A study of legal practices, restraints, and privileges governing rights to real property.
- LEA 3401** **SS 4**  
**Law Office Administration:** A study of the organization, control, and operation of a law office with emphasis placed on the role of the legal administrator.
- LEA 3601** **SS (4)**  
**Criminal Law and the Paraprofessional:** A study of the role of the legal assistant in criminal cases; the procedures involved in preparing for trial; trial, and appeals.
- LEA 3801** **SS 4**  
**Administrative Law:** Study of the law governing the structure and processes of public service agencies and government departments and bureaus.
- LEA 4106** **SS 4 (4,0)**  
**Evidence:** This course will examine methods of proof of factual issues in courts of law.
- LEA 4202** **SS 4 (4,0)**  
**Real Estate Law:** PR: C.I. or LEA 3201. A study of the law of real property; the more common types of real estate transactions and conveyances; and closing procedures and title problems.
- LEA 4204** **SS 4 (4,0)**  
**Land Use Law I:** PR: C.I. or LEA 3201. Study of the law governing land use including planning, zoning, subdivision and building regulations.
- LEA 4205** **SS 4 (4,0)**  
**Land Use Law II:** C.I. or PR: LEA 4204. Examination of recent statutory changes and judicial interpretations of land use law, especially vis-a-vis planning and environmental protection.
- LEA 4211** **SS 4 (4,0)**  
**Estates and Trusts:** PR: C.I. or LEA 3201. A study of the common forms of wills and trusts and the applicable legal principles; of administration of estates; and of the probate court.
- LEA 4315** **SS 4 (4,0)**  
**Law and Procedure-Bureaucracy:** The study of public and quasi-public bureaucracies and of the functions and structure of the component units, particularly those units responsible for agency conformity with legal obligations and procedures.
- LEA 4501** **SS 4**  
**Domestic Relations Law:** A study of the law of domestic relations, to include divorce, child support and adoptions, and an examination of the role of the legal assistant.



- LEA 4813** **SS 4 (4,0)**  
**Labor Law in the Public Sector:** PR: None. A study of current trends and developments in the employment relation in the public sector, especially employee organizations and negotiation and their legal ramifications.
- LEA 5008** **SS 4 (1,3)**  
**Legal Institutions:** PR: C.I. Overview of the American legal system including the court system, major areas of substantive law and principles of procedure.
- LEA 5825** **SS 4 (1,3)**  
**Consumer Rights and the Law:** PR: C.I. The development of the modern law of consumer rights and remedies available to today's consumer.
- LEI 3433C** **ED 3 (2,1) F,W,S,Su**  
**School and Community Recreation:** PR: Admission to Phase II or C.I. Knowledge and skills of after school activity and summer recreational programs.
- LEI 6443** **ED 3 (3,0)**  
**School Recreation:** PR: Rank III Certificate or C.I. A study of recreational programs related to the public schools.
- LIN 2200** **SS 5 (4,3) W,Su**  
**English Phonetics and American Dialects:** Physiological description and visual notation of speech sounds; regional dialects of American English.
- LIN 2701** **HRP 4 (4,0) W**  
**Psychology of Oral Communication:** Psychological principles involved in the communicative process with application to individuals and groups.
- LIN 3010** **HFA 3 (3,0)**  
**Principles of Linguistics:** An overview of the modern linguist's approach to language. Analytic methods of phonology, morphology, syntax. Brief systematic survey of dialectology, language acquisition and semantics.
- LIN 3710** **HRP 4 (4,0) S**  
**Biolinguistics: The Communicative Dyad:** PR: SPA 3001. Species-inherited communicative bonding: Evolution of mother-infant dyads in mankind and animals. Foundations of biolinguistic and social imprinting with implications for communicative disorders.
- LIN 4020** **SS 4 (4,0) F**  
**Anthropological Linguistics:** PR: ANT 3000 or ANT 3410. Survey of anthropological linguistic field techniques in non-native cultures and application of linguistic theories to study of socio-cultural systems.
- LIN 4304** **HFA 3 (3,0) W**  
**Transformational Grammar:** PR: ENG 4550. Introduction to philosophical basis of transformational grammar. Students will develop grammar for modern English.
- LIN 4801** **HFA 3 (3,0) F**  
**Language and Meaning:** A linguistic study of the nature of language, meaning, and the ways in which man uses language in various social, cultural, institutional, and professional settings.
- LIN 5137** **HFA 4 (4,0)**  
**Linguistics:** Modern linguistic theories and studies focusing on language acquisition and development, contemporary American English, semantics and paralinguistics.
- LIN 5705** **HRP 4 (4,2) S**  
**Psycholinguistics:** Foundations of language in affective consciousness and the human nervous system. Pragmatic analysis of word meaning and its precise scientific measurement. Implications for Communicative Disorders.
- LIN 6932** **HFA 4 (4,0)**  
**Problems in Linguistics:** PR: LIN 5137. In-depth study of the application of linguistics to various aspects for teaching and communication.
- LIS 3003** **ED 3 (3,0) F,W,S**  
**Library Resources and Materials:** Use of the library, basic reference material, library services and research methods.

- LIS 3016** **ED 4 (4,0) F**  
**Introduction to Media Services:** Role and scope of media center. Major concepts, standards, trends, and media specialist functions emphasized.
- LIS 3412** **ED 4 (4,0)**  
**Media Center Operation:** PR: C.I. Major functions including acquisition, processing, circulation, file organization, reserve collections, maintenance, and inventory of materials and equipment.
- LIS 4310** **ED 4 (4,0)**  
**Production of Materials for Media Center:** PR: LIS 4428. Skill in producing teacher and student-made materials. Emphasized graphic, photographic and audio techniques for schools. Lab TBA.
- LIS 4422** **ED 4 (4,0)**  
**Principles of Media Center Administration:** Principles of administration applied to development of resources and services; including planning, leadership, decision making, personnel and financial management, and evaluation. Lab TBA.
- LIS 4428** **ED 4 (4,0)**  
**Utilization of Educational Media:** PR: C.I. Principles and practices of communication theory and its application in the classroom. Emphasis on utilization and operation of the various classroom media.
- LIS 4453** **ED 4 (4,0)**  
**School Media Services:** PR: C.I. Planning activities and programs to assist teachers and students in utilizing the Media Center. Includes skills development, R/L/V guidance, promotion and in-service techniques. Lab TBA.
- LIS 4510** **ED 4 (4,0)**  
**Development of Media Collections:** PR: C.I. Selection of policy and collection building of book and non-book media. Use of reviewing aids and media sources.
- LIS 4540** **ED 4 (4,0)**  
**Interaction Techniques in Media Services:** PR: C.I. Interpretation skills and communication processes applied to working with administrators, teachers, parents, and students in the media program.
- LIS 4601** **ED 4 (4,0)**  
**Reference Sources and Services:** PR: C.I. Development of skills in locating information and providing reference services.
- LIS 4731** **ED 4 (4,0)**  
**Organization of Media and Information:** PR: C.I. Principles of informational science and bibliography. Methods of organizing and non-print media, with instruction in cataloging and classification using standard bibliographic tools.
- LIS 5453** **ED 4 (4,0)**  
**Administrative Principles in Media Centers:** PR: LIS 3412. Planning, organizing, directing, supervising and budgeting in school media centers. Personnel, public relations, and evaluating services. Planning buildings including equipment and furniture.
- LIS 5508** **ED 4 (4,0)**  
**Instructional Technology and Curriculum:** PR: LIS 4428. Use and selection of instructional materials as they apply to the curriculum in elementary and secondary schools.
- LIS 5518** **ED 4 (4,0)**  
**Acquisition of Library Materials:** PR: Lis 3412 or C.I. Evaluation, selecting, and acquiring book and non-book materials. Selecting aids, reviewing media, publishers and jobbers. Procedures for budgeting, final records, gifts and exchanges.
- LIS 5545** **ED 4 (4,0)**  
**Non-Book Materials:** PR: LIS 4540, The function, evaluation, selection, preparation for use, cataloging and preservation of non-book materials.

- LIS 5661** **ED 4 (4,0)**  
**Government Publications:** PR: LIS 4601. United States government publications, state and international documents. Selection, acquisition and use as sources of information for school media centers.
- LIS 6509** **ED 4 (4,0)**  
**Seminar in Library Media:** PR: LIS 4422, 4540, and 4601. Problems in the development of collections for children and young people, reluctant readers and the non-reader. Controversial aspects of book selection and censorship.
- LIS 6608** **ED 4 (4,0)**  
**Reference Sources:** PR: LIS 4601. Selection, evaluation and use of advanced and specialized reference materials in various subject fields.
- LIT 2020** **HFA 3 (3,0) F,W,S**  
**Literary Analysis:** Analysis of fiction, drama, and verse in terms of major elements; plot conflict, characterization, viewpoint, rhetorical and poetic devices, figurative language, meter, rhyme, verse forms.
- LIT 3125** **HFA 4 (4,0) F,S**  
**Literature of Modern Man:** Reading and discussion of types and forms of modern literature. Satisfies the requirement (II) of the cultural and historical foundation in the Environmental Studies Program.
- LIT 3240** **HFA 4 (4,0) F**  
**World Literature I:** Poetry, prose, and drama selected from ancient Hebrew, Greek, and Oriental literature and from that of Renaissance Europe.
- LIT 3257** **HFA 4 (4,0) W**  
**World Literature II:** Readings from Moliere, Voltaire, Goethe, Pushkin, Balzac, Tolstoy, Ibsen, Mann, Kafka, Camus, and others.
- LIT 3411** **HFA 4 (4,0)**  
**Women in Literature:** An investigation of attitudes toward women in literature. Selections from Shakespeare, Eliot, Flaubert, Ibsen, Freud, Lawrence, Hemingway, Albee, Freiden, Millet, Greer, and Steinem.
- LIT 3443** **HFA 3 (3,0)**  
**Science Fiction:** An investigation of science fiction as a literary form, together with selected readings.
- LIT 4324** **HFA 3 (3,0)**  
**Ethnic Literature in America:** Contributions of linguistic and ethnic groups of non-English origin to the literature of the United States.
- LIT 6235** **HFA 4 (4,0)**  
**World Literature:** The study of the influence on British and American literature of selected foreign works read in translation.
- LIT 6535** **HFA 4 (4,0)**  
**Major Literary Authors:** Study of a single author or of two or three associated literary authors, with emphasis on biography, bibliography, and style.
- LIT 6544** **HFA 4 (4,0)**  
**Movements in Literature:** Study of a movement such as naturalism, romanticism, or classicism, or a pervasive idea such as the absurd.
- MAA 4226** **NS 3 (3,0)**  
**Introduction to Analysis I:** PR: MHF 2300 and MAC 3314. Limits, sequences and continuity; differentiation and integration; derivatives of integrals; infinite series and convergence; the Bolzano-Weierstrass theorem and the Heine-Borel theorem; extensions in Euclidean n-space.
- MAA 4227** **NS 3 (3,0)**  
**Introduction to Analysis II:** PR: MAA 4226. Continuation of MAA 4226.
- MAA 4228** **NS 3 (3,0)**  
**Introduction to Analysis III:** PR: MAA 4227. Continuation of MAA 4227.
- MAA 4402** **NS 3 (3,0)**  
**Complex Variables I:** PR: MAC 3314. Analytic and harmonic functions; mapping by complex func-

tions; Cauchy's theorem and its implications; the maximum modulus principle; series expansions; the residue theorem and its applications.

**MAA 4403** **NS 3 (3,0)**  
**Complex Variables II:** PR: MAA 4402. Analytic continuation; decomposition of meromorphic functions into partial fractions; Mittag-Leffler theorem; entire functions; Weierstrass's Factorization theorem; Riemann Mapping theorem.

**MAA 4604** **NS 3 (3,0)**  
**Lebesgue Theory:** PR: MAA 4228. Inner and outer measure; measurable sets and functions; the Lebesgue integral.

**MAA 5211** **NS 3 (3,0)**  
**Advanced Calculus I:** PR: MAC 3314 or C.I. Differential and integral calculus of functions of several variables; vector differential calculus. Emphasis on applications.

**MAA 5405** **NS 4 (4,0)**  
**Technique of Complex Variables:** PR: MAC 3314. Analytic functions; integration in the complex plane; Laurent series and residue calculus, inversion of Laplace transforms; conformal mappings; application in engineering and the physical sciences.

**MAA 6212** **NS 3 (3,0)**  
**Advanced Calculus II:** PR: MAA 5211. Continuation of MAA 5211. Two and three-dimensional theory of vector integral calculus with application; infinite series.

**MAC 1104** **NS 4 (4,0) F,W,S**  
**College Algebra:** PR: MAT 1033 or the equivalent. Functions and graphs; Polynomial, rational, exponential and logarithmic functions; Theory of equations; Linear systems; Complex numbers; Discrete algebra.

**MAC 1114** **NS 4 (4,0) F,W,S**  
**College Trigonometry:** PR: MAC 1104 or equivalent. The circle arc length, circular functions, identities, inverse functions, applications to simple harmonic motion and harmonic analysis, function of angles, complete development of triangle solving.

**MAC 1132** **NS 5 (5,0)**  
**College Algebra and Trigonometry:** PR: Two years of high school algebra or equivalent. Algebraic expressions, polynomials, graphs, systems of equations, exponents and logarithms; trigonometric functions, triangle trigonometry, laws of sines and cosines, special formulas and trigonometric identities.

**MAC 2154** **NS 3 (3,0) F.W.S**  
**Analytic Geometry:** CR: MAC 1132 or MAC 1143 or equivalent. Topics include coordinate systems; vectors; lines in the plane; lines and planes in space; conic sections; polar coordinates; transformation of coordinates.

**MAC 3233** **NS 4 (4,0)**  
**Concepts of Calculus:** PR: MAC 1104 or equivalent. Differential and integral calculus of exponential and polynomial functions; optimization of multivariate functions; mathematical models. Not open to students with credit in MAC 3311.

**MAC 3253** **NS 4 (4,0)**  
**Applied Calculus I:** PR: College algebra and trigonometry. Differential and integral calculus applied to problems in engineering technology fields. Not open to students with credit in MAC 3233 or MAC 3311.

**MAC 3254** **NS 4 (4,0)**  
**Applied Calculus II:** PR: MAC 3253. Continuation of MAC 3253.

**MAC 3311** **NS 4 (4,0) F,W,S,Su**  
**Calculus I:** PR: College Algebra and College Trigonometry, or equivalent. CR: MAC 2154. The differential and integral calculus of elementary functions of one variable with attention to a variety of geometric and physical applications.

**MAC 3312** **NS 4 (4,0) F,W,S,Su**  
**Calculus II:** PR: MAC 3311. Continuation of MAC 3311.

**MAC 3313** **NS 4 (4,0) F,W,S,Su**  
**Calculus III:** PR: MAC 3312. Continuation of MAC 3312.

- MAC 3314** **NS 4 (4,0) F,W,S,Su**  
**Intermediate Calculus:** PR: MAC 3313. Differential and integral calculus of functions of several variables with applications. Topics include vector differential calculus, partial derivatives; multiple integrals; line and surface integrals.
- MAE 1810** **NS 4 (4,0) F**  
**Elementary School Mathematics I:** PR: Two years of high school mathematics. Logic, sets, the system of whole numbers, numeration systems, the system of integers, the system of rational numbers. Open only to majors in elementary education.
- MAE 2811** **NS 4 (4,0) W**  
**Elementary School Mathematics II:** PR: MAE 1810. The system or real numbers, polynomials, linear equations and inequalities, systems of equations and inequalities, quadratic equations and inequalities, the complex numbers. Open only to majors in elementary education.
- MAE 3310** **ED 3 (2,1) F,W,S**  
**Teaching Mathematics in the Elementary School:** PR: Admission to Phase II or C.I. Consideration of selected concepts; organizing for instruction, techniques and activities; class and individual diagnosis; remedial procedures.
- MAE 3311** **ED 3 (2,1) F,W,S**  
**Mathematics Programs in the Elementary School:** PR: MAE 3310. Analysis of teaching arithmetic, geometry and measurement; philosophy and objectives; instructional materials; current research and new curricula.
- MAE 3330** **ED 4 (3,2)**  
**Mathematics Instructional Analysis:** PR: EDF 3255 and EDF 3603. Study of course objectives for the high school curriculum and survey of methods and materials which have special application for teaching mathematics.
- MAE 4636C** **ED 3 (3,0)**  
**Mathematics Laboratory Methods:** PR: EDF 3255 and EDF 3603. Mathematics topics with special applications in classroom laboratory situations.
- MAE 4839** **NS 3 (3,0)**  
**Sequences and Series:** PR: C.I. Convergence of infinite sequences and series; double series, infinite products. Intended for prospective teachers of mathematics.
- MAE 4871** **NS 3 (3,0)**  
**The Number System:** PR: C.I. An axiomatic development of the natural numbers followed by a constructive development of the real and complex numbers. Intended for prospective teachers of mathematics.
- MAE 5125** **ED 3 (3,0)**  
**Intermediate School Mathematics:** PR: Rank III Certificate of C.I. Diagnosis and remediation of learning difficulties in mathematics. Selected learning activity packages on mathematics topics for high school teachers.
- MAE 4395** **ED 3 (3,0)**  
**Teaching the Metric System:** PR: Rank III Certificate or C.I. Linear, area, volume, mass force, and temperature measures from the metric system will be studied in relation to teaching aids, methods, and content, (K-12).
- MAE 5637** **ED 3 (3,0)**  
**Laboratory Programs in Mathematics:** PR: Rank III Certificate or C.I. Design, organization and development of special materials and projects for mathematics independent study.
- MAE 6135** **ED 3 (3,0)**  
**Topics in Secondary School Mathematics:** PR: Rank III Certificate or C.I. Major concepts in modern secondary school programs and selected individualized learning activity packages on mathematics topics for secondary school mathematics teachers.
- MAE 6318** **ED 4 (4,0) W,Su**  
**Current Methods in Elementary School Mathematics:** PR: Rank III Certificate or C.I. Strategies of instruction of computation and concepts of number, geometry, and measurement, Instructional materials.
- MAE 6517** **ED 4 (4,0) F,S,Su**  
**Diagnosis/Remediation of Difficulties in Mathematics for the Classroom Teacher:** PR: Rank III

Certificate or C.I. Diagnosis and remediation of difficulties in mathematics.

**MAE 6518** **ED 4 (4,0) Su**  
**Diagnosis/Remediation of Difficulties in Mathematics for the Clinician:** PR: MAE 6517 or C.I. Advanced study; diagnosis and remediation of difficulties in mathematics.

**MAE 6549** **ED 2-8 (0,2-8) F,W,S,Su**  
**Practicum in Diagnosis and Remediation of Difficulties in Mathematics, K-12:** PR; or CR: MAE 6517, MAE 6518.

**MAE 6899** **ED 3 (3,0)**  
**Seminar in Mathematics Teaching:** PR: Rank III Certificate or C.I. A review of prominent research and the writings of selected authors in mathematics education.

**MAF 4501** **SS 4 (4,0) W,Su**  
**The Family:** PR: SOC 2000. The family viewed functionally as a distinct social and cultural complex in the contemporary United States. Topics include: mate selection, marriage, adjustment, parenthood, post marriage.

**MAN 3010** **BA 3 (3,0) F,W,S,Su**  
**Management and Organization Behavior:** PR: Junior Standing, ACC 2324 or ACC 3003, ECO 2023, ECO 2013. Fundamentals of management showing how the manager in any organization effectively performs the functions of planning, organizing, directing, and controlling.

**MAN 3151** **BA 3 (3,0) F,W,S**  
**Human Behavior and Interpersonal Relations:** PR: MAN 3010 or C.I. Human behavior and its effect upon the operation of formal organizations.

**MAN 3301** **BA 4 (4,0) F,W,S**  
**Personnel Management:** PR: MAN 3010. An investigation of personnel practices and interpersonal relationships involved in managing employees. Internal problems of labor control and the utilization of human resources are considered.

**MAN 3504** **BA 3 (3,0) F,W,S,Su**  
**Business Operations Management:** PR: Junior Standing, ECO 2023, ECO 2013, and ACC 2324. Introduction to the management of the operation of business systems including the creating, service distribution, and governmental functions.

**MAN 3705** **BA 3 (3,0)**  
**Business Concepts:** PR: Junior Standing. The relationship of business and society. Discussion sections are devoted to developing the skill of solving organization problems. Not usable for BSBA degree credit.

**MAN 4004** **BA 4 (4,0) F,W,S**  
**Planning and Control:** PR: MAN 3010. Emphasizes planning and controlling processes, including statement of organization objectives, development and implementation of an action plan, an evaluation of performance, and required follow-up activities.

**MAN 4150** **BA 4 (4,0)**  
**Human Relations in Management:** PR: MAN 3010. The individual, interpersonal and group relations and intergroup and organizational problems in business.

**MAN 4201** **BA 4 (4,0) F,W,S**  
**Organization Theory:** PR: MAN 3010. Elements in organizations and the processes by which they develop and influence behavior are considered.

**MAN 4310** **BA 4 (4,0)**  
**Personnel Problems:** PR: MAN 3301. Case studies in personnel problems directed toward the application of personnel management theory and concepts to organization problems.

**MAN 4401** **BA 4 (4,0) F,W,S**  
**Industrial Relations:** PR: MAN 3301 or C.I. The impact of trade unionism on industrial relations; current problems, conflicts and trends; the development of managerial approaches to achieve labor-management cooperation.

**MAN 4510** **BA 4 (4,0) F,W,S**  
**Production Management Problems:** PR: MAN 3010, MAN 3504 and STA 3023. Problems in the management of industrial enterprise. Management principles and mathematical analysis applied to manufacturing; product development and production; control; employee relations.

- MAN 4720** **BA 4 (4,0) F,W,S,Su**  
**Business Policies:** PR: Senior standing, completion of core. The student is expected to utilize the subject matter in the business core and his major in analyzing business problems.
- MAN 4722** **BA 4 (4,0) F,W,S**  
**Decision Systems Analysis:** PR: CAP 3001 or C.I., and MAN 3010. Decision systems as an instrument to assist in making competent business decisions. Design, installation, and operation of decision systems in a practical business environment.
- MAN 4724** **BA 4 (4,0)**  
**Managing Decision Systems:** PR: MAN 4722. An introduction to the managerial competencies required to assure effective and efficient operation of a decision system after its installation.
- MAN 4794** **BA 2 (2,0)**  
**Senior Seminar: Business in Human Affairs:** Business issues and problems as they relate to human affairs. Primarily intended for the senior student in the Advanced Environment Studies seminars. Business students not admitted.
- MAN 5051** **BA 4 (4,0) F,S**  
**Management and Production Concepts:** PR: Acceptance into the graduate program. Fundamentals of management and production underlying the solution of problems relating to organization and operation of business enterprises.
- MAN 6055** **BA 3 (3,0)**  
**Planning and Control Analysis:** PR: Graduate standing and MAN 5051 or equivalent. Emphasizes elements of the planning and control processes including objectives, action programs and control procedures. Discusses integration of the two processes.
- MAN 6075** **BA 3 (3,0)**  
**Evolution of Administrative Management:** PR: Graduate standing and MAN 5051 or equivalent. The historical development of management in modern society with emphasis in the management process as applied within the economic, social, political, and legal environment.
- MAN 6121** **BA 3 (3,0)**  
**Group Decisions and Analysis:** PR: Graduate standing and MAN 5051 or equivalent. Experience in company-wide management decision-making by groups using the management game technique. Analysis of the group decision-making process using video tapes.
- MAN 6206** **BA 3 (3,0)**  
**Analysis of Organizational Behavior:** PR: Graduate standing and MAN 5051 or equivalent. The analysis of human behavior in organizations in terms of the individual, small group, intergroup relationships, and the total organization.
- MAN 6721** **BA 3 (3,0) W,Su**  
**Business Policy and Responsibility:** PR: Graduate standing and all foundation courses or equivalent. Functions and responsibilities of management, motivation of the businessman and factors governing business decisions.
- MAN 6814** **BA 3 (3,0) F,S**  
**Operations Research Models for Business:** PR: Graduate standing and ECO 5413 or equivalent. Quantitative techniques useful for the solution of business problems. Mathematical model building to aid the decision-making process is stressed.
- MAN 6840** **BA 3 (3,0)**  
**Research and Development Management:** Graduate standing and MAN 5051 or equivalent. An examination of the function of Research and Development and the impact of technological innovation on our economic and social systems.
- MAN 6896** **BA 3 (3,0) F,S**  
**Systems Analysis for Business Problem Solving:** PR: Graduate standing and MAN 5051 or equivalent. A conceptual framework of systems approach for analyzing business problems.
- MAP 3302** **NS 4 (4,0) F,W,S,Su**  
**Differential Equations I:** PR: MAC 3313 or C.I. Methods of solutions for first order equations; Linear equations; Laplace transforms; Series solutions; Selected applications.
- MAP 3401** **EN 4 (4,0)**  
**Problem Analysis:** PR: MAC 1104 & MAC 1114 or equivalent. Applications of computational tech-

niques to selected problems in the practice of engineering technology. Problems relating to specific option areas.

**MAP 4303** **NS 4 (4,0)**  
**Differential Equations II:** PR: MAP 3302 or C.I. Systems of linear equations; Numerical methods; Non-linear equations; Sturm-Liouville techniques; Selected applications.

**MAP 4363** **NS 4 (4,0)**  
**Applied Boundary Value Problems I:** PR: MAP 3302 or C.I. The eigenvalue problem of Sturm-Liouville; Legendre polynomials and Bessel functions; the method of Green's functions; Fourier series; applications in engineering and the physical sciences.

**MAP 4364** **NS 4 (4,0) S**  
**Applied Boundary Value Problems II:** PF: Map 4363 or C.I. Separation of variables; applications involving the wave equation, heat equation and equation of Laplace.

**MAP 4411** **NS 4 (4,0) S odd years**  
**Laplace Transforms:** PR: MAP 3302 or C.I. Laplace and Z transforms; solutions of ordinary and partial differential equations; application to circuit analysis and difference equations.

**MAP 5405** **EN 3 (3,0) W**  
**Engineering Mathematical Analysis:** ECM 4114 or C.I. The application of mathematical methods to engineering problems including linear analysis and transformations and matrix manipulation.

**MAP 5426** **NS 4 (4,0)**  
**Special Functions:** PR: MAP 3302 or C.I. Series and integral representations, generating functions, recurrence relations and orthogonality properties of the special functions. Emphasis on Bessel, Legendre, hypergeometric functions, other special functions.

**MAP 6406** **NS 4 (4,0)**  
**Methods of Mathematical Analysis I:** PR: MAC 3314 or equivalent. Calculus of variations, Sturm-Liouville problems, special functions and Fourier series.

**MAP 6407** **NS 4 (4,0)**  
**Methods of Mathematical Analysis II:** PR: MAA 5405 and MPA 6406. The Rayleigh-Ritz method, principle of minimum potential energy, Hamilton's principle, partial differential equations, integral transform methods.

**MAP 6424** **NS 3 (3,0)**  
**Transform Methods:** PR: MAA 5405. Laplace, Fourier, Hankel and other integral transforms, inversion theorems; the Z transform; applications to physical problems.

**MAP 6445** **NS 3 (3,0)**  
**Approximation Techniques:** PR: MAA 4228 or MAA 6212. Normed linear spaces; Weierstrass approximation theorem; Tchebycheff approximation by polynomials; trigonometric approximation; orthogonal expansions and least squares approximations.

**MAR 3023** **BA 5 (5,0) F,W,S,Su**  
**Marketing:** PR: Junior standing, ECO 2023, ECO 2013 and ACC 2324 or 3003. Study of functions, institutions and basic problems in marketing of goods and services in our economy.

**MAR 3303** **BA 4 (4,0)**  
**Principles of Advertising:** PR: Junior standing, ACC 2324, ECO 2023 and ECO 2013. Analysis of field of advertising; techniques, media, organization, and role of research; economic and social aspects of advertising.

**MAR 3403** **BA 4 (4,0) F,W,S,Su**  
**Sales Management:** PR: MAR 3023. Emphasis on sales techniques; sales objectives and policies; organization; administration of sales force.

**MAR 3503** **BA 4 (4,0) F,W,S**  
**Consumer Market Behavior:** PR: MAR 3023. An analysis of consumer motivation, buying behavior, market adjustment and product innovation. Behavioral aspects of the marketing process from producer to ultimate user or consumer are considered.

**MAR 3603** **BA 4 (4,0)**  
**Marketing Models and Logistics:** PR: MAR 3023 and ECO 3411. Qualitative and quantitative



model building concepts applied to marketing problems with special emphasis on product planning, distribution, promotion strategy, and pricing problems.

**MAR 3613**

**BA 5 (5,0) F,W,S**

**Marketing Research:** PR: MAR 3023 ECO 3411. Study of research procedures and techniques for problem solving in marketing. Concepts are explored and the incorporation of information resources into the management function demonstrated.

**MAR 4203**

**BA 4 (4,0)**

**Channels of Distribution Management:** PR: MAR 3023. Marketing activities and relationships within distribution channels. Primary attention given to decision making and policy formulations for wholesalers, retailers and integrated marketing institutions.

**MAR 4263**

**BA 3 (3,3) W**

**International Business Operation:** PR: Senior standing or C.I. Major focus upon the problems of managing international business operations through cases emphasizing financial and marketing problems.

**MAR 4703**

**BA 4 (4,0)**

**Current Marketing Problems:** PR: Senior standing, marketing major, C.I., ACC 2324, ECO 2023 and ECO 2013. Cultural, social, political, economic, and competitive developments and their effect upon marketing activities.

**MAR 4713**

**BA 4 (4,0) F,W,S**

**Marketing Policies and Strategies:** PR: MAR 3613 and C.I. Marketing problems and policies explored with emphasis placed on the decision-making process.

**MAR 5055**

**BA 4 (4,0) F,S**

**Marketing Concepts:** PR: Acceptance into the graduate program. Study of functions, institutions and basic marketing of goods in the U.S. economy.

**MAR 6406**

**BA 3 (3,0)**

**Sales Management and Control:** PR: Graduate standing and MAR 5055 or equivalent. Emphasis is placed on the allocation and development of sales territories and the training, motivation, and supervision of a sales force.

**MAR 6606**

**BADM 3 (3,0) W,Su**

**Research Methods Graduate Standing (3):** Methods of primary research as used in business; major courses of business information, analysis, organization and writing of research reports.

**MAR 6706**

**BA 3 (3,0)**

**Current Marketing Problems:** PR: Graduate standing and MAR 5055 or equivalent. Analysis of marketing problems stemming from broad social, economic, and political developments. Topics treated cover broad classes of marketing institutions.

**MAR 6716**

**BA 3 (3,0)**

**Marketing Policy:** PR: Graduate standing and MAR 5505 or equivalent. Marketing policy formulation and decision-making with respect to planning, pricing, promotion and distribution.

**MAS 3103**

**NS 4 (4,0)**

**Linear Algebra I:** PR: MHF 2300. An analysis of finite dimensional linear spaces including bases, subspaces, dual spaces, quadratic forms, and applications.

**MAS 3104**

**NS 4 (4,0)**

**Linear Algebra II:** PR: MAS 3103. Continuation of MAS 3103.

**MAS 3113**

**NS 4 (4,0)**

**Matrices:** PR: MAC 3313. Elementary properties of matrices; special, real and complex matrices; determinants and inverses; rank and systems of equations; transformations; eigenvectors; diagonalization; quadratic forms.

**MAS 3203**

**NS 3 (3,0)**

**Introduction to Number Theory I:** PR: C.I. Divisibility, primes and composites; divisors; multiples; Euclid's algorithm; Diophantine equations; modulo arithmetic; simple continued fractions.

**MAS 3204**

**NS 3 (3,0)**

**Introduction to Number Theory II:** PR: MAS 3203. Continuation of MAS 3203.

- MAS 4153** **NS 4 (4,0) W**  
**Vector and Tensor Analysis:** PR: MAC 3314 or C.I. Vector calculus; the theorems of Green, Gauss and Stokes; introduction to tensors; applications in engineering and physical sciences.
- MAS 4301** **NS 4 (4,0)**  
**Algebraic Structures I:** PR: MHF 2300. An introduction to the properties of groups, rings, polynomial rings, integral domains and fields.
- MAS 4311** **NS 4 (4,0)**  
**Algebraic Structures II:** PR: MAS 4301. Continuation of MAS 4301.
- MAS 6158** **NS 3 (3,0)**  
**Tensor Analysis:** PR: MAS 4153 or MAA 6212 or equivalent. Contravariant and covariant tensors, metric tensors, geodesics, Christoffel symbols, covariant differentiation, curvatures, Ricci tensor, Riemann-Christoffel tensor, and applications of tensors.
- MAS 6325** **NS 4 (4,0) A**  
**Modern Applied Algebra:** PR: PR: MAC 3314 or equivalent. Modern algebra for computer utilization and design; binary relations, finite state machines, groups, binary group coding, rings and ideals, polynomial codes.
- MAT 1033** **NS 4 (4,0) F,W,S,Su**  
**Intermediate Algebra:** PR: Basic algebraic skills, Linear and quadratic equations, systems of equations, inequalities, exponents, radicals and logarithms.
- MCB 2013** **NS 4 (3,4) F,S**  
**General Microbiology:** PR: A college course in chemistry and 8 hours of biological science. Fundamentals of microbiology, microbial morphology, metabolism and laboratory techniques.
- MCB 2043 C** **NS 3 (1,4)**  
**Culture Media and Reagents:** PR: PR: MCB 2013C. Preparation of differential, selective and enrichment media; reagents used in microbiology; instrumentation used in culture media preparation.
- MCB 3030C** **NS 4 (3,6) W**  
**Biology of Microorganisms:** PR: MCB 2013C; CR: CHM 3210 or BCH 1023. Concepts and experimental methods in microbiology.
- MCB 3203C** **NS 4 (3,4) F,S**  
**Pathogenic Microbiology:** PR: MCB 3030C or C.I. Microorganisms producing disease in man and other animals; means of transmission; protection against disease.
- MCB 4114C** **NS 4 (3,4) W, odd years**  
**Determinative Microbiology:** PR: MCB 3030C. Microbial classification, rules of nomenclature, bacterial code and identification of species.
- MCB 4164C** **NS 4 (2,6) W, even years**  
**Diagnostic Microbiology:** PR: MCB 3203C. Techniques used in identifying bacteria which are pathogenic to man.
- MCB 4404C** **NS 4 (3,4) S**  
**Microbial Physiology:** PR: MCB 3030C and BCH 4054. Relationship between structure and function in microorganisms.
- MCB 4603C** **NS 4 (3,4) W, even years**  
**Microbial Ecology:** PR: PCB 3043 and 3030C. Roles of microbes in the environment.
- MCB 4814C** **NS 4 (3,3)**  
**Medical Mycology:** PR: MCB 3030C or C.I. Etiology, mycology and clinical aspects of fungal induced human diseases.
- MCB 5205** **NS 3 (3,0) S, even years**  
**Infectious Process:** PR: MCB 3030C or C.I. Discussion of current theories of the infectious process and the response of cells and tissue to infection.
- MCB 5505C** **NS 4 (3,4) W, odd years**  
**Virology:** MCB 3030C and BCH 4054. Nature of viruses and Rickettsiae, including their structure, propagation, isolation and identification. Special project is required.

- MCB 6417** **NS 4 (4,0) W, even years**  
**Microbial Metabolism:** PR: C.I. Relationship between microbial metabolism and principal cellular activities, emphasizing transport, respiration, differentiation, and synthesis.
- MET 3002** **EN 3 (3,0) Su**  
**Fundamentals of Meteorology and Climatology:** PR: MAT 1033 or C.I. Studies of the physical processes that determine the climate of a region. The methods of measurement and use of meteorological parameters.
- MET 5710** **EN 3 (3,0) F**  
**Meteorology for Engineers:** PR: MAC 3313. Studies of the atmospheric processes from physical thermodynamics and synoptic viewpoints.
- MGF 1224** **NS 4 (4,0) F,W,S**  
**Principles of Mathematics:** PR: Two years of high school mathematics. Selected topics in mathematics with primary emphasis on developing conceptual understanding and broadening insight into mathematics. Not intended for students in the Colleges of Business Administration, Engineering, or Natural Sciences.
- MHF 2300** **NS 4 (4,0)**  
**Logic and Proof in Mathematics:** PR: Four years of high school mathematics or equivalent. Basic mathematical logic, methods of proof in mathematics, application of proofs to elementary structures. Primarily for mathematical sciences majors.
- MHF 3104** **NS 4 (4,0)**  
**Boolean Algebra:** PR: MAC 3313 or C.I. Axiomatic development of Boolean algebra; the algebras of sets, logic and circuits as Boolean algebras.
- MHF 4404** **NS 3 (3,0)**  
**History of Mathematics:** PR: MAC 3312 or C.I. A chronological study of the evolution of mathematical thought from primitive counting through modern ideas of the twentieth century. Recommended for prospective teachers of mathematics.
- MIS 1031C** **SS 3**  
**Basic Military Science.** Organization of the Army, its branches, and ROTC, with emphasis on the UCF ROTC program and career opportunities in the active Army and reserve components. Significance of military courtesy, discipline, customs and traditions of the service. An analysis of the basic weapons and equipment in today's Army.
- MIS 1400C** **SS 3**  
**Fundamentals of Leadership Development.** Development of leadership abilities through a series of practical exercises using the small unit leader concept. Field training exercise will afford the individual student an opportunity to apply those leadership techniques discussed in the classroom in a combat environment.
- MIS 1601C** **SS 3**  
**Land Navigation.** Instruction in the basic skills of land navigation and terrain recognition. The study of map reading including declination, orientation and terrain/contour association. Practical application of techniques learned in field environment.
- MIS 3300C** **SS 3**  
**The Small Unit Leader.** Analysis of the leader's role in directing and coordinating the efforts of individuals and small units in the execution of offensive and defensive tactical operations, to include military geography, weapons systems, communications systems, intelligence gathering capabilities.
- MIS 3410C** **SS 3**  
**Leadership Responsibilities.** A description of the role and responsibility of the small unit leader in the various branches of the army in today's modern army structure. The analysis and evaluation of case studies in small unit leadership and management with applicatory work emphasizing the duties and responsibilities of junior leaders in a simulation format.
- MIS 3610C** **SS 3**  
**Military Instruction Techniques.** Principles of military instruction with emphasis on developing and improving speaking and teaching abilities. Student presentations are video-taped with critiques during the playback.

- MLS 3220** **HRP 3 (2,5)**  
**Techniques in Clinical Microscopy:** PR: MCB 2013 and C.I. Analysis of human urine and other body specimens, chemically and microscopically; interpretation of abnormal results and their correlation to disease included.
- MLS 3305** **HRP 4 (3,6)**  
**Hematology:** PR: PCB 3703, CHM 2047 or C.I. Diagnostic procedures and morphologic interpretation; correlation of this data to disease.
- MLS 3539C** **HRP 4 (3,3)**  
**Immunohematology:** PR: C.I. Clinical blood banking; antigen-antibody identification, interpretation, correlation of abnormal results to disease.
- MLS 3549C** **HRP 4 (3,3)**  
**Coagulation-Immunopathology Fundamentals:** PR: C.I. Diagnostic procedures and theory to coagulation and immunopathology and the correlation of this data to disease.
- MLS 3625L** **HRP 4 (3,4)**  
**Techniques in Clinical Chemistry:** PR: CHM 3211. Laboratory techniques in clinical chemistry; instrumentation emphasized.
- MLS 4213C** **HRP 2 (1,3)**  
**Body Fluids:** PR: Admission to professional phase of the MLS program. Analysis of body fluids, chemically and microscopically.
- MLS 4320C** **HRP 4 (4,0)**  
**Advanced Hematology and Coagulation:** PR: Admission to the professional phase of the MEDT program or C.I. Formed elements of the blood; platelet function hemostasis, the methodology for studying this mechanism is presented; relationship to the clinical condition of human patients emphasized.
- MLS 4405** **HRP 4 (4,0)**  
**Clinical Pathogenic Microbiology:** PR: Admission to the professional phase of the MEDT program of C.I. Isolation and identification of pathogenic bacteria by culture and serological methods; interpretation of abnormal results; correlation to disease.
- MLS 4420C** **HRP 2 (2,1)**  
**Clinical Mycology:** PR: Admission to the professional phase of the MEDT program or C.I. Instruction and laboratory practice in the isolation and identification of fungi associated with mycotic infections of man.
- MLS 4431C** **HRP 3 (2,2)**  
**Clinical Parasitology:** PR: Admission to the professional phase of the MEDT program or C.I. Instruction and laboratory practice in the examination and study of clinical material for the detection and identification of animal parasites.
- MLS 4511** **HRP 3 (3,0)**  
**Clinical Serology:** PR: Admission to the professional phase of the MEDT program or C.I. Serological methods used in diagnostic studies.
- MLS 4550** **HRP 4 (4,0)**  
**Clinical Immunohematology:** PR: Admission to the professional phase of the MEDT program or C.I. Antigenic structure of red blood cells; related to crossmatching of blood, antibody screening, other blood banking procedures.
- MLS 4625C** **HRP 4 (4,0)**  
**Advanced Clinical Chemistry I:** PR: Admission to the professional phase of the MEDT program or C.I. Practice in clinical chemistry; human enzyme systems, renal function, liver function tests, etc.
- MLS 4630C** **HRP 3 (3,0)**  
**Advanced Clinical Chemistry II:** PR: MLS 4625. Continuation of MLS 4625 to cover hormones, isoenzymes, electrophoresis and toxicology.
- MLS 4830C** **HRP 4 (0,20) F**  
**Clinical Practice I:** PR: Admission to the professional phase of the MEDT program or C.I. Rotation in one or more of the following areas: Hematology, Chemistry, Microbiology, Blood Bank, Serology-Coagulation, Clinical Microscopy, Nuclear Medicine.

- MLS 4831C** **HRP 4 (0,20) W**  
**Clinical Practice II:** PR: Admission to the professional phase of the MEDT program or C.I. Continuation of MLS 4830C.
- MLS 4832C** **HRP 4 (0,20) S**  
**Clinical Practice III:** PR: Admission to the professional phase of the MEDT program or C.I. Continuation of MLS 4831C.
- MLS 4833C** **HRP 4 (0,20) Su**  
**Clinical Practice IV:** PR: Admission to the professional phase of the MEDT program or C.I. Continuation of MLS 4832C.
- MLS 4910** **HRP 1 (0,2)**  
**Clinical Research Projects:** PR: Admission to professional phase of Medical Technology Program or C.I. Individual projects, requiring library research and laboratory investigation culminating in a written report and presentation.
- MMC 4100** **SS 4 (4,0)**  
**Writing for the Mass Media:** PR: Minimum grade of C in JOU 3100. Students write for a certain segment of the mass media of their own choosing. May be repeated for credit.
- MMC 4200** **SS 4 (4,0) F,W**  
**Legal Responsibilities of the Mass Media:** Legal rights and restrictions, including Constitutional guarantees, libel, invasion of privacy, and contempt of court.
- MMC 4300** **SS 4 (4,0)**  
**International Communication and the Foreign Press:** A study of the news communicating systems of the world.
- MMC 4602** **SS 4 (4,0) F,S**  
**Social Responsibilities of the Mass Media:** Relationships between the mass media and society; examination of social and ethical responsibilities of the media.
- MMC 4608** **SS 4 (4,0) W**  
**Mass Communication of Government:** Role, responsibilities, and non-legal problems of both the government and press in the process of conveying governmental news to the public.
- MMC 4609** **SS 4 (4,0)**  
**Opinion and the Mass Media:** Role of the mass media in influencing public opinion, techniques of opinion measurement, and impact of opinion polls on voters.
- MMC 4610** **SS 4 (4,0) W,Su**  
**Propaganda and Psychological Warfare:** Propaganda and psychological warfare principles with a study of the activities engaged by nations.
- MMC 4700** **SS 4 (4,0)**  
**Mass Media and Popular Culture:** An impact study of mass media upon American culture past to present.
- MMC 4945** **SS 1-15 (0,1-15) F,W,S,Su**  
**Communication Internship:** PR: C.I. Internship in radio, television, film, journalism, public relations, advertising and speech involving practicum at selected communications organizations for one quarter.
- MMC 6301** **SS 4 (4,0) W**  
**Comparative International Communication Organizations:** A study of the principal mass communication organizations of the world.
- MMC 6603** **SS 4 (4,0)**  
**Communication and Society:** The importance of communications in societal stress situations, with emphasis on current problems.
- MMC 6606** **SS 4 (4,0)**  
**Persuasion in the Media:** Study of persuasive campaign with focus upon ethics, methodology, and strategies toward accomplishing the communication end.
- MMC 6611** **SS 4 (4,0) W**  
**Effects of Advertising on Society:** An in-depth study of advertising's effects on consumer behavior, societal mores and media economics.

- MMC 6612** **SS 4 (4,0) Su**  
**The Media and Government:** An analysis of the daily interaction between the news media and government. Current theories, policies, problems and conflicts.
- MRE 3000C** **HRP 3 (2,2)**  
**Medical Record Administration I:** An introduction to the profession.
- MRE 3110C** **HRP 5 (3,4)**  
**Medical Record Administration II:** PR: MRE 3000C or C.I. Problems oriented medical record; accreditation and certification; release of information, medical staff committees; record analysis.
- MRE 3202C** **HRP 5 (3,4)**  
**Coding Procedures:** PR: HSC 3531. Nomenclature and classification systems for health information retrieval.
- MRE 3210C** **HRP 3 (2,2)**  
**Health Information Retrieval Systems:** PR: MRE 3000 or C.I. The development of health statistics, registers and indices and their application for quality assurance, research and management.
- MRE 3800** **HRP 1 (0,4) W**  
**Directed Experience I:** PR: MRE 3101. Interdepartmental experience in selected health care facilities. Quantitative and qualitative record analysis; numbering and filing.
- MRE 3810** **HRP 1 (0,4) S**  
**Directed Experience II:** PR: MRE 3800. Application in a health record facility of the principles of numbering and filing; quantitative, qualitative record analysis; correspondence; microfilming; coding and indexing procedures.
- MRE 4304** **HRP 3 (3,0) S**  
**Medical Record Department Management:** Analysis and Problem Solving, Management functions in Medical Record Department.
- MRE 4312C** **HRP 3 (2,2)**  
**Analysis of Medical Record Department Operations:** PR: HSC 4162. Forms analysis and control; work distribution and simplification; other evaluation techniques.
- MRE 4400C** **HRP 5 (3,4)**  
**Health Care Records:** PR: MRE 3110C or C.I. Medical record standards and procedures for long term ambulatory, home health care and guidelines for consulting inservice education. Field trips.
- MRE 4410C** **HRP 3 (2,2)**  
**Medical Care Evaluation Procedures:** PR: MRE 4312C. Development and use of criteria in medical care evaluation and quality assurance in the medical record department.
- MRE 4420** **HRP 3 (3,0) S**  
**Health Legislation:** PR: MRE 4312C. Current trends in health legislation.
- MRE 4830** **HRP 2 (0,8) F**  
**Directed Experience III:** PR: MRE 3810 and HSC 3531. Supervised clinical experience in the medical record department of an approved health care facility. Coding and indexing procedures, medical transcription.
- MRE 4831** **HRP 2 (0,8) W**  
**Directed Experience IV:** PR: MRE 4830. Continuation of MRE 4830.
- MRE 4835** **HRP 4 (0,16) Su**  
**Management Affiliation:** Four weeks at a selected health facility serving in an administrative capacity under the direction of a Registered Record Administrator.
- MTG 4212** **NS 4 (4,0)**  
**Modern Geometries I:** PR: MAC 3312 or C.I. Axioms; Finite geometries; groups of transformations; Euclidean motions of a plane; Motions of 3-space; Convexity in 2-space and 3-space; Euclidean geometry of polygons and circles.
- MTG 4213** **NS 4 (4,0)**  
**Modern Geometries II:** PR: MTG 4233. Constructible numbers, constructions and impossibility proofs, geometry of inversion, basic projective geometry, duality, harmonic sets, conics, hyperbolic and elliptic geometries.

- MTG 4302** **NS 4 (4,0)**  
**Topology I:** PR: MHF 2300. Metric spaces; topological spaces, limit points, connectedness, compactness; topology of surfaces; spheres with handles and crosscaps; Euler characteristics; topological invariants.
- MTG 4303** **NS 4 (4,0)**  
**Topology II:** PR: MTG 4302. Continuation of MTG 4302.
- MUC 1101** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance-Composition:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MUC 3203** **HFA 2 (1,1) F,W,S,Su**  
**Composition:** PR: C.I. by audition. Creative work in large and small forms in the area of choral, instrumental and keyboard media. May be repeated for credit.
- MUE 3401** **ED 4 (2,2) F,W,S,Su**  
**Music in the Elementary School:** Fundamental procedures for teaching elementary school music, stressing appropriate music materials and activities for different age groups; selected experiences in music.
- MUE 4314** **ED 2 F**  
**Music Education Instruction in Schools:** PR: EDF 3603 or C.I. Organization and administration of instruction of the comprehensive music education program, K-12; evaluation procedures and materials; concurrent laboratory experiences, consideration of vocal and instrumental program. LAB TBA.
- MUE 4330** **ED 2 (2,0) W**  
**Elementary School Music Instructional Analysis:** PR: EDF 3603, MUE 4314, or C.I. Instructional planning, techniques and materials in elementary school classrooms; sources of information; interrelationships with curriculum.
- MUE 4350** **ED 2 (2,0) S**  
**Secondary School Music Instructional Analysis:** PR: EDF 3603, MUE 4314, or C.I. Instructional planning, techniques, and materials in middle, junior, and senior high school classrooms; consideration of general music education program.
- MUE 4480** **HFA 2 (1,1) F**  
**Marching Band Techniques:** PR: C.I. Principles of organizing and training marching bands; Planning, charting football shows, rehearsal problems. Guided observations. May be repeated for credit.
- MUE 5611** **ED 3 (3,0) W,Su**  
**Trends in Elementary School Music Education:** PR: MUE 3401 or equivalent, or C.I. Advanced study of instructional strategies and materials; integration of music education experiences with classroom activities; personal musical skill development; current research and new curricula.
- MUE 6080** **ED 3 (3,0) F**  
**Foundations of Contemporary Music Education:** PR: Rank III Certificate or C.I. Examination of historical, philosophical and psychological foundations of Music Education.
- MUE 6155** **ED 3 (3,0) S,Su**  
**Teaching Performing Organizations:** PR: Rank III Certificate or C.I. Techniques and skills for the planning, administrating, and directing of performing music organizations.
- MUE 6349** **ED 3 (3,0) W**  
**Advanced General Music:** PR: Rank III Cert. of C.I. Analysis of current materials, new programs and teaching techniques in general music, K-12. Emphasis on practical applications.
- MUE 6946** **ED 3 (0,14) F,W,S**  
**Practicum in Music Education:** PR: Rank III Certificate, MUE 6080, MUE 6349 and MUE 6155, MUE 6610, and MUE 6630, or C.I. Field experience in teaching music.
- MUG 3101** **HFA 2 (1,1) F**  
**Basic Conducting:** Fundamental techniques and practice in conducting.

- MUG 3201** **HFA 2 (1,1) W**  
**Choral Conducting:** PR: C.I. Fundamental principles of choral conducting and rehearsal techniques. May be repeated for credit.
- MUG 3301** **HFA 2 (1,1) W**  
**Instrumental Conducting:** PR: C.I. Fundamental principles of instrumental conducting and rehearsal techniques. May be repeated for credit.
- MUG 4102** **HFA 3 (2,1) F,W,S,Su**  
**Advanced Conducting:** Study of advanced vocal or instrumental conducting techniques. Rehearsal procedures, selection of materials and program-building, interpretation of scores, study and performance of selected works.
- MUH 4211** **HFA 3 (3,0) F**  
**History and Literature:** PR: MUT 1113. Required of music majors. In depth study of the development of Western musical styles from antiquity to the present.
- MUH 4212** **HFA 3 (3,0) W**  
**History and Literature:** PR: MUT 2116. Continuation of MUH 4211.
- MUH 4213** **HFA 3 (3,0) S**  
**History and Literature:** PR: MUT 2117. Continuation of MUH 4212.
- MUH 4218** **HFA 2 (2,0) F**  
**Review of Music History:** A review of music history from Ancient Greece to the present.
- MUH 4340** **HFA 2, (2,0) F**  
**Renaissance and Baroque Music:** PR: Satisfactory music history placement exam. Study of selected music from Dunstable through Bach and Handel. Emphasis on stylistic development and performance practices.
- MUH 4361** **HFA 2 (2,0) W**  
**Era of the Sonata.** PR: Satisfactory music history placement exam. Selected topics from the origins of Classicism through the nineteenth century. Emphasis on stylistic development and formal analysis.
- MUH 4372** **HFA 2 (2,0) S**  
**Music of the Twentieth Century:** PR: Satisfactory music history placement exam. In-depth study of selected masterpieces of the twentieth century. Analysis of a variety of twentieth-century techniques.
- MUL 3011** **HFA 4 (3,1) F,W,S,Su**  
**Enjoyment of Music:** Only non-music majors. Designed to develop an understanding of musical principles and techniques for listening to music.
- MUL 3401** **HFA 2 (1,1) F**  
**Piano Literature:** PR: C.I. Survey of stringed keyboard literature from the sixteenth century to the present with emphasis on technical, formal and performance problems.
- MUL 3402** **HFA 2 (1,1) W**  
**Piano Literature:** PR: MUL 3401. Continuation of MUL 3401.
- MUL 3403** **HFA 2 (1,1) S**  
**Piano Literature:** PR: MUL 3402. Continuation of MUL 3402.
- MUL 3622** **HFA 1 (1,0) F**  
**Song Literature:** PR: C.I. Survey of the development of the art song from the Middle Ages to the present with emphasis on technical, formal and performance problems.
- MUL 3624** **HFA 1 (1,0) W**  
**Song Literature:** PR: MUL 3622. Continuation of MUL 3622.
- MUL 3625** **HFA 1 (1,0) S**  
**Song Literature:** PR: MUL 3624. Continuation of MUL 3624.
- MUL 3670** **HFA 3 (0,3) F,W,S,Su**  
**Opera Workshop:** PR: C.I. Study of expressive emotion in relation to musical theatre; staging and performance of prepared studies.



- MUN 3120** **HFA 1 (0,3) F,S,W,Su**  
**Major Performing Organizations—Concert Band:** PR: C.I. Open to all students. Study and performance of music for large ensembles. May be repeated for credit.
- MUN 3140** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Wind:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3280** **HFA 1 (0,3) F,W,S,Su**  
**Major Performing Organizations—Community Orchestra:** PR: C.I. Open to all students. Study and performance of music for large ensembles. May be repeated for credit.
- MUN 3310** **HFA 1 (0,3) F,S,W,Su**  
**Major Performing Organizations—Mixed Chorus:** PR: C.I. Open to all students. Study and performance of music for large ensembles. May be repeated for credit.
- MUN 3340** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Chorus:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3341** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Chorus:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3410** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—String:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3420** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Woodwind:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3430** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Brass:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3440** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Percussion:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3450** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Piano:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3710** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Jazz/Pop:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUN 3711** **HFA 1 (0,3) F,W,S,Su**  
**Chamber Music Ensembles—Jazz/Pop:** PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit.
- MUS 1011** **HFA 0 (3,0) F,W,S,Su**  
**Music Forum:** A series of special musical events required of music majors. Includes lectures and recitals by faculty, students, and guest artists.
- MUS 3670** **HFA 3 (3,0) F,W,S,Su**  
**Music in Society:** Social functions of music and its relationship with other arts.
- MUS 4401** **HFA 2 (1,1) F**  
**Studio Teaching:** PR: C.I. Management of the music studio; responsibilities and techniques of private instruction for the studio teacher; principles of psychology of music. May be repeated for credit.
- MUS 4905** **HFA 1-6 (0,3-13) F,W,S,Su**  
**Directed Experience:** PR: C.I. Required of music majors; experience in communicating music under qualified teachers. Credit determined by number of hours assigned per week. May be repeated for credit.

- MUT 1210** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Ear Training I:** Aural comprehension of elements of music—rhythm, melody, harmony, form.
- MUT 1211** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Ear Training II:** Continuation of MUT 1210.
- MUT 1212** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Ear Training III:** Continuation of MUT 1211.
- MUT 1221** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Sight Singing I:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MUT 1222** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Sight Singing II:** Continuation of MUT 1221.
- MUT 1226** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Sight Singing III:** Continuation of MUT 1222.
- MUT 2111** **HFA 3 (3,0) F**  
**Music Theory:** Required of music majors; writing, performance, analysis of music of various stylistic periods.
- MUT 2112** **HFA 3 (3,0) W**  
**Music Theory:** PR: MUT 2111. Continuation of MUT 2111.
- MUT 2113** **HFA 3 (3,0) S**  
**Music Theory:** PR: MUT 2112. Continuation of MUT 2112.
- MUT 3116** **HFA 3 (3,0) F**  
**Music Theory:** PR: MUT 2113. Required of music majors; continuation of MUT 2111-2113; writing, performance, and analysis of music of various stylistic periods.
- MUT 3117** **HFA 3 (3,0) W**  
**Music Theory:** PR: MUT 3116. Continuation of MUT 3116.
- MUT 3118** **HFA 3 (3,0) S**  
**Music Theory:** PR: MUT 3117. Continuation of MUT 3117.
- MUT 4031** **HFA 2 (2,0) S**  
**Review of Music Theory:** A comprehensive review of harmonic and analytic skills. May be repeated for credit.
- MUT 4275** **HFA 2 (2,0) W**  
**Review of Sight-Singing and Ear Training.** An intensive review of aural skills. May be repeated for credit.
- MUT 4344** **HFA 2 (1,1) W,S**  
**Seminar: Arranging and Transcription:** PR: C.I. Scoring for band, orchestral and choral groups. May be repeated for credit.
- MUT 4431** **HFA 3 (3,0) F**  
**Music Theory:** PR: MUS 3123. Required of music majors; continuation of MUS 3121, MUS 3122, MUS 3123, writing, performance, and analysis of music of various stylistic periods.
- MUT 4432** **HFA 3 (3,0) W**  
**Music Theory:** Continuation of MUS 4431.
- MUT 5325** **HFA 3 (3,0) W,Su**  
**Arranging and Composing Music:** PR: Satisfactory placement tests in theory, sight-singing, and ear training. Arranging and composing music for instrumental and vocal ensembles. Some emphasis on compositional techniques of the 20th century.
- MVB 1210** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Brass Class:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.

- MVB 1211** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Brasses (Trumpet):** Private and/or class instruction. Credit applicable toward music degree if not in student's performing medium; open to non-music majors. May be repeated for credit.
- MVB 1212** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Brasses (Horn):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVB 1213** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Brasses (Trombone):** Private and/or class instruction. Credit applicable toward music degree if not in student's performing medium; open to non-music majors. May be repeated for credit.
- MVB 1214** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Brasses (Baritone Horn):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVB 1215** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Brasses (Tuba):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVB 2311** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Brasses (Trumpet):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVB 2312** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Brasses (Horn):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVB 2313** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Brasses (Trombone):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVB 2314** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Brasses (Baritone Horn):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVB 2315** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Brasses (Tuba):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVB 3321** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Brasses (Trumpet):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 3322** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Brasses (Horn):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 3323** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Brasses (Trombone):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MBV 3324** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Brasses (Baritone Horn):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 3325** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Brasses (Tuba):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 4331** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Brasses (Trumpet):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music

majors. May be repeated for credit.

- MVB 4332** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Brasses (Horn):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 4333** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Brasses (Trombone):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 4334** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Brasses (Baritone Horn):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 4335** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Brasses (Tuba):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVB 4341** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Brasses (Trumpet):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVB 4342** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Brasses (Horn):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVB 4343** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Brasses (Trombone):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVB 4344** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Brasses (Baritone Horn):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVB 4345** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Brasses (Tuba):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVB 5251** **HFA 1 (1,0) F,W,S,Su**  
**Secondary Graduate Performance—Brasses (Trumpet):** PR: C.I.
- MVB 5252** **HFA 1 (1,0) F,W,S,Su**  
**Secondary Graduate Performance—Brasses (Horn):** PR: C.I.
- MVB 5253** **HFA 1 (1,0) F,W,S,Su**  
**Secondary Graduate Performance—Brasses (Trombone):** PR: C.I.
- MVB 5254** **HFA 1 (1,0) F,W,S,Su**  
**Secondary Graduate Performance—Brasses (Baritone Horn):** PR: C.I.
- MVB 5255** **HFA 1 (1,0) F,W,S,Su**  
**Secondary Graduate Performance—Brasses (Tuba):** PR: C.I.
- MVB 5351** **HFA 2 (1,1) F,W,S,Su**  
**Principal Graduate Performance—Brasses (Trumpet):** PR: C.I.
- MVB 5352** **HFA 2 (1,1) F,W,S,Su**  
**Principal Graduate Performance—Brasses (Horn):** PR: C.I.
- MVB 5353** **HFA 2 (1,1) F,W,S,Su**  
**Principal Graduate Performance—Brasses (Trombone):** PR: C.I.
- MVB 5354** **HFA 2 (1,1) F,W,S,Su**  
**Principal Graduate Performance—Brasses (Baritone Horn):** PR: C.I.

- MVB 5355** **HFA 2 (1,1) F,W,S,Su**  
**Principal Graduate Performance—Brasses (Tuba):** PR: C.I.
- MVK 1111** **HFA 1 (0,2) F,W,S,Su**  
**Class Piano I:** Class instruction for beginning piano students. Not open to music majors whose major performing medium is piano. May be repeated for credit.
- MVK 1121** **HFA 1 (0,2) F,W,S,Su**  
**Class Piano II:** PR: MVK 1111 of C.I. Not open to music majors whose major performing medium is piano. May be repeated for credit.
- MVK 1131** **HFA 1 (0,2) F,W,S,Su**  
**Class Piano III:** PR: MVK 1121 or C.I. Preparation for the piano proficiency examination. May be repeated for credit.
- MVK 1141** **HFA 1 (1,1) F,W,S,Su**  
**Class Piano IV:** PR: MVK 1131 or C.I. Individualized instruction. Credit applicable toward music degree by non-piano majors; open to non-music majors. May be repeated for credit.
- MVK 1211** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Piano:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVK 1213** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Organ:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVK 2311** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Piano:** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVK 2313** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Organ:** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVK 3321** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Piano:** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVK 3323** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Organ:** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVK 4331** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Piano:** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVK 4333** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Organ:** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVK 4341** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Piano:** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVK 4343** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Organ:** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVK 4640** **HFA 2 (1,1) W**  
**Piano Pedagogy I:** PR: C.I. Methods, materials for teaching individuals and classes of children and adults beginning to intermediate levels; demonstration and observation of procedures. May be repeated for credit.

<b>MVK 4641</b>	<b>HFA 2 (1,1) S</b>
<b>Piano Pedagogy II:</b> PR: C.I. Continuation of MVK 4640. Emphasis on intermediate through advanced levels. May be repeated for credit.	
<b>MVK 5251</b>	<b>HFA 1 (1,0) F,W,S,Su</b>
<b>Secondary Graduate Performance—Piano:</b> PR: C.I.	
<b>MVK 5253</b>	<b>HFA 1 (1,0) F,W,S,Su</b>
<b>Secondary Graduate Performance—Organ:</b> PR: C.I.	
<b>MVK 5351</b>	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>Principal Graduate Performance—Piano:</b> PR: C.I.	
<b>MVK 5353</b>	<b>HFA 2 (2,1) F,W,S,Su</b>
<b>Principal Graduate Performance—Organ:</b> PR: C.I.	
<b>MVO 1214</b>	<b>HFA 1 (1,1) F,W,S,Su</b>
<b>Secondary Performance—Recorder:</b> Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.	
<b>MVO 3114</b>	<b>HFA 3 (2,1) F,W,S,Su</b>
<b>Recorder I:</b> Open to non music majors. Class instruction in beginning recorder playing.	
<b>MVO 3124</b>	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>Recorder II:</b> Class instruction in advanced recorder solo and ensemble playing. PR: C.I. Open to music students and non-music students who have taken MVO 3114.	
<b>MVP 1211</b>	<b>HFA 1 (1,1) F,W,S,Su</b>
<b>Secondary Performance—Percussion:</b> Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non music majors. May be repeated for credit.	
<b>MVP 2311</b>	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>Principal Performance I—Percussion:</b> PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.	
<b>MVP 3321</b>	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>Principal Performance II—Percussion:</b> PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.	
<b>MVP 4331</b>	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>Principal Performance III—Percussion:</b> PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.	
<b>MVP 4341</b>	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>Principal Performance IV—Percussion:</b> PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.	
<b>MVP 5251</b>	<b>HFA 1 (1,0) F,W,S,Su</b>
<b>Secondary Graduate Performance—Percussion:</b> PR: C.I.	
<b>MVP 5351</b>	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>Principal Graduate Performance—Percussion:</b> PR: C.I.	
<b>MVS 1210</b>	<b>HFA 1 (1,1) F,W,S,Su</b>
<b>Secondary Performance—String Class:</b> Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.	
<b>MVS 1211</b>	<b>HFA 1 (1,1) F,W,S,Su</b>
<b>Secondary Performance—Strings (Violin):</b> Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.	
<b>MVS 1212</b>	<b>HFA 1 (1,1) F,W,S,Su</b>
<b>Secondary Performance—Strings (Viola):</b> Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors.	

May be repeated for credit.

**MVS 1213**

**HFA 1 (1,1) F,W,S,Su**

**Secondary Performance—Strings (Cello):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.

**MVS 1214**

**HFA 1 (1,1) F,W,S,Su**

**Secondary Performance—Strings (Bass):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.

**MVS 1216**

**HFA 1 (1,1) F,W,S,Su**

**Secondary Performance—Guitar:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.

**MVS 2311**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance I—Strings (Violin):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

**MVS 2312**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance I—Strings (Viola):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

**MVS 2313**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance I—Strings (Cello):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

**MVS 2314**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance I—Strings (Bass):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

**MVS 2326**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance I—Guitar:** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

**MVS 3321**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance II—Strings (Violin):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 3322**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance II—Strings (Viola):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 3323**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance II—Strings (Cello):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 3324**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance II—Strings (Bass):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 3336**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance II—Guitar:** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 4331**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance III—Strings (Violin):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 4332**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance III—Strings (Viola):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 4333**

**HFA 2 (1,1) F,W,S,Su**

**Principal Performance III—Strings (Cello):** PR: Satisfactory piano proficiency examination and

necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 4334** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance III—Strings (Bass):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVS 4341** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance IV—Strings (Violin):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

**MVS 4342** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance IV—Strings (Viola):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

**MVS 4343** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance IV—Strings (Cello):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

**MVS 4344** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance IV—Strings (Bass):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

**MVS 4346** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance III—Guitar:** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

**MVS 5251** **HFA 1 (1,0) F,W,S,Su**

**Secondary Graduate Performance—Strings (Violin):** PR: C.I.

**MVS 5252** **HFA 1 (1,0) F,W,S,Su**

**Secondary Graduate Performance—Strings (Viola):** PR: C.I.

**MVS 5253** **HFA 1 (1,0) F,W,S,Su**

**Secondary Graduate Performance—Strings (Cello):** PR: C.I.

**MVS 5254** **HFA 1 (1,0) F,W,S,Su**

**Secondary Graduate Performance—Strings (Bass):** PR: C.I.

**MVS 5351** **HFA 2 (1,1) F,W,S,Su**

**Principal Graduate Performance—Strings (Violin):** PR: C.I.

**MVS 5352** **HFA 2 (1,1) F,W,S,Su**

**Principal Graduate Performance—Strings (Viola):** PR: C.I.

**MVS 5353** **HFA 2 (1,1) F,W,S,Su**

**Principal Graduate Performance—Strings (Cello):** PR: C.I.

**MVS 5354** **HFA 2 (1,1) F,W,S,Su**

**Principal Graduate Performance—Strings (Bass):** PR: C.I.

**MVV 1211** **HFA 1 (1,1) F,W,S,Su**

**Secondary Performance—Voice:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.

**MVV 2311** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance I—Voice:** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

**MVV 3321** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance II—Voice:** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

**MVV 4331** **HFA 2 (1,1) F,W,S,Su**

**Principal Performance III—Voice:** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.



- MVV 4341** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Voice:** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVV 4640** **HFA 2 (1,1) W**  
**Voice Pedagogy I:** PR: C.I. Methods, materials for vocalists; teachers, conductors; voice production; diagnosis of problems and corrections; demonstration and observation of teaching; beginning to intermediate levels. May be repeated for credit.
- MVV 4641** **HFA 2 (1,1) S**  
**Voice Pedagogy II:** PR: C.I. Continuation of MVV 4640. Intermediate to advanced levels. May be repeated for credit.
- MVV 5251** **HFA 1 (1,0) F,W,S,Su**  
**Secondary Graduate Performance—Voice:** PR: C.I.
- MVV 5351** **HFA 2 (1,1) F,W,S,Su**  
**Principal Graduate Performance—Voice:** PR: C.I.
- MVW 1210** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance Woodwind Class:** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVW 1211** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Woodwinds (Flute):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVW 1212** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Woodwinds (Oboe):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVW 1213** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Woodwinds (Clarinet):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVW 1214** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Woodwinds (Bassoon):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVW 1215** **HFA 1 (1,1) F,W,S,Su**  
**Secondary Performance—Woodwinds (Saxophone):** Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.
- MVW 2311** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Woodwinds (Flute):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVW 2312** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Woodwinds (Oboe):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVW 2313** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Woodwinds (Clarinet):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVW 2314** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Woodwinds (Bassoon):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.
- MVW 2315** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance I—Woodwinds (Saxophone):** PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

- MVW 3321** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Woodwinds (Flute):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 3322** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Woodwinds (Oboe):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 3323** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Woodwinds (Clarinet):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 3324** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Woodwinds (Bassoon):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 3325** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance II—Woodwinds (Saxophone):** PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 4331** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Woodwinds (Flute):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 4332** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Woodwinds (Oboe):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 4333** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Woodwinds (Clarinet):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 4334** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Woodwinds (Bassoon):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 4335** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance III—Woodwinds (Saxophone):** PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.
- MVW 4341** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Woodwinds (Flute):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVW 4342** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Woodwinds (Oboe):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVW 4343** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Woodwinds (Clarinet):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVW 4344** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Woodwinds (Bassoon):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVW 4345** **HFA 2 (1,1) F,W,S,Su**  
**Principal Performance IV—Woodwinds (Saxophone):** PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.
- MVW 5251** **HFA 1 (1,0) F,W,S,Su**  
**Secondary Graduate Performance—Woodwinds (Flute):** PR: ,C.I.

<b>MVW 5252</b> Secondary Graduate Performance—Woodwinds (Oboe): PR: C.I.	<b>HFA 1 (1,0) F,W,S,Su</b>
<b>MVW 5253</b> Secondary Graduate Performance—Woodwinds (Clarinet): PR: C.I.	<b>HFA 1 (1,0) F,W,S,Su</b>
<b>MVW 5254</b> Secondary Graduate Performance—Woodwinds (Bassoon): PR: C.I.	<b>HFA 1 (1,0) F,W,S,Su</b>
<b>MVW 5255</b> Secondary Graduate Performance—Woodwinds (Saxophone): PR: C.I.	<b>HFA 1 (1,0) F,W,S,Su</b>
<b>MVW 5351</b> Principal Graduate Performance—Woodwinds (Flute): PR: C.I.	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>MVW 5352</b> Principal Graduate Performance—Woodwinds (Oboe): PR: C.I.	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>MVW 5353</b> Principal Graduate Performance—Woodwinds (Clarinet): PR: C.I.	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>MVW 5354</b> Principal Graduate Performance—Woodwinds (Bassoon): PR: C.I.	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>MVW 5355</b> Principal Graduate Performance—Woodwinds (Saxophone): PR: C.I.	<b>HFA 2 (1,1) F,W,S,Su</b>
<b>NUR 3045C</b> Nursing Principles and Practices for Daily Living: Beginning principles and skills in rendering care to individuals in their daily living activities, e.g., bathing, ambulation, bed making.	<b>HRP 6 (4,6) F</b>
<b>NUR 3134</b> Scientific Theories of Nursing I: The first theoretical course emphasizing the nurse's role in prevention, health maintenance, hospitalization and rehabilitation of disease.	<b>HRP 6 (6,0) S</b>
<b>NUR 3134L</b> Nursing Intervention I: Application of the scientific theories in nursing to health care problems in a variety of clinical settings to clients and their families.	<b>HRP 5 (0,15) S</b>
<b>NUR 3135</b> Nursing Seminar III: An opportunity to explore and correlate maternal/infant and fathering/sibling relationships to the nursing process.	<b>HRP 2 (2,0) S</b>
<b>NUR 3618C</b> Nursing During Alterations in Life Patterns: The study of how people perceive and cope with changes in their life patterns as a base for deliberative nursing intervention.	<b>HRP 8 (4,12) W</b>
<b>NUR 3619</b> Nursing Seminar II: Assessing the health needs of man utilizing the nursing process principles.	<b>HRP 2 (2,0) W</b>
<b>NUR 3725C</b> Pathophysiology and Physical Assessment I: A course integrating the clinical concepts of disease processes with the physical assessment of clients.	<b>HRP 3 (2,3) F,W</b>
<b>NUR 3726C</b> Pathophysiology and Physical Assessment II: A continuation of Pathophysiology and Physical Assessment I.	<b>HRP 3 (2,3) W</b>
<b>NUR 4207</b> Scientific Theories of Nursing II: PR: Scientific Theories of Nursing I. A continuation of Scientific Theories of Nursing I.	<b>HRP 6 (6,0) F</b>
<b>NUR 4207L</b> Nursing Intervention II: PR: Nursing Intervention I. A continuation of Nursing Intervention I.	<b>HRP 5 (0,15) F</b>
<b>NUR 4208</b> Nursing Seminar IV: An opportunity to investigate highly stressful situations and the means of assisting individuals and families to cope with life-threatening experiences.	<b>HRP 2 (2,0) F</b>

- NUR 4290C** **HRP 1-3 (0,3-9) S**  
**Special Nursing Topics:** Comprehensive nursing care to individuals with complex and critical problems.
- NUR 4411** **HRP 6 (6,0) W**  
**Scientific Theories of Nursing III:** PR: Scientific Theories of Nursing II. A continuation of Scientific Theories of Nursing II.
- NUR 4411L** **HRP 5 (0,15) W**  
**Nursing Intervention III:** PR: Nursing Intervention II. A continuation of Nursing Intervention II.
- NUR 4412** **HRP 2 (2,0) W**  
**Nursing Seminar V:** The role of the nurse in teaching health in the home and in agencies concerned with prevention of illness.
- NUR 4905** **HRP 3 (1,6) W**  
**Nursing Independent Study:** An opportunity for indepth study in an area of special interest to the student with a laboratory experience.
- NUU 3105** **HRP 2 (2,0) F**  
**Nursing Seminar I:** An introduction to nursing presenting an overview of history, legal aspects, community resources and the nurse's role in health and disease.
- NUU 4225** **HRP 3 (3,0) S**  
**Scientific Theories of Nursing IV:** PR: Scientific Theories of Nursing III. A continuation of Scientific Theories of Nursing III.
- NUU 4225L** **HRP 7 (0,21) S**  
**Nursing Intervention IV:** PR: Nursing Intervention III. A continuation of Nursing Intervention III.
- NUU 4226** **HRP 2 (2,0) S**  
**Nursing Seminar VI:** Nursing in today's society.
- NUU 4301** **HRP 3 (3,0) F**  
**Critical Inquiry:** A study of approaches to problematic situations in nursing and interpretation of findings. Investigation and analyzing nursing research and development of statistics.
- OCE 1012** **EN 4 (4,0) F,W,S,Su**  
**Oceanography and Space:** Fundamentals of oceanography and space with emphasis on the engineering aspects and uses. May be used to satisfy Scientific Environment requirement of Environmental Studies Program.
- ORI 2001** **SS 3 (3,0) F,W,S**  
**Interpretation I:** Analysis of thought, development of imagination; oral presentation of literary forms. (Recommended for students majoring in English and preparing to teach literature).
- ORI 3002** **SS 3 (3,0)**  
**Interpretation II:** PR: ORI 201 or C.I. Selecting and abridging literary material for platform use; preparation and presentation of program for special and general occasions.
- ORI 3210** **SS 3 (3,0)**  
**Oral Interpretation III:** PR: ORI 2001. Theories and practice in interpretation, with particular emphasis on reading for children.
- PAD 3003** **SS 4 (4,0) F,W**  
**Introduction to Public Administration:** PR: C.I. Analysis of administrative theories and the process of implementing public policies in a democratic society.
- PAD 4034** **SS 4 (4,0)**  
**Public Policy Administration:** Problems of values, interest, and objectives and their impact on execution of public programs, stressing the relationship between policies and administration.
- PAD 4204** **SS 4 (4,0)**  
**Fiscal Management:** PR: C.I.—Analysis of methods of securing public funds, the process of budgetmaking, and techniques of management used in managing public funds.
- PAD 4603** **SS 4 (4,0)**  
**Legal Aspects of Public Administration:** PR: C.I. A study of major legal problems facing the public administrator, especially at state and local levels.

- PAD 4803** **SS 4 (4,0) F**  
**Metropolitan Administration:** PR: PAD 3003 or C.I. Study of the formal and informal sociopolitical structures that govern urban areas; emerging patterns of government, and management practices in urban and suburban settings.
- PAD 4834** **SS 4 (4,0)**  
**Comparative Public Administration:** PR: C.I. An analysis of administrative structures and processes of selected countries, the influence of economic, social and political environment on bureaucratic functions.
- PAD 4941** **SS 6-12 (0,12)**  
**Public Administration Internship:** PR: C.I. Internship in municipal, county, state or federal government, including assignments in such fields as personnel, planning, budget and fiscal, procurement and public safety.
- PAD 5807** **SS 4 (4,0)**  
**Administrative Practice in the Public Sector:** PR: PAD 3003 or C.I. Senior or graduate standing. This course focuses on the process of policy formulation and execution in public agencies, planning, staffing, budgeting and program assessment.
- PAD 6037** **SS 4 (4,0)**  
**Bureaucracy and Public Policy:** PR: C.I. A critical examination of the bureaucracy and the impact of bureaucratic behavior on public administration.
- PAD 6127** **SS 4 (4,0)**  
**Choice Theory:** PR: C.I. Analysis of rational choice theories, game theoretic models, incremental decision making, with applications to problems of strategy and politics.
- PAD 6227** **SS 4 (4,0)**  
**Budgeting as a Policy and Program Instrument:** PR: C.I. Budgets as planning programming documents, stressing the relationships of policy and budgetary decisions, problems in grantsmanship and revenue decision making, program budgeting, PPBS, and incrementalism.
- PAD 6307** **SS 4 (4,0)**  
**Policy Analysis and Administration:** PR: C.I. Program analysis and organization structure as policy tools, examining the implementation of differential policy and the administrator as policy maker and change agent.
- PAD 6310** **SS 4 (4,0)**  
**Planning and Organization for Economic and Social Development:** PR: C.I. the purpose and use of economic and social planning, examining theories of development, regional analysis, methods and administration of planning, and evaluation of plan performance.
- PAD 6934** **SS 4 (4,0)**  
**Issues in Public Administration:** PR: C.I. Analysis of both substantive and theoretical issues confronting the broad spectrum of contemporary public administration; consideration of the "new public administration" movement.
- PCB 3023C** **NS 5 (3,4) S**  
**Cell Physiology:** PR: 11 hours in biological sciences or C.I. CR: CHM 3211. Basic physiological processes, cellular organization, exchange of materials, conversion of energy, irritability and contractibility.
- PCB 3043C** **NS 4 (3,3) F**  
**Principles of Ecology:** 12 hours in biological sciences. Elements of ecosystems, biogeochemical cycling, environmental factor interactions, population dynamics and evolution communities, and succession.
- PCB 3063C** **NS 4 (3,3) W,S**  
**Genetics:** PR: BSC 1010. Basic principles of heredity as applied to plants and animals. Laboratory will emphasize work with *Drosophila*.
- PCB 3233** **NS 3 (2,2) W**  
**Immunology:** PR: BSC 1010. Basic principles of the immune reaction, antigens antibody formulation, hypersensitivity and auto-immunity.
- PCB 3663** **NS 4 (3,2) F, even years**  
**Genetics and Man:** PR: HSC 1020 or BSC 1010. Basic principles of genetics as illustrated by

- PEL 2121C** **ED 3 (2,2) F,S**  
**Beginning Golf:** Development of basic golf skills. A study of performance and application of basic skills, rules and etiquette. Physiological and social values accruing from the carryover sport.
- PEL 2341C** **ED 3 (2,2) F,W,S,Su**  
**Beginning Tennis:** Development of basic tennis skills. A study of performance and application of basic skills, rules, and etiquette. Physiological and social values accruing from the carryover sport.
- PEL 3123C** **ED 3 (2,2) W,S**  
**Advanced Golf:** PR: PEL 2121C or equivalent competency. Development of advanced golf skills. A study of performance and application of advanced skills, rules, and etiquette. Physiological and social values accruing from the carryover sport.
- PEL 3343C** **ED 3 (2,2) W,Su**  
**Advanced Tennis:** PR: PEL 2341C or equivalent competency. Development of advanced tennis skill. A study of performance and application of advanced skills, rules, etiquette, physiological and social values accruing from this carryover sport.
- PEM 3102C** **ED 3 (2,2) F,W,S**  
**Body Development:** An in-depth study of individual physical (musculo-skeletal, neuromuscular, cardiorespiratory) fitness. Emphasis on individual diagnosis, principles, procedures, and the conduct of related exercise programs.
- PEM 3363C** **ED 3 (0,0) F,W,S,Su**  
**Equine (horse) Management:** Practical study of horse management. Physiology and anatomy of the horse in relation to lameness care, digestive system, nutrition, first aid, preventive medicine, and parasites.
- PEM 4153C** **ED 3 (3,0) F,W,S,Su**  
**Actualization of Physical Potential in Contemporary Living.** Factors underlying physical potential. Self physical assessment, values of physical activity, self-improvement, contemporary problems, body awareness, body mechanics, family responsibilities. Development of individual program.
- PEN 1121C** **ED 3 (2,2) F,S**  
**Elementary Swimming:** For Non-swimmers and beginning swimmers. Development and study of technique in the basic skills of water safety and swimming.
- PEN 2123C** **ED 3 (2,2) W,Su**  
**Advanced Swimming:** PR: PEN 1121C or equivalent competency. Development and study of: advanced techniques, endurance in basic water safety and swimming skills; intermediate technique and endurance in a wide variety of ancillary skills.
- PEN 3101C** **ED 3 (2,2) F,Su**  
**Aquatics:** PR: PEN 2123C or equivalent competency. Development and study of techniques and principles of aquatic swimming activities—safety, strokes, fitness, water polo, synchronized swimming, skin diving, springboard diving, canoeing, and family instruction methods.
- PEN 3113C** **ED 3 (2,2) S,Su**  
**Life Saving:** Instruction, training and certification in basic life saving swimming skills.
- PEO 3011C** **ED 2 (1,1) F,W,S,Su**  
**Instructional Analysis in Team Sports:** PR: Sophomore standing. Analysis of neuromuscular performances and optimal approach to specific learning patterns in team sports.
- PEO 3121C** **ED 2 (1,1) F,W**  
**Instructional Analysis in Golf:** PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific learning patterns.
- PEO 3341C** **ED 2 (1,1) F,W,S,Su**  
**Instructional Analysis in Tennis:** PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.
- PEP 3201C** **ED 2 (1,1) F,S**  
**Instructional Analysis in Gymnastics and Tumbling:** PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.

- PEP 3421C** **ED 2 (1,1) F,S**  
**Instructional Analysis in Wrestling:** PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific learning patterns.
- PEQ 3101C** **ED 2 (1,1) F,W,S,Su**  
**Instructional Analysis in Aquatics:** PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.
- PEQ 3115C** **ED 3 (2,2) Su**  
**Water Safety Instruction:** PR: PEN 3113C or equivalent competency. Methods of teaching water safety. Includes practical application and certification.
- PET 3420** **ED 3 (3,0)**  
**Physical Education and the Total School Program:** PR: EDF 3603 and either EDF 2116 or 3255. Analysis of the teaching of Physical Education as it relates to the functions of the total school program, including a component in instructional media.
- PET 3450C** **ED 3 (3,0) F,S**  
**Physical Education Instructional Analysis:** PR: EDF 3603 and either EDF 2116 or 3255. Study of course objectives for the high school curriculum and survey of methods and materials having special application for teaching Physical Education.
- PET 3453** **ED 3 (2,1) F,W,S,Su**  
**Coaching Theory:** PR: PEO 3011. Theory and methods of coaching for optimum sports performances.
- PET 3461C** **ED 3 (3,0)F,W,S,Su**  
**Teaching Physical Education in the Elementary School:** PR: EDF 3603 and either EDF 2116 or 3255. Organization, practice and conduct of elementary school physical education with emphasis on teaching methods.
- PET 4230C** **ED 4 (2,3) F,S,Su**  
**Human Performance Learning:** PR: EDF 3255 or equivalent. Theories of movement and factors influencing the learning of gross and fine motor skills. (Lecture/laboratory.)
- PET 4340C** **ED 3 (2,2) F,W,S,Su**  
**Kinesiomechanics:** PR: ZOO 3733. Mechanics of human movement. Anatomical and mechanical analysis of motor tasks and individual performance. Laboratory experience in analytical and evaluative methods.
- PET 4370C** **ED 4 (2,2)F,W,S,Su**  
**Exercise Physiology—Cardiovascular:** PR: ZOO 3733. A circulatory study of man's homeostatic regulation during environmental stress. (Includes lecture and laboratory.)
- PET 4371C** **ED 4 (2,2) F,W,S,Su**  
**Exercise Physiology—Respiratory:** PR: ZOO 3733 and PET 4370C. A study of metabolic costs and respiratory adjustment to exercise.
- PET 4410** **ED 3 (3,0) F,W,S,Su**  
**Organization and Administration of Physical Education:** PR: PET 3651C or 3450C. Administering and organizing for instruction of the physical education class and the total school physical education program.
- PET 4510C** **ED 3 (3,0) W,Su**  
**Measurement and Evaluation in Physical Education:** PR: Jr. standing and completion of Phase I. Techniques of Measurement and evaluation in Physical Education.
- PET 4620C** **ED 3 (2,1) F,S,Su**  
**Rehabilitation Training Techniques:** PR: PET 4340C. Recognition and rehabilitation of sports injuries, including first aid.
- PET 4640** **ED 3 (2,1) Su**  
**Adapted Physical Education:** PR: PET 4340C and PET 4371C. Principles and methods for adapting physical education activities and programs for atypical participants. Nature of typical specific disabilities.

- PET 5149** **ED 3 (3,0)**  
**Professional Coaching Problems:** PR: Rank III Certificate or C.I. A seminar approach to problems and methods of coaching, including analysis of various philosophies.
- PET 6061C** **ED 3 (2,1)**  
**Kinesiological Analysis of Individual Activities:** PR: Rank III Certificate or C.I. Analytical techniques and their methods of application to individual motor activities.
- PET 6062C** **ED 3 (2,1)**  
**Kinesiological Analysis of Team Activities:** PR: Rank III Certificate or C.I. Analytical techniques of kinesiology and their methods of application to team motor activities.
- PET 6146** **ED 3 (3,0)**  
**Current Trends in Physical Education:** PR: Rank III certificate or C.I. A comprehensive review of the literature influencing trends in physical education.
- PET 6165** **ED 3 (3,0)**  
**Philosophical Foundations of Physical Education:** PR: Rank III Certificate or C.I. Analysis of the forces and events leading to the development of current concepts in physical education.
- PET 6235C** **ED 4 (3,2) Su**  
**Motor Learning:** PR: Rank III Certificate or C.I. A study of optimal human factors controlling performance.
- PET 6285C** **ED 3 (2,1)**  
**Perceptual Motor Development:** PR: EDF 6120 or C.I. Study of the relationship between perceptual motor development and learning. Special attention is given to the effects on academic achievement and reading.
- PET 6378C** **ED 4 (3,2) Su**  
**Physiology of Exercise—Environmental:** PR: Rank III Certificate or C.I. A study of physiological adaptation resulting from prescribed physical activity programs.
- PET 6415** **ED 3 (3,0)**  
**Administration in Physical Education:** PR: Rank III Certificate or C.I. Study of current problems in the administration of school physical education programs.
- PET 6425** **ED 3 (3,0)**  
**Organization and Design of Physical Education Programs:** PR: Rank III Certificate or C.I. Study of physical education and its existing organization. Emphasis on ethics, values, principles and issues.
- PET 6516C** **Ed 3 (3,0)**  
**Measurement in Kinesiology and Physical Education:** PR: Rank III Certificate or C.I. Techniques of measurement and evaluation of human performance and their applications to physical education.
- PET 6540** **ED 4 (4,0) F,W,S,Su**  
**Problem Analysis—Review of Literature:** PR: EDF 6432 and C.I. Comprehensive review of literature related to a selected topic in physical education: identification, analysis, and evaluation of developments, issues, and research problems.
- PHH 3100** **HFA 4 (4,0) F**  
**Ancient Philosophy:** Foundations of Western philosophy in ancient Greek thinking about man and nature, including the pre-Socratics, Socrates, Plato, Aristotle.
- PHH 3430** **HFA 4 (4,0) W**  
**Medieval and Early Modern Philosophy:** Faith, reason and skepticism in the development of philosophy from the Scholastics to Hume; Continental Rationalism and British Empiricism.
- PHH 3440** **HFA 4 (4,0) S**  
**Late Modern Philosophy:** Relativism and atheism in the development of philosophy from Kant to Nietzsche; the challenge of science and religion to philosophy.
- PHH 3600** **HFA 4 (4,0) W**  
**Problems in Contemporary Philosophy:** Prominent issues and trends in 20th century philosophy, excluding Existentialism.



- PHI 1100** **HFA 4 (4,0) W**  
**Critical Thinking:** An examination of fallacies and other logical abuses in conjunction with an analysis of traditional modes in an attempt to encourage meaningful thought and usage.
- PHI 2010** **HFA 4 (4,0) F,W,S**  
**Introduction to Philosophy:** Inquiry into the meaning and justification of fundamental ideas and beliefs concerning reality, knowledge, and values; application to relevant topics in ethics, religion, and politics.
- PHI 2130** **HFA 4 (4,0) F,W,S,Su**  
**Formal Logic I:** Analysis of logical form and of procedures used in deductive inference, of the kind underlying mathematical reasoning.
- PHI 3131** **HFA 4 (4,0) S**  
**Formal Logic II:** PR: PHI 2130. Systematic study of propositional and first-order predicate logic; logistic systems and axiomatic methods; problems of metatheory, including consistency, completeness and decidability.
- PHI 3600** **HFA 4 (4,0) F,S**  
**Ethics:** An examination of the nature of moral problems, judgements and principles with an emphasis on recent formulations in ethical theory.
- PHI 3630** **HFA 4 (4,0) S**  
**Practical Moral Dilemmas:** Probes practical moral problems arising out of advancements and complexities in modern professional life. Considers one or more of the following: medicine, business, technology, law.
- PHI 3800** **HFA 4 (4,0) W**  
**Aesthetics:** An investigation into the nature of human artistic experience with special reference to questions of form, perception and style.
- PHI 3803** **HFA 4 (4,0) S**  
**Philosophy and Creativity:** A companion course to PHI 3800, **Aesthetics**. Examines the empirical and metaphysical claims made for creativity; attempts to account for intuition, genius and intelligence.
- PHI 4220** **HFA 4 (4,0)**  
**Philosophy of Language:** PR: PHI 2010 and 2130. Develops philosophically illuminating descriptions of certain general features of language, such as reference, truth, meaning, and necessity.
- PHI 4360** **HFA 4 (4,0)**  
**Theory of Knowledge:** PR: PHI 2010 and PHI 2130. The study of knowledge: What is it? Can we have it? Topics include skepticism, "other minds," certainty, and belief.
- PHI 4400** **HFA 4 (4,0) S**  
**Philosophy of Science:** An examination of the conceptual foundations and methodology of modern science.
- PHI 4500** **HFA 4 (4,0)**  
**Metaphysics:** PR: PHI 2010 and PHI 2130. Investigates "first principles" and inquires into the ultimate nature of reality through consideration of being, substance, essence, space, time, cause and effect.
- PHI 4700** **HFA 4 (4,0) W**  
**Philosophy of Religion:** An examination of basic ideas, beliefs, attitudes and functions of religion; the significance of religion in human experience.
- PHM 3350** **HFA 4 (4,0) F**  
**Marxist Philosophy:** A study of the philosophy of Karl Marx and its development by Engels, Lenin and other Marxists, with attention to contemporary perspectives.
- PHM 4100** **HFA 4 (4,0)**  
**Social Philosophy:** Philosophical analysis and evaluation of selected issues arising from interaction of the individual, society, and the state.
- PHP 3788** **HFA 4 (4,0) F**  
**Existentialism:** Study of existentialist analysis and criticism of the human situation as found in the writings of such philosophers as Kierkegaard, Nietzsche, Heidegger, Sartre, and Camus.

- PHS 3151** **NS 4 (3,2) S**  
**Computer Methods in Physics I:** PR: PHY 2040 and COP 1110 or C.I. Nonanalytical problems in physics and astronomy, supplementary to the PHY 2040, 2041, 2042 sequence, solved by approximation with computer assistance.
- PHS 3805** **NS 3 (3,0)**  
**Physical Basis of Music:** Lectures, demonstrations, student activity; covers topics in wavemotion, acoustics of musical instruments, musical scales, timbre, architectural acoustics, human ear, sound reproduction. Satisfies Advanced ESP.
- PHS 4152** **NS 3 (2,2)**  
**Computer Methods in Physics II:** PR: PHY 3043 and COP 1110 or C.I. Examples and problems in physics from classical mechanisms, electromagnetic theory and wave mechanics are solved using numerical techniques with computer assistance.
- PHS 4250** **NS 4 (4,0)**  
**Biophysics:** PR: BSC 1010 and PHY 2051 or C.I. Physics of biosystems, viewed as optical control systems with constraints imposed by energy transfer mechanisms and examined by considering energy, information and cybernetics.
- PHS 4303** **NS 3 (3,0)**  
**Nuclear Physics:** PR: PHY 3046 or C.I. Nuclear force, structure, moments, and models, Alpha decay, beta decay, gamma-ray emission, nuclear reactions and applications of nuclear physics.
- PHS 4404** **NS 3 (3,0)**  
**Solid State Physics:** PR: PHY 3046 or C.I. Properties of solids, crystal binding, free electron model, band theory of solids. Fermi surface, and solid state applications.
- PHY 2040** **NS 4 (4,0) F**  
**General Physics I:** PR: High school physics or PSC 1512 or C.I. CR: MAC 3311. Basic principles of classical mechanics.
- PHY 2041C** **NS 5 (4,3) W,S**  
**General Physics II:** PR: PHY 2040; CR: MAC 3312. Electricity, magnetism, electromagnetic induction; with laboratory experiments.
- PHY 2042C** **NS 5 (4,3) S**  
**General Physics III:** PR: PHY 2041; CR: MAC 3313. Thermodynamics, optics, modern physics; with laboratory experiments.
- PHY 2050C** **NS 4 (3,3) F,W**  
**College Physics I:** PR: Two years of high school mathematics or C.I. Lectures and laboratory experiments, mechanics, properties of matter, heat.
- PHY 2051C** **NS 4 (3,3) W,S**  
**College Physics II:** PR: PHY 2050C or C.I. Sound, light, optics, modern physics.
- PHY 2052C** **NS 4 (3,3)**  
**College Physics III:** PR: PHY 2050C or C.I. Electrostatics, current electricity, magnetism, instrumentation; nuclear radiation.
- PHY 3014C** **NS 3 (1,3) F**  
**Project Physics I:** "Hands-on" lecture-laboratory course, particularly for Elementary Education majors and prospective Junior High science teachers. Forces, motion, energy, solids, liquids, gases, naked-eye astronomy.
- PHY 3015C** **NS 3 (1,3) W**  
**Project Physics II:** PR: PHY 3014C or C.I. Heat, weather, solar energy, wave motion, sound, electricity.
- PHY 3016C** **NS 3 (1,3) S**  
**Project Physics III:** PR: PHY 3015C or C.I. Magnetism, motors, light, color, photography, nuclear radiation.
- PHY 3034** **NS 3 (3,0)**  
**Physics of Science Fiction:** Study and discussion of physical principles which form the basis of selected science fiction themes. Satisfies Advanced E.S.P.

- PHY 3043** **NS 4 (4,0) F**  
**Mechanics:** PR: PHY 2042 or C.I.; CR: MAC 3314. Mechanics, vectors, coordinate transformations, rigid-body dynamics.
- PHY 3044** **NS 4 (4,0) W**  
**Electricity and Magnetism:** PR: PHY 3043 or C.I. Electrostatics, current electricity, special relativity.
- PHY 3045** **NS 4 (4,0) S**  
**Electromagnetic Waves:** PR: PHY 3044 or C.I. Magnetostatics, electromagnetism, wave interference, polarization.
- PHY 3046** **NS 4 (4,0) F**  
**Wave Mechanics:** PR: PHY 3045 or C.I. Time-independent Schrodinger equation, eigenfunctions, potential barriers, distribution functions, hydrogen atom, Zeeman & Stark effects.
- PHY 3047** **NS 4 (4,0) W**  
**Thermodynamics and Statistical Physics:** PR: PHY 3046 or C.I. Equations of state, equilibrium thermodynamics, derivation of variables from probability concepts and statistical principles.
- PHY 3101** **NS 3 (3,0) W,Su**  
**Modern Physics:** CR: MAP 3305, PR: PHY 3421. Selected topics in atomic, nuclear, molecular, and solid state physics. A study of spectroscopy, X-rays, nuclear radiation and cosmic rays.
- PHY 3421** **NS 3 (3,0) F,S**  
**Optics and Wave Motion:** CR: MAC 3314, PR: EGN 3383 or PHY 2042. Selected topics in optics, acoustics, and related wave phenomena. A study of reflection, refraction, interference, and diffraction.
- PHY 3722C** **NS 4 (2,4)**  
**Physics Laboratory—Electronics:** PR: PHY 3752 or C.I. Lecture and laboratory work stressing electronic principles through the study of test equipment, power supplies, amplifiers, oscillators, and pulse circuits.
- PHY 3722** **NS 3 (3,0) W**  
**Electronics:** PR: PHY 2041; CR: MAP 3305, or C.I. Basic DC and AC circuit analysis. Theory of semiconductors and transistors, rectification, amplification, oscillation. Small signal analysis and circuit design.
- PHY 3752C** **NS 4 (3,3) F,S**  
**Physics of Scientific Instruments:** PR: PHY 2052C or PHY 2042C or C.I. A lecture-laboratory course in fundamentals of physics related particularly to the application, operation and limitations of various scientific instruments.
- PHY 3802L** **NS 4 (0,6)**  
**Intermediate Physics Laboratory I:** PR: PHY 2042 or C.I. Laboratory work in basic measurements of physical constants; intermediate level experiments in electronics, modern physics, nuclear physics, optics and solid state physics.
- PHY 3803L** **NS 4 (0,6)**  
**Intermediate Physics Laboratory II:** PR: PHY 3802 or C.I. Continuation of physics laboratory instruction.
- PHY 4424** **NS 3 (3,0)**  
**Optics:** PR: PHY 3421 or C.I. Refraction, interference, diffraction, polarization, scattering, absorption and stimulated emission, spectroscopy and lasers.
- PHY 4604** **NS 3 (3,0)**  
**Quantum Mechanics:** PR: PHY 3046 or C.I. A study of the postulates of quantum mechanics, the Schrodinger equation, and an introduction to the statistics of many particle systems.
- POS 2041** **SS 4 (4,0) F,W,S,Su**  
**American National Government:** A study of the dynamics of American national government, including its structure, organization, powers, and procedures.
- POS 3001** **SS 4 (4,0) F,W,S,Su**  
**Principles of Political Science:** Basic concepts of political science and its development as a field with emphasis on analysis of major approaches to the study of politics.

- POS 3122** **SS 4 (4,0) F,S**  
**State Government:** A comparative study of American state governments and political processes with emphasis on Florida.
- POS 3173** **SS 4 (4,0) S**  
**Southern Politics:** Study of Southern Politics past and present. Emphasis on patterns of change and recent developments affecting the South and the Nation.
- POS 3233** **SS 4 (4,0) F**  
**Public Opinion:** A substantive and theoretical study of public opinion; patterns of distribution, opinion formation, opinion measurement, policy linkages.
- POS 3235** **SS 4 (4,0) F**  
**Mass Media and Politics:** Influence of media on campaigns, public officials, public opinion, and definition of political news.
- POS 3253** **SS 4 (4,0) F,W**  
**Contemporary Revolution and Political Violence:** Theory and analysis of Political violence and fundamental change of political systems. Analysis of revolutions, counterrevolutions and conditions of political turmoil in the contemporary world.
- POS 3273** **SS 4 (4,0) W**  
**Electoral Behavior:** Theoretical and substantive inquiry into U.S. electoral behavior: a study of the factors influencing participation and voting behavior.
- POS 3413** **SS 4 (4,0) F**  
**The American Presidency:** PR: POS 2041 or C.I. Examination of the presidency as an institution and of the evolution in status, powers, administrative responsibilities, leadership and decision-making roles.
- POS 3424** **SS 4 (4,0) W**  
**Congress and the Legislative Process:** PR: POS 2041 or C.I. The nature, role, and functions of the legislative process; the dynamics of executive-legislative relations and resultant problems.
- POS 3443** **SS 4 (4,0) W,F**  
**Political Parties and Processes:** PR: POS 2041 or C.I. Study of American politics with major emphasis upon the role, organization, functions, and processes of parties in the American political system.
- POS 3463** **SS 4 (4,0) W**  
**Interest Groups and Political Movements:** A study of interest groups in the American political process and a comparison of group political objectives and strategies.
- POS 3703** **SS 4 (4,0) F,W,S,Su**  
**Scope and Methods of Political Science:** Introduction to the Scope and Methodology of political analysis. Includes scope of the discipline, research design, and methods.
- POS 4142** **SS 4 (4,0) S**  
**Metropolitan Politics:** Analysis of political patterns, processes and issues in American communities.
- POS 4155** **SS 4 (4,0) S**  
**Policy Problems of Metropolitan Areas:** Provides an in-depth analysis of two or three basic policy areas; for example, transportation, education, welfare, crime, etc.
- POS 4204** **SS 4 (4,0) S**  
**Political Behavior:** PR: POS 2041, 3001 or C.I. A substantive and theoretical study of individual and group political behavior in the American political system.
- POS 4209** **SS 4 (4,0)**  
**Political Sociology:** Sociological analysis of political and para-political groups; socio-economic variables of voting behavior: power elites, societies and systems of government.
- POS 4246** **SS 4 (4,0) S**  
**Political Socialization:** PR: POS 2041 or C.I. Analysis of the quality and function of the recruitment and socialization processes. Identification of the agents and processes of political socialization.

- POS 4261** **SS 4 (4,0) W**  
**Political Corruption:** An examination of official corruption at each level of government.
- POS 4265** **SS 4 (4,0) W**  
**Power and Policy in the United States:** PR: POS 2041. Examination of the bases and exercise of Political power in the United States. Emphasis is on socio-economic-political linkages to the policy-making process.
- POS 4284** **SS 4 (4,0) F**  
**Judicial Behavior:** Study of Judicial Behavior emphasizing the role of courts as a bureaucratic structure. Consideration will be given to comparative judicial systems.
- POS 4444** **SS 4 (4,0) S**  
**Political Party Behavior:** Analysis of selected topics in political party behavior including: changes in Southern politics; urban parties; political campaigns; the changing electorate.
- POS 4603** **SS 4 (4,0) F**  
**American Constitutional Law:** PR: POS 2041 or C.I. The impact of judicial decision-making upon the growth of American political institutions and processes.
- POS 4604** **SS 4 (4,0) W**  
**American Constitutional Law:** PR: POS 2041 or C.I. The role of judiciary in the focusing and refinement of individual rights and civil liberties in American society.
- POS 4941** **SS 4-15 (0,4-15) F,W,S,Su**  
**Political Science Internship:** PR: C.I. Internship working with National, State, County or Municipal government. Assignments with selected civic organization, elected or appointed official.
- POS 6127** **SS 4 (4,0)**  
**Issues in State Public Policy:** PR: C.I. Analysis of policy issues occurring in the American states with attention given to single state and comparative studies.
- POS 6157** **SS 4 (4,0)**  
**Issues in Urban Public Policy:** PR: C.I. Study of characteristic policy issues which arise in urban political systems, and of various public responses to those issues.
- POS 6237** **SS 4 (4,0)**  
**Public Opinion and Policy Formation:** PR: C.I. A substantive and theoretical approach to understanding relationships between public opinion and public policy, including opinion/policy linkage models as well as opinion measurement.
- POS 6743** **SS 4 (4,0)**  
**Statistical Models for Policy Analysis:** PR: POS 6734 or C.I. Applications and analysis of problems in the use of statistical data. Emphasis on methods of analysis.
- POS 6746** **SS 4 (4,0) W**  
**Quantitative Methods:** Methods of research design and execution, including both conceptualization and data gathering.
- POT 3302** **SS 4 (4,0)**  
**Modern Political Ideologies:** A study of modern ideologies since the French Revolution including liberalism, conservatism, capitalism and socialism.
- POT 4003** **SS 4 (4,0) F**  
**Political Theory:** PR: POS 2041 or C.I. Examination of various normative approaches to the study of political science, stressing contemporary developments in the field.
- POT 4013** **SS 4 (4,0) F**  
**Ancient and Medieval Political Philosophy:** Study of the development of political and social ideas in Western thought from early Greece to the Renaissance.
- POT 4044** **SS 4 (4,0) W**  
**Early Modern Political Philosophy:** Study of the development of political and social ideas from the Renaissance to the 19th century. May be taken independently of POT 4013.
- POT 4054** **SS 4 (4,0) S**  
**Contemporary Political Philosophy:** Study of contemporary Western political and social thought in the 19th and 20th Centuries. May be taken independently of POT 4013 and 4044.

- POT 4314** **SS 4 (4,0) F**  
**Contemporary Democratic Theory:** PR: POS 2041 or C.I. Study of democratic theories emphasizing elitist theories, participatory democracy, citizen participation and the relevance of empirical research to democratic theory.
- PPE 3003** **SS 4 (4,0)**  
**Personality Theory:** PR: PSY 2013 and PSY 2014. A survey of theory and research on the development of personality characteristics, Lec.-Lab.
- PSB 3002** **SS 4 (4,0)**  
**Physiological Psychology:** PR: PSY 2013 and PSY 2014. A survey of the physiological basis of behavior emphasizing the relationship between the nervous system and behavior. Lecture and demonstration/lab.
- PSB 3442** **SS 4 (4,0)**  
**Drugs and Behavior:** PR: PSY 2013. Effects of certain drugs upon the nervous system, behavior, and society. Causes of drug abuse and impact on mental health.
- PSB 4013C** **SS 5 (3,2)**  
**Introduction to Neuropsychology:** PR: PSB 3002. Study of brain function with particular emphasis on human behavior. Lec.-Lab.
- PSB 4103C** **SS 4 (4,0)**  
**Biofeedback Applications:** PR: EXP 3403, PSB 3002, EAB 3703 and CLP 3302. Introduction to theory, instrumentation, research and clinical application of biofeedback. Training in use of biofeedback equipment.
- PSB 6446** **SS 4 (4,0) F**  
**Advanced Abnormal and Clinical Psychopharmacology:** PR: Graduate admission, and C.I. Diagnosis of psychopathology & drug treatment of these disorders. Examination of the efficacy of psychoactive drugs.
- PSC 1512** **NS 4 (4,0)**  
**Physical Science:** Familiarization with the basic laws governing our universe and man's physical environment. Satisfies science requirements of the Environmental Studies Program.
- PSY 2013** **SS 4 (4,0) F,W,S,Su**  
**General Psychology:** The basic principles, theories, and methods of contemporary psychology.
- PSY 2014** **SS 4 (4,0) F,W,S,Su**  
**General Psychology:** PR: PSY 2013. A continuation of PSY 2013.
- PSY 3023** **SS 2 (2,0)**  
**Careers in Psychology:** An examination of various career opportunities in Psychology including educational entry requirements, and related professional issues.
- PSY 3302** **SS 4 (4,0)**  
**Psychological Measurement:** PR: PSY 2013, 2014 and STA 2014. Theory of test construction and consideration of selected measures of psychological characteristics.
- PSY 3951** **SS 4 (1,8) F,W,S,Su**  
**Undergraduate Field Work:** PR: C.I. Placement in a community agency for supervised experience in applications of psychology to community problems.
- PSY 4204** **SS 4 (4,0)**  
**Statistical Methods in Psychology:** PR: One course in statistics. Standard scores, confidence intervals, sampling distributions, hypothesis testing, correlation and regression as applied to research in psychology.
- PSY 4214** **SS 4 (3,2) F,W,S,Su**  
**Research Methods in Psychology:** PR: PSY 2013, 2014 and STA 2014. Investigation of experimental designs and research methods utilized in Psychology. Analysis and preparation of experimental designs in Psychology.
- PSY 4604** **SS 4 (4,0)**  
**History and Systems of Psychology:** PR: EXP 3404 and PPE 3003. Historical development of psychology with emphasis on classical theoretical positions.

- PSY 6216** **SS 4 (3,2) F**  
**Advanced Research Methodology I:** Logic and procedures of psychological research and evaluation; application of experimental and non-experimental techniques in analyzing psychological variables; review of relevant psychological research.
- PSY 6217** **SS 4 (3,2) W**  
**Advanced Research Methodology II:** PR: PSY 6216. Structure and planning of complex psychological experiments; internal and external validity; application of advanced experimental procedures in analyzing psychological variables; review of relevant psychological research.
- PSY 6218** **SS 4 (3,2) S**  
**Advanced Research Methodology III:** PR: PSY 6216, 6217. Advanced procedures for examining the relationships among psychological variables; review of relevant psychological research studies.
- PSY 6308** **SS 4**  
**Psychological Testing I:** PR: Graduate admission and C.I. Theory of test construction including test reliability and validity.
- PSY 6318** **SS 4 (4,0) W**  
**Applied Testing and Selection:** PR: Graduation admission and C.I. Issues in selecting employees and an examination of currently used tests in industry.
- PSY 6946** **SS 2 (2,0)**  
**Psychology Practicum:** PR: Graduate admission and C.I. Supervised practice in assessment and interm intervention techniques. (May be repeated for credit).
- PUP 3314** **SS 4 (4,0) S**  
**Minorities in American Politics:** The roles of minority groups in the American political system; their impact upon the legislative, executive, and judicial processes.
- PUP 4003** **SS 4 (4,0) S**  
**American Public Policy:** PR: POS 2041 or C.I. The American policy-making process with a focus upon contemporary problems including the malapportionment of societal power and social conflict.
- PUP 4323** **SS 4 (4,0) S**  
**Women and Politics:** An examination of demands for change in the social, political and economic status of women and the policy response of the system.
- PUP 4503** **SS 4 (4,0) W**  
**Government and Science:** PR: C.I. Examination of the interface between science and government. Primary focus is upon governmental support for science, social accountability, and the role of the scientist—policy-maker.
- PUP 4602** **SS 4 (4,0) S**  
**Politics of Health:** PR: C.I. Analysis of federal-state public health policies. Primary focus upon the political processes and relevant political decision makers, interest group interventions including public personnel and consumers, and policy outcomes.
- PUP 5056** **SS 4 (4,0)**  
**Contemporary American Problems:** PR: Senior or graduate standing. A public policy analysis of current problems encountered within the American system and an examination of policy alternatives.
- PUP 6004** **SS 4 (4,0)**  
**The Environment of Policy Making:** PR: C.I. Consideration of the impact of the intra-systematic and extra-systematic environment upon the decision making process.
- PUP 6007** **SS 4 (4,0)**  
**Public Policy and Political Analysis:** PR: C.I. An analysis of governmental action and models useful in policy analysis, stressing the pressures and procedures in decision making in a dynamic federal system.
- PUP 6057** **SS 4 (4,0)**  
**Issues in National Public Policy:** PR: C.I. Study of the establishment and evaluation of selected national issues and priorities, means of implementation, and impacts of government programs.

- PUP 6058** **SS 4 (4,0)**  
**Issues in International Public Policy:** PR: C.I. Analysis of domestic and foreign inputs influencing foreign policy formulation and execution, with extended analysis devoted to executive structures and decision making behavior.
- PUP 6717** **SS 4 (4,0)**  
**Issues in Economic Public Policy:** Examination from the perspectives of organization and politics of selected fiscal and monetary policy issues; emphasis on the limitations economic factors place upon policy making.
- PUR 4000** **SS 4 (4,0)**  
**Public Relations:** Principles and practice of public relations, the means of gaining publicity and influencing people.
- PUR 4101** **SS 4 (2,2) S,Su**  
**Publications Layout and Preparation:** Layout and preparation of public relations publications for profit and non-profit organizations.
- PUR 4800** **SS 4 (4,0)**  
**Public Relations Campaign:** PR: PUR 4000. Planning and execution of a public relations campaign; use of research and coordinations of elements of the campaign.
- PUR 6401** **SS 4 (4,0)**  
**Governmental Public Relations:** PR: C.I. Emphasis study of campaign planning, image and public affairs activities of political aspirants and executive governmental offices at the city, county, state and federal levels.
- QMB 3600** **BA 4 (4,0)**  
**Quantitative Analysis I:** PR: MAC 3233. Mathematical models and techniques used in the formulation, solution and analysis of business problems. Linear, non-linear and dynamic programming, network, decision tree analysis; queuing, inventory, and decision theory. Computer applications.
- QMB 3602** **BA 4 (4,0)**  
**Quantitative Analysis II:** PR: QMB 3600. Continuation of QMB 3600.
- QMB 4031** **BA 4 (4,0)**  
**Quantitative Applications to Business Problems:** PR: QMB 3602 or C.I. Applications of quantitative analysis to complex business problems. Emphasis is on analyzing specific problem situations and deciding on appropriate quantitative techniques to be applied.
- QMB 4841** **BA 4 (4,0)**  
**Business Simulation:** PR: MAC 3233. An introduction to simulating various aspects of the business enterprise. Topics include the simulation modeling process, applicable simulation languages, and model formulation, analysis, and validation.
- REA 1505** **HFA 2 (2,0) F,W,S**  
**Vocabulary Study:** A word skills course for students wishing to improve their vocabulary.
- RED 3012** **ED 3 (3,0) F,W,S**  
**Basic Foundations of Reading:** PR: Admission to Phase II or C.I. Introduction to reading; principles, procedures and organization, current practices; analysis of reading materials.
- RED 3310** **ED 3 (3,0) F,W,S**  
**Reading in the Elementary School:** PR: RED 3012. Study of specific techniques and materials used to develop reading comprehension vocabulary and rate; organizing and directing a reading lesson; materials for instruction; individual differences; evaluation procedures.
- RED 4333** **ED 3 (3,0) F,W,S,Su**  
**Teaching Reading in the Content Areas:** PR: Senior standing or C.I. Study of techniques and materials to develop reading comprehension, vocabulary, rate and study skills of secondary students in content areas; diagnosis; evaluation.
- RED 4519** **ED 3 (3,1) F,W,S,Su**  
**Diagnosis and Corrective Instruction in Reading:** PR: RED 3012 and RED 3310 or equivalent. Diagnosis and corrective teaching with the disabled reader; factors related to reading problems—physiological, psychological, cultural, materials for corrective instruction.



- RED 5147** **ED 4 (4,0) W,Su**  
**Developmental Reading:** PR: Rank III Certificate or C.I. Principles, procedures, organization, and current practices in the elementary reading program. Materials and methods of instruction.
- RED 5514** **ED 4 (4,1) F,S,Su**  
**Classroom Diagnosis and Treatment of Reading Difficulties:** PR: RED 5147 or equivalent. Classroom diagnosis and corrective teaching in reading; instructional materials.
- RED 6116** **ED 3 (3,0) S,Su**  
**Trends in Reading Education:** PR: Rank III Certificate or C.I. Analysis of historical development and current trends; management systems; instructional strategies and investigation of research.
- RED 6236** **ED 3 (3,0)**  
**Reading Guidance for Adolescents:** PR: Rank III Certificate or C.I. Review of literary works appropriate for young people to provide insight into psychological problems common to teenagers.
- RED 6335** **ED 3 (3,0) F,W,S,Su**  
**Reading in the Content Areas:** PR: Rank III Certificate or C.I. Identification and evaluation of reading skills, diagnosis of reading problems, and development of methods and materials to increase student reading performance.
- RED 6515** **ED 6 (1,6) Su**  
**Corrective Reading for Classroom Teachers:** PR: RED 5514 or equivalent. A practicum for classroom teachers with emphasis on group diagnostic reading tests and classroom corrective techniques.
- RED 6746** **ED 3 (3,0) W**  
**Management of Reading Programs:** Overview of K-12 reading programs which meet needs of all students; curriculum design and construction; role of reading consultants; program analysis; in-service programs.
- RED 6805** **ED 2-4 (0,2-4) W**  
**Clinical Reading Practicum II:** PR: RED 6516. A continuation of RED 6516. May be repeated for credit.
- RED 6835** **ED 2-4 (0,2-4) S**  
**Clinical Reading Practicum III:** PR: RED 6805. A continuation of RED 6805. May be repeated for credit.
- RED 6845** **ED 3 (3,0) F**  
**Clinical Diagnosis and Remediation of Reading Difficulties:** PR: RED 6515 or C.I. Administration and interpretation of individual tests; factors contributing to reading difficulties; case studies; instructional techniques for the severely disabled reader. Take concurrently with RED 6846.
- RED 6846** **ED 2-4 (0,2-4) F**  
**Clinical Reading Practicum I:** PR: RED 6515 or C.I. Clinical evaluation and remediation of severely disabled readers in a laboratory setting. Parent interviews; case reports. May be repeated. Take concurrently with RED 6845.
- REE 3040** **BA 4 (4,0)**  
**Real Estate:** PR: Junior standing, ACC 2324, ECO 2023 and ECO 2013. Basic principles of real estate ownership, its use and transfer, brokerage, management, legislation, and importance to the economy.
- REL 2302** **HFA 4 (4,0) F**  
**World Religions:** Basic features and historical background of Confucianism, Taoism, Hinduism, Buddhism, Judaism, Christianity, and Islam.
- REL 3203** **HFA 4 (4,0) F,W,S**  
**The Hebrew and Christian Heritage:** The Old and New Testaments as religious documents; their socio-political context in the Ancient Near East.
- REL 3314** **HFA 4 (4,0) S**  
**Religions of China and Japan:** A study of basic concepts in Shinto, Taoism, Confucianism, Buddhism, and Zen.
- REL 3342** **HFA 4 (4,0) W**  
**Hinduism:** A study of Hindu religious ideas and scriptures; the Vedas, the Upanishads, the Bhagvat Gita, and later works.

- REL 3353** **HFA 4 (4,0) F**  
**Islam:** An inquiry into the foundations and development of Islamic thought from earliest times to modern in various parts of the world.
- REL 3432** **HFA (4) (4,0) S**  
**The Prophets: Ancient and Modern:** Ancient prophets (e.g. Moses, Buddha, Jesus, Mohammed) as originators of new faiths; the role of men like Ghandi and Mao as prophets in the modern world.
- REL 4182** **HFA 4 (4,0) W**  
**Mysticism:** The models and aims of the mystic, both Eastern and Western, as seen in art, music, and literature.
- REL 4184** **HFA 4 (4,0) S**  
**Mythology:** An examination and interpretation of myths dealing with gods, divine heroes, and sacred events.
- REL 4420** **HFA 4 (4,0) W**  
**Modern Theology:** Explores the revolution in religious thought prompted by Kierkegaard, Tillich, Barth, Niebuhr, and Bonhoeffer, and the secular trends suggested by Nietzsche, Altizer, Cox, and Hamilton.
- RET 3026** **HRP 3 (3,0) F**  
**Introduction to Respiratory Equipment:** Fundamental functions of basic inhalation therapy equipment. Systems of oxygen storage. Safety precautions. Preparation for clinical practice.
- RET 3027L** **HRP 1 (0,3) F**  
**Respiratory Equipment Laboratory:** CR: RET 3026. Operation, cleaning, sterilization, maintenance and repair of basic respiratory therapy equipment.
- RET 3031** **HRP 1 (1,2)**  
**Introduction to Clinical Practice:** PR: C.I. Introduction to the clinical facilities and patient care; patient-therapist relationships; isolation and infection control techniques, preparation of medication, hospital safety practice.
- RET 3244** **HRP 3 (3,0) S**  
**Cardiopulmonary Resuscitation:** PR: C.I. Resuscitative procedures in respiratory and cardiac emergencies. Airway maintenance. Defibrillation and post-resuscitative care. Drowning, underwater, aviation, and space physiology.
- RET 3245L** **HRP 1 (0,3) S**  
**Cardiopulmonary Resuscitation Laboratory:** CR: RET 3244. Adult intubation and available airways. Defibrillation practice.
- RET 3264** **HRP 3 (3,0) W**  
**Respiratory Equipment Function:** PR: RET 3026. Function and use of mechanical ventilators. Evaluation of patient condition prior to and during weaning.
- RET 3265L** **HRP 1 (0,3) W**  
**Respiratory Equipment Function Laboratory:** CR: RET 3264. Operation, use and maintenance of mechanical ventilators.
- RET 3442** **HRP 3 (3,0)**  
**Cardiopulmonary Instrumentation:** PR: C.I. Blood gas analyzers, oxygen analyzers pulmonary function equipment, physiologic monitoring, electrical safety and quality control. Lecture-demonstration.
- RET 3483** **HRP 3 (3,0) W**  
**Respiratory Disease Assessment:** PR: APB 3263, CR: RET 3293. Physical Examinations of the chest, demonstrating equipment use, methods and theory.
- RET 3874** **HRP 5 (1,16) W**  
**Clinical Practice I:** PR: C.I. Basic equipment and patient care. IPPB Therapy. Cleaning, sterilization and maintenance procedures. Suction techniques.
- RET 3875** **HRP 5 (1,16) S**  
**Clinical Practice II:** PR: C.I. Patient care with advanced respiratory equipment. Tracheostomy care. Introduction to cardiopulmonary resuscitation. Introduction to critical care units.

- RET 4034** **HRP 2 (3,0) F**  
**Problems in Patient Management:** PR: RET 3483. CR: RET 4935. Problem oriented approach to the treatment of chronic and acute respiratory disorders.
- RET 4104** **HRP 2 (2,0) S**  
**Respiratory Therapy Education Systems:** PR: EVT 3365. Survey of the formal education of the respiratory therapist.
- RET 4262** **HRP 3 (3,0) S**  
**Neonatal Mechanical Ventilation:** PR: RET 3264 & RET 4714. Mechanical ventilators and their use in neonatal respiratory care.
- RET 4284** **HRP 3 (3,0) S**  
**Cardiopulmonary Therapy:** PR: RET 4935. Advanced procedures and topics used in respiratory therapy. Treatment of patients with cardiopulmonary diseases.
- RET 4285L** **HRP 1 (0,3) S**  
**Cardiopulmonary Therapy Laboratory:** CR: RET 4284. Cardiac catheterization, extracorporeal circulation, student case studies.
- RET 4414** **HRP 3 (3,0) F**  
**Pulmonary Function Studies:** PR: C.I. Detailed procedures and tests to provide objective information for diagnosis of respiratory diseases.
- RET 4415L** **HRP 1 (0,3) F**  
**Pulmonary Function Laboratory:** CR: RET 4414. Testing procedures and experiments in normal and abnormal respiratory functions.
- RET 4616** **HRP 3 (3,0)**  
**Cardiopulmonary Services:** PR: MAN 3010 and AHS; or C.I. An introduction to the management of cardiopulmonary services in the hospital. Development of procedure and policy manuals, staffing, leadership techniques and J.C.H.A. Standards.
- RET 4714** **HRP 3 (3,0) W**  
**Respiratory Pediatrics:** PR: C.I. Lung development, prenatal physiology, gas transport in the fetus and newborn. IRDS, congenital anomalies, infections, resuscitation of the neonate, childhood respiratory diseases.
- RET 4876** **HRP 5 (1,16) Su**  
**Clinical Practice III:** PR: RET 3875. Advanced life support techniques and equipment. Care of patients with more complex diseases.
- RET 4877** **HRP 5 (1,16) F**  
**Clinical Practice IV:** PR: RET 4876. Pulmonary Function Studies. Role of the department administrator. Introduction to pediatric & neonatal critical care.
- RET 4878** **HRP 5 (1,16) W**  
**Clinical Practice V:** PR: RET 4877. Neonatal Medicine & Pediatrics. Pulmonary rehabilitation. Advanced diagnostic techniques & treatment. Advanced adult & neonatal critical care.
- RET 4934** **HRP 1 (0,3) W**  
**Selected Topics in Respiratory Therapy:** CR: RET 4935. Patient rounds and discussion regarding current trends and techniques in respiratory care.
- RET 4935** **HRP 3 (3,0) W**  
**Chest Medicine:** PR: APB 3263. Disease states treated medically in conjunction with one or more modalities of respiratory therapy.
- RMI 3015** **BA 4 (4,0)**  
**Risk and Insurance:** PR: Junior Standing or C.I. Principles of identifying and handling risk with particular emphasis on insurance. Includes all of the general types of property, liability, life, health and social insurance.
- RTE 2002** **HRP 3 (3,0) S**  
**Fundamentals of Radiologic Technology:** PR: PHY 2051 or C.I. Fundamentals of radiation, terminology, procedures, protection, patient care, professional ethics and medical-legal aspects of radiology. History of the profession.

- RTE 3156** **HRP 3 (3,0) S**  
**Pathophysiology:** PR: C.I. The study of radiologic science in the diagnosis and treatment of disease.
- RTE 3387C** **HRP 3 (2,2) S**  
**Radiologic Physics II:** PR: RTE 3684 or C.I. The clinical application of physics in radiation medicine: detection, measurement techniques and equipment; radiation protection and safety; state and federal regulations; radiation biology.
- RTE 3412C** **HRP 4 (3,2)**  
**Principles of Radiographic Exposure I:** PR: Admission to the professional phase of the RTE program or C.I. The principles controlling the production of an optimum radiograph.
- RET 3457C** **HRP 3 (2,2) Su**  
**Principles of Radiographic Exposure II:** PR: RTE 3412C or C.I. Continuation of RTE 3412C with emphasis on exposure technique, evaluation and use of imaging accessories; processing techniques.
- RTE 3528C** **HRP 4 (3,2) Su**  
**Radiographic Procedures I:** PR: Admission to the professional phase of the RAS program or C.I. A study of patient positioning, equipment manipulation and quality evaluation of radiographic studies of the appendicular skeleton, chest, and abdomen.
- RTE 3549** **HRP 4 (3,2) F**  
**Radiographic Procedures II:** PR: RTE 3528 or C.I. A study of patient positioning, equipment manipulation and quality evaluation of radiographic studies of the organ systems, skull and facial bones, contrast studies.
- RTE 3566** **HRP 3 (3,0) W**  
**Special Radiographic Procedures:** PR: RTE 3549 or C.I. A study of specialized imaging procedures in angiography, neurology, tomography, xerography, computerized imaging, ultrasound and thermography.
- RTE 3684C** **HRP 4 (3,2) W**  
**Radiologic Physics I:** Physics of radiation including production, interaction of radiation with matter, imaging modalities.
- RTE 3806** **HRP 6 (0,30) F**  
**Clinical Education II:** PR: RTE 3831 or C.I. Supervised clinical practice in radiographic procedures, radiation protection, patient care, equipment orientation, radiographic technic, dark-room procedures, and film quality evaluation.
- RTE 3816** **HRP 6 (0,30) W**  
**Clinical Education III:** PR: RTE 3816 or C.I. Supervised clinical practice in performing radiographic procedures with emphasis on competency evaluation of routine radiographic examinations.
- RTE 3826** **HRP 6 (0,30) S**  
**Clinical Education IV:** PR: RTE 3816 or C.I. Supervised clinical practice in radiographic procedures; competency evaluation of routine radiographic examinations.
- RTE 3831** **HRP 2 (2,20) Su**  
**Clinical Education Orientation:** PR: Admission to the professional phase of the RAS program RTE 2002. Orientation to patient care, introduction to areas involving the field of radiology and clinical orientation to the function of radiologic technologists. Chest, abdomen, radiography.
- RTE 4205C** **HRP 3 (1,6) F**  
**Quality Assurance Management:** PR: RTE 4569 or C.I. A study of radiological equipment and imaging modalities for specialization, selection and installation of equipment designed for specific functions, quality assurance testing.
- RTE 4207** **HRP 3 (3,0) Su**  
**Quantitative Methods in Radiology Management:** PR: ACC 2324 or C.I. Concepts of radiology department management emphasizing financing, budgeting; medical records; billing; leasing, purchasing of equipment; inventory; data storage and retrieval systems; determination of cost effectiveness.
- RTE 4209** **HRP 4 (4,0) F**  
**Radiological Administrative Practice:** PR: MAN 3010 or C.I. Administration of radiology depart-

ments: operation standards, personnel management; facility planning; economic feasibility; community hospital board-administration-professional interrelationships; regulatory agencies; medical legal aspects.

**RTE 4209L** **HRP 2 (0,20) S**  
**Directed Study in Clinical Management:** PR: RTE 4209 or C.I. Directed activity in the management of a radiology department.

**RTE 4253** **HRP 3 (3,0) F**  
**Curriculum Planning in Radiologic Technology:** PR: EVT 4066 and 4380 or C.I. A study of curriculum design and approval process for hospital based and college based radiologic programs, including the self-study development.

**RTE 4256** **HRP 4 (4,0) W**  
**Analysis of Instruction in Radiologic Technology:** PR: EVT 4066 and 4380 or C.I. Development of teaching aids, audio visuals, learning packets. Course development; questioning strategies, evaluation of didactic/clinical activities; design of continuing and inservice education programs.

**RTE 4256L** **HRP 2 (0,20)**  
**Directed Study in Clinical Education:** PR: RTE 4256 or C.I. Directed activity in classroom instruction in radiologic technology.

**RTE 4569** **HRP 3 (2,3) Su**  
**Imaging in Diagnostic Radiography:** PR: RTE 3387 or C.I. Quality assurance programs with evaluation of radiographic imaging modalities and information retrieval systems. Tube output evaluation, sensitometry, and flow studies.

**RTE 4569L** **HRP 2 (0,10) W**  
**Directed Clinical Study Imaging:** PR: RTE 4569 or C.I. Clinical application of testing, data collection and interpretation of results for quality assurance programs in diagnostic radiography.

**RTE 4843** **HRP 4 (0,20) F**  
**Clinical Education VI:** PR: RTE 4876 or C.I. Advanced clinical practice in diagnostic radiography, radiation therapy, nuclear medicine, special procedures, and other diagnostic imaging.

**RTE 4853** **HRP 4 (0,20) W**  
**Clinical Education VII:** PR: C.I. Advanced clinical practice in diagnostic radiography, radiation therapy, nuclear medicine, special procedures, computerized tomography and ultrasound.

**RTE 4876** **HRP 6 (0,30) Su**  
**Clinical Education V:** PR: C.I. Supervised clinical practice; emphasis on competency evaluation of routine radiographic examinations.

**RTE 4945** **HRP 4 (0,20) S**  
**Clinical Education VIII:** PR: C.I. Advanced clinical practice in diagnostic ultrasound, angiographic procedures, computerized tomography and final competency testing.

**RTV 3000** **SS 4 (4,0) F,W,S,Su**  
**Foundations of Broadcasting:** Nature of the media, the mechanics of operation, history, economics, programming, and internal and external control.

**RTV 3200** **SS 4 (1,3)**  
**Broadcast Techniques:** PR: RTV 3000. Introduction to the radio and television studio. Utilization of studio operating techniques and equipment (consoles, recorders, cameras, etc.) for use in educational and commercial broadcasting. Lab TBA.

**RTV 3210** **SS 4 (4,0)**  
**Radio Production:** PR: RTV 3200 or C.I. The production of music (live and recorded), talk, interview, discussion, sports, and documentary including performance (talent and announcing) and direction.

**RTV 3220** **SS 4 (4,0)**  
**Television Production:** PR: RTV 3200 or C.I. Emphasis on the coordination of talent, visuals, audio and lighting with the dramatic values of the presentation.

**RTV 3230** **SS 4 (4,0)**  
**Oral Communication for Television:** PR: SPC 1014. Practice and performance speech preparation and delivery for television. Types of speeches include television demonstrative, television stimulative and the television persuasive. Speeches televised in television laboratory.

- RTV 3231** **SS 4 (4,0)**  
**Broadcast Announcing and Performance:** PR: RTV 3200 or C.I. A study of communication problems on camera and microphone. Development of performance skills in announcing, interviewing, narrating, and reporting. Lab TBA.
- RTV 3240** **SS 4 (4,0)**  
**Television Scene Design:** PR: RTV 3200 or C.I. Study, application, and creative utilization of staging, lighting, graphics, special effects, costuming, and make-up for television production.
- RTV 3300** **SS 4 (4,0)**  
**Broadcast Journalism I:** PR: JOU 3100 or C.I. Historical, legal, and quasi-legal influences on broadcast news; introduction to news sources, writing and interviewing techniques for radio-television news.
- RTV 3310** **SS 4 (4,0) W**  
**Filming for Television:** Principles of 8mm and 16mm film production in the television industry.
- RTV 3501** **SS 4 (4,0)**  
**Broadcast Continuity and Programming I:** Preparation of written commercial copy for radio and television. Examination of program practices and traffic systems.
- RTV 4206** **SS 4 (4,0)**  
**Television Directing:** PR: RTV 3220. Preparation and directing of programs with emphasis on dramatic values of composition.
- RTV 4301** **SS 4 (4,0)**  
**Broadcast Journalism II:** PR: RTV 3300. Principles and practice of news preparation for electronic media.
- RTV 4311** **SS 4 (4,0)**  
**Television Film Documentary:** Historical developments, styles, and production techniques of the television film documentary.
- RTV 4312** **SS 4 (1,3)**  
**Television Film Production:** PR: RTV 3310 or C.I. Preparation of filmed documentaries, public service and commercial productions. (Laboratory hours to be arranged).
- RTV 4402** **SS 4 (4,0)**  
**Broadcast Criticism:** PR: RTV 3000 for RTV majors. Evaluation and criticism of past and present radio and television programs, policies, and critics. Concentration on the problem of criteria development.
- RTV 4403** **SS 4 (4,0)**  
**Radio, Television and Society.** PR: RTV 3000 for RTV majors. A study of the impact of electronic media upon the habits, customs and thinking of our times. Considerations of internal media problems.
- RTV 4404** **SS 4 (4,0)**  
**International Broadcasting:** Comparative analysis of national broadcast systems. World broadcasting as a social, political and economic force.
- RTV 4502** **SS 4 (4,0)**  
**Broadcast Continuity and Programming II:** PR: RTV 3501 or C.I. Preparation of documentaries and dramatic writing for television and radio.
- RTV 4600** **SS 4 (4,0)**  
**Educational Television:** A study of radio and television in public education. Emphasis on the development and status of public broadcasting.
- RTV 4605** **SS 4 (4,0)**  
**Instructional Broadcasting:** Learning theory applied to the creation, production, and dissemination of lessons via electronic media. Introduction to and practicum in radio and television studios as well as lesson presentation.
- RTV 4700** **SS 4 (4,0)**  
**Broadcast Regulations:** PR: RTV 3000. Federal, state, local and self-regulator agencies and practices which govern electronic media.

- RTV 4800** **SS 4 (4,0)**  
**Broadcast Management:** PR: RTV 4700. Consideration of broadcast management problems in station operations at the local, regional, and national levels.
- RTV 6306** **SS 4 (4,0)**  
**Problems in Broadcast Journalism:** PR: C.I. Analysis of electronic journalistic policies, sources and control of information.
- RUS 1100** **HFA 4 (4,1) F**  
**Elementary Russian Language and Civilization:** Designed to initiate the student to the major language skills; listening, speaking, reading, and writing.
- RUS 1101** **HFA 4 (4,1) W**  
**Elementary Russian Language and Civilization:** PR: RUS 1100 or equivalent. Continuation of RUS 1100.
- RUS 1102** **HFA 4 (4,1) S**  
**Elementary Russian Language and Civilization:** PR: RUS 1101 or equivalent. Continuation of RUS 1101.
- RUS 2230** **HFA 4 (4,1) F**  
**Intermediate Russian Language and Civilization:** PR: RUS 1102 or equivalent. Designed to continue development of language skills at the intermediate level, together with a review of grammar, idiomatic expressions, extensive reading, and further study of Russian culture.
- RUS 2231** **HFA 4 (4,1) W**  
**Intermediate Russian Language and Civilization:** PR: RUS 2230 or equivalent. Continuation of RUS 2230.
- RUS 2232** **HFA 4 (4,1) S**  
**Intermediate Russian Language and Civilization:** PR: RUS 2231 or equivalent. Continuation of RUS 2231 with greater emphasis on Russian civilization from the Middle Ages to the present.
- RUS 3240** **HFA 4 (4,0)**  
**Russian Conversation:** PR: RUS 2232 or equivalent. Development of skills in conversation and comprehension through practice. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- RUS 3420** **HFA 4 (4,0)**  
**Russian Composition:** PR: RUS 2232 or equivalent. Development of skills in composition. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- SCE 3310** **ED 3 (3,0) F,W,S**  
**Teaching Science in Elementary School:** PR: Admission to Phase II or C.I. Selected concepts; organizing for instruction; techniques; evaluation procedures.
- SCE 3330** **ED 4 (3,2)**  
**Science Instructional Analysis:** PR: EDF 3255 and EDF 3603. Course objectives for a school curriculum and methods and materials.
- SCE 4111** **ED 3 (2,1) F,W,S,Su**  
**Science Programs in the Elementary School:** PR: Admission to Phase II or C.I. Overview of the instructional program in natural sciences; philosophy and objectives; special problems; instructional materials; current research and new curricula.
- SCE 4374** **ED 3 (1,2) W**  
**Science Laboratory Teaching:** PR: ESE 3940 or C.I. Practices and procedures for managing science laboratories in contemporary school science programs.
- SCE 5238** **ED 3 (3,0)**  
**Inquiry in the Sciences:** PR: Rank III Certificate or C.I. Teaching science by inquiry in the secondary school and development of inquiry lessons.
- SCE 6125** **ED 3 (2,1)**  
**Intermediate School Science Programs:** PR: Rank III Certificate or C.I. Basic concepts, philosophies and formats of modern middle and junior high school science programs.
- SCE 6239** **ED 3 (3,0)**  
**Laboratory Programs in Science Education:** PR: Rank III Certificate or C.I. Design, organizations

and development of special materials and projects for science independent study centers.

**SCE 6616** **ED 4 (3,2) W,S,Su**

**Trends in Elementary School Education:** PR: Rank III Certificate or C.I. Study of historical development and current trends; analysis of science curricula, materials.

**SED 3335** **ED 4 (3,2)**

**Speech Instructional Analysis:** PR: EDF 3255 and EDF 3603. Study of instructional programs in speech; objectives, materials, techniques, organization for instruction, evaluation procedures, current research.

**SED 4371** **SS 3 (3,0) W**

**Directing Extracurricular Speech Activities:** Debate, extemporaneous speech and other speech events; selection and training of contestants; interschool and intramural speech activities.

**SED 5670** **SS 4 (4,0) F**

**Speech Communication Instruction:** PR: C.I. Communication models as teaching devices, design of communication curricula, instructional media with speech practicum and classroom criticism and evaluation.

**SOC 2000** **SS 4 (4,0) F,W,S,Su**

**General Sociology:** The basic principles, theories and methods of contemporary sociology.

**SOC 2001** **SS 4 (4,0) F,W,S,Su**

**General Sociology:** PR: SOC 2000. Continuation of SOC 2000.

**SOC 3020** **SS 4 (4,0) F,W,S,Su**

**Social Problems:** Analysis of major social problems such as mental disorders, sexual deviance, racial discrimination, poverty, community disorganization, and violence.

**SOC 3110** **SS 4 (4,0) W,Su**

**Sociology of Deviant Behavior:** PR: SOC 2000. An examination of the nature, types and societal reactions to deviant behavior; special emphasis on the process of stigmatization and the emergence of deviant subcultures.

**SOC 3130** **SS 4 (4,0) W,S,**

**Juvenile Delinquency:** Types of delinquency behavior found among juveniles; possible causes and ways society attempts to treat the various forms of delinquency.

**SOC 3150** **SS 4 (4,0) F,S**

**Criminology:** PR: SOC 2000. Chief causes of anti-social behavior and current methods of prevention and reform. Effects of heredity and environment, prevalence of delinquency and crime, penal institutions.

**SOC 3161** **SS 4 (4,0) F**

**Sociology of Alcoholism:** Introduction to the nature of alcoholism and review of its impact on society.

**SOC 3201** **SS 4 (4,0) F**

**Social Institutions:** PR: SOC 2000. Social institutions, social differentiation, and social control, with emphasis on American and other modern societies.

**SOC 3251** **SS 4 (4,0) F**

**Sociology of Mental Illness:** A sociological examination of mental illness as a social problem; legal aspects of mental illness, and the mental health professions.

**SOC 3310** **SS 4 (4,0) F,S**

**Urban Sociology:** PR: SOC 2000. Historical roots of urbanization. Analysis and impact of community change on social organizations in modern industrial societies.

**SOC 3320** **SS 4 (4,0) F**

**Rural Sociology:** PR: SOC 2000. Rural American life, its resources, and the problems of changing patterns of rural social structure.

**SOC 3402** **SS 4 (4,0) W**

**Social Change: A Historical and Theoretical Approach:** PR: SOC 2000. Concerned with the context and essential sources of social development and change.



- SOC 3410** **SS 4 (4,0) S**  
**Social Stratification:** PR: SOC 2000. Study of class, status and power; cultural variations in stratification systems; patterns of mobility and change.
- SOC 3500** **SS 4, F,S**  
**Research Methods:** PR: Introductory Sociology and one other Sociology course.
- SOC 3521** **SS 4 F**  
**Research Methods and Statistics:** PR: Two Sociology courses.
- SOC 3600** **SS 4 (4,0) F,S**  
**Modern Sociological Thought:** PR: SOC 2000. A study of major European and American contributors to modern sociology since World War II.
- SOC 3640** **SS 4 (4,0) F,S**  
**The Development of Social Thought:** PR: SOC 2000. An overview of theories concerning the nature of man as a "social being." The nature of society from the beginnings of the scientific study of man's life to World War II.
- SOC 3705** **SS 4 (4,0)**  
**Contemporary Women and Society:** An interpretation of the changing role of woman in contemporary American society.
- SOC 3720** **SS 4 (4,0)**  
**Afro-American Social Problems:** Current Afro-American social problems in the United States.
- SOC 3745** **SS 4 (4,0) F,Su**  
**Race and Ethnic Minorities in the United States:** Theoretical analysis of the emergence, maintenance and disruption of patterns of racial and ethnic stratification.
- SOC 3834** **SS 4 (4,0)**  
**Sex Roles in Modern Society:** The traditional and changing roles of women and men viewed in a cross-cultural perspective.
- SOC 3850** **SS 4 (4,0) F,S**  
**Collective Behavior:** PR: SOC 2000. Analysis of relatively unstructured social situations, mobs, crowds, etc.
- SOC 3871** **SS 4 (4,0) F,S**  
**Modern Organizations:** Study of structure of social organizations, especially work organizations. Organizational and motivation theories and the social psychology of leadership and decision making are addressed.
- SOC 3881** **SS 4 (4,0)**  
**Sociology of Adolescence:** An examination of the transition to adulthood in various societies with primary emphasis on initiation and on the contemporary American problems centering around the "adolescent crisis."
- SOC 4160** **SS 4 (4,0)**  
**Sociology of Drug Abuse:** PR: SOC 2000 or C.I. Analysis of the socio-culture elements of the drug culture.
- SOC 4221** **SS 4 (4,0)**  
**Political Sociology:** Sociological analysis of political and para-political groups; socioeconomic variables of voting behavior; power elites; societies and systems of government.
- SOC 4230** **SS 4 (4,0) W**  
**Medical Sociology:** Analysis of patient beliefs and behavior, health practitioners, the social organization of hospitals and health services, contemporary problems in the delivery of health care.
- SOC 4241** **SS 4 (4,0)**  
**Sociology of Aging:** PR: SOC 2000. Sociological aspects of aging in America.
- SOC 4262** **SS 4 (4,0)**  
**Sociology of Occupations and Professions:** An examination of occupations and professions from the sociological perspective. Emphasized are professional and occupational socialization, marginality and choice as well as women and work.

- SOC 4281** **SS 4 (4,0)**  
**Sociology of Education:** PR: SOC 2000. This course examines the sociological dimensions of the educational institutions including the impact of the social structure on learning and the role of education in social change.
- SOC 4334** **SS 4 (4,0) S**  
**Soviet Sociology:** Analysis of relations of various Soviet institutions such as education, religion, and the Communist Party to society; class structure and social problems.
- SOC 4432** **SS 4 (4,0)**  
**Contemporary Social Movements:** PR: SOC 2000. Causes and effects of various social movements in American society compared to large-scale upheavals throughout the West. Considers various theories of explanation.
- SOC 4463** **SS 4 (4,0)**  
**Social Change in Developing Areas:** PR: SOC 2000 and one course in statistics. A study of growth problems in the emerging nations of Africa and Latin America.
- SOC 4507** **SS 4 W,Su**  
**Data Analysis:** PR: Research Methods and Statistics.
- SOC 4820** **SS 4 (4,0) W,Su**  
**Sociology of Small Groups:** PR: SOC 2000. Study of interaction among individuals in social groups. Emphasis on the impact of interpersonal behavior on attitude dynamics, personality and self-concept, and decision-making.
- SOC 5937** **SS 4 (4,0)**  
**Proseminar in Sociology:** PR: Six hours of Sociology and graduate level status or C.I. Study of culture, groups, demography, stratification, and culture and personality.
- SOP 3004** **SS 4 (4,0)**  
**Social Psychology:** PR: PSY 2013 and PSY 2014. Effects of social situations and social variables on the behavior of individuals.
- SOP 3706** **SS 4 (4,0) W**  
**Television and Behavior:** The influence of television viewing on such behaviors as scholastic achievement, aggression, prosocial behavior, sex-role and racial stereotypes, and consumer behavior.
- SOP 3724** **SS 4 (4,0)**  
**The Psychology of Racial Prejudice:** Examination of literature relating to prejudice toward ethnic groups; effects of racism on individuals, development and maintenance of prejudice, and possible ways to reduce prejudice.
- SOP 3742** **SS 4**  
**Psychology of Women:** Examination of the psychological impact of changing sex roles on women in modern society. Topics include childrearing, working women, sex differences in personality and cognition.
- SOP 3772** **SS 4**  
**Sexual Behavior:** Physiological, social, and clinical aspects of human sexuality.
- SOW 3104** **SS 4 (4,0) F,W**  
**Human Growth and Development:** PR: SOC 2000. Development of an understanding of individual physical, mental and emotional growth from birth to death, recognizing social and cultural influences on the development.
- SOW 3203** **SS 3 (3,0) W,Su**  
**Social Welfare: A Social Institution:** Social welfare as an institution, and as related to current objectives and programs. Oriented to non-majors.
- SOW 3225** **SS 4 (4,0) W,S**  
**Social Welfare Programs and Policies:** PR: SOW 3302. The role of federal, state, and local government in Social Welfare. Laws, policy formulation, administration, and current issues will be examined.
- SOW 3302** **SS 4 (4,0) F,W**  
**Introduction to Social Work and Social Welfare:** PR: SOC 2000. A theoretical consideration of the

concepts and methods of social work practice and the values, activities and roles of social workers in various practice settings.

**SOW 3313** **SS 4 (4,0) S,Su**  
**Social Work with Individuals and Families:** PR: SOW 3302. Covers theories and related practice skills, including the client-worker relationship, case analysis and case management.

**SOW 3322** **SS 4 (4,0) F,Su**  
**Social Group Work Skills:** PR SOW 3302, 3350. Examines theories of social work with groups, and related practice skills.

**SOW 3332** **SS 4 (4,0) S,Su**  
**Community Organization:** PR SOW 3302. Examines theories, principles, strategies of community work and related practice skills.

**SOW 3350** **SS 3 (3,0) S, Su**  
**Interviewing in Social Work Practice:** PR: SOW 3302. Examination of interviewing as the primary medium through which social work is practiced with emphasis on the development of methods, skills and techniques.

**SOW 3602** **SS 4 (4,0) F**  
**Health Services and Social Work:** PR: SOW 3203 or 3302. Examines the role of social worker in medical, mental health, and psychiatric settings. Emphasizes the social worker as a member of the services delivery team.

**SOW 4323** **SS 4 (4,0) F,W**  
**Communication Skills for Social Work Practice:** PR: SOW 3302. Systematic approach to group problem-solving models.

**SOW 4381** **SS 4 (4,0) FW**  
**Agency Management:** PR: SOW 3302 or SOW 3203. Basic administrative practice including setting objectives, writing performance standards, preparing budgets and decision making.

**SOW 4431** **SS 4 (4,0) W,S**  
**Evaluating Social Service Programs:** PR: SOW 3302, 4912. Designed to provide basic techniques and skills to assess and monitor social service programs.

**SOW 4510** **SS 12 (0,12) W,S**  
**Field Experience:** PR: SOW 3302, SOW 3225, SOW 3226, SOW 3104, SOW 3350. Supervised experiences in agencies relating theory with practice. To be taken concurrently with SOW 4522—36 hours/week in agency. May extend 2 quarters C.I.

**SOW 4522** **SS 4 (4,0) F,S**  
**Field Experience Seminar:** Four hour weekly seminar. To be taken concurrently with SOW 4510—Field Experience. May be taken over two (2) quarters with consent of instructor.

**SPA 2112** **HRP 6 (4,2)**  
**Basic Phonetics:** Physiological descriptions and visual notation of speech sounds. Transcription of deviant speech patterns and regional dialects.

**SPA 3001** **HRP 4 (4,0) F**  
**Introduction to Communicative Disorders:** Etiology, symptoms, and methods of diagnosing and treating communicative disorders. For beginning and prospective majors in Communicative Disorders.

**SPA 3003** **HRP 4 (4,0) W**  
**Detection and Prevention of Speech and Hearing Problems:** An elective course for non-majors. Live and videotaped demonstrations of speech and hearing cases. Specific suggestions for prevention.

**SPA 3052** **HRP 3 (3,0) F,W,S,Su**  
**Clinical Observation and Practice:** PR: SPA 3550. C.I. Observation and supervised participation in speech pathology and audiology in the university clinic and local clinics.

**SPA 3101** **HRP 5 (5,2) F**  
**Physiological Bases of Speech and Hearing:** PR: SPA 3001. An introduction to the anatomical, physiological, and physical elements underlying the communication process.

- SPA 3550** **HRP 6 (4,2)**  
**Clinical Methods in Communicative Disorders:** PR: SPA 3001. An analysis of techniques and methods of planning and executing therapeutic programs for communicatively handicapped individuals.
- SPA 4030** **HRP 6 (4,2) S**  
**Basic Audiology:** Introduction to physics of sound, anatomy of hearing mechanism, pure tone audiometry, hearing aids, problems of the hearing handicapped. Clinical skills development will be required.
- SPA 4130** **HRP 5 (5,0)**  
**Basic Instrumentation for Communicative Disorders:** PR: C.I. Calibration and instrumentation for communicative sciences. Basics of circuitry as well as operation and minor repairs of audiological and speech pathology.
- SPA 4201** **HRP 6 (4,2)**  
**Communicative Disorders: Articulation:** PR: SPA 2112, 3001, 3101, 3550, 4030, LIN 3710. Survey of articulation disorders and their management. Clinical skills development will be required.
- SPA 4210** **HRP 6 (4,2)**  
**Communicative Disorders: Voice:** PR: SPA 3101, SPA 3550. Survey of voice disorders and their management. Observations required.
- SPA 4222** **HRP 6 (4,2)**  
**Communicative Disorders: Stuttering:** PR: SPA 2112, 3001, 3101, 3550, 4030, LIN 3710. Survey of rhythm disorders and their management. Clinical skills development will be required.
- SPA 4250** **HRP 6, (4,2)**  
**Organic Speech Disorders:** PR: LIN 2200, SPA 3101, LIN 3710. Survey of organically based communication disorders and their management. Observations required.
- SPA 4323** **HRP 6 (4,2)**  
**Aural Habilitation:** PR: SPA 4030. Principles and procedures in the utilization of residual hearing, auditory training, speech reading and the use of hearing aids.
- SPA 4402** **HRP 6 (4,2) F**  
**Communicative Disorders: Language:** PR: SPA 3101, LIN 3710, SPA 3001. Survey of language disorders and their management. Observations required.
- SPA 4552** **HRP 6 (4,2)**  
**Differential Diagnosis in Communication Disorders:** PR: SPA 2112, 3001, 3101, 3550, 4030, LIN 3710. Lectures, readings, observations and participation in the evaluative procedures concerned with speech and language skills of the handicapped. Clinical skills developmental required.
- SPA 5005** **HRP 4 (4,0)**  
**Survey of Communicative Disorders:** A survey of speech, language and hearing disorders for habilitative personnel and other interested professionals.
- SPA 5305** **HRP 6 (4,2)**  
**Auditory Problems of Infants and Children:** PR: C.I. Development of sensory perception, auditory deprivation tests, and testing techniques with the neonate, infant, and young child.
- SPA 5307** **HRP 4 (4,0) W**  
**Audiology:** PR: C.I. Advanced techniques in pure-tone speech, and automatic audiometry, with emphasis on interpretation of audiograms and differential diagnosis. Practice required.
- SPA 5354** **HRP 4 (4,0)**  
**Hearing Conservation:** PR: C.I. Information regarding the prevention of hearing loss and the establishing of hearing conservation programs.
- SPA 5556** **HRP 5 (5,0)**  
**Communicative Disorders Programs for the Public Schools:** PR: C.I. Methods and techniques for the public school clinician; including organization of public school programs. Observations required.
- SPA 6204** **HRP 4 (4,0) W**  
**Advanced Studies in Communicative Disorders: Articulation:** Specific diagnostic techniques and therapeutic procedures for articulation disorders, muscular dysfunction disorders including dysarthria, apraxia, cleft palate and cerebral palsy.

- SPA 6214** **HRP 3 (3,0)**  
**Speech of the Laryngectomee:** PR: C.I. Basic principles and practice for developing and improving the speech of the laryngectomee.
- SPA 6345** **HRP 4 (4,0)**  
**Auditory Amplification:** Physical characteristics and clinical aspects of auditory amplifiers for the hearing handicapped. Clinical observations required.
- SPA 6354** **HRP 4 (4,0)**  
**Industrial Audiology:** PR: C.I. A study of the problems of noise pollution in the community. Emphasis is placed upon psychological and physiological problems associated with noise. Noise studies performed.
- SPA 6410** **HRP 4 (4,0)**  
**Aphasia:** PR: C.I. Etiology, diagnostic techniques and management of the adult aphasic patient.
- SPA 6505** **HRP 1-15 (0, 1-15)**  
**Clinical Practice in Language and Speech Pathology:** PR: SPA 4550 and C.I. Advanced clinical practice in diagnosis and treatment of communicative disorders. May be repeated with change of content, not to exceed a total of 15 hours.
- SPC 1005** **SS 1 (0,1) F,W,S,Su**  
**Speech Improvement Laboratory:** Individual and group practice for students with speech fright and delivery problems. Recommended for all students who want to improve their speaking skills.
- SPC 1014** **SS 3 (3,0) F,W,S,Su**  
**Fundamentals of Oral Communication:** Use of the body and voice; participation in various speaking situations; planning, organizing, and delivering public speeches.
- SPC 3050** **HRP 4 (4,0) W**  
**Voice and Articulation:** An introduction for non-majors to the anatomy of voice and speech production. Analysis of voice and articulation of each student. Exercise for individual improvement.
- SPC 3250** **SS 4 (4,0) F,W,S**  
**Speech and Human Relations:** Introduction to semantics; symbols and meaning and the relationship with human behavior.
- SPC 3301** **SS 4 (4,0) W**  
**Interpersonal Communication:** Nature of the communication process; variables affecting the process and the individuals involved. Analysis of communication models, interactant behavior, situational cues, verbal and non-verbal messages.
- SPC 3410** **SS 2 (2,0) F,W**  
**Parliamentary Procedure:** Principles and rules governing participation and leadership in the conduct of formal business meetings.
- SPC 3425** **SS 4 (4,0) Su**  
**Group Interaction and Decision Making:** A study of small group processes. Attention is given to problem solving, leadership emergence, conformity behavior, and group member role responsibilities.
- SPC 3445** **SS 4 (4,0) F,S**  
**Leadership Through Oral Communication:** A theoretical and practical investigation of leadership in oral communication situations, principles of parliamentary law, and approaches to problem solving.
- SPC 3511** **SS 4 (4,0) F**  
**Argumentation and Debate:** PR: SPC 1014 or C.I. Study and practice in the preparation and delivery of argumentative speeches emphasizing argument, evidence and organization.
- SPC 3542** **SS 4 (4,0) W,Su**  
**Persuasion: Motivation:** PR: SPC 1014 or C.I. A study of motivational factors involved in persuasive speaking to secure belief and action.
- SPC 3601** **SS 4 (4,0) S**  
**Platform Speaking:** PR: SPC 1014 or C.I. Advanced training in selecting and organizing materials for various types of speeches. Practice in thinking and speaking before audiences; contemporary speeches as examples.

- SPC 3605** **SS 4 (4,0) F**  
**Speech Composition:** PR: SPC 1014 or C.I. Study and practice in the preparation and delivery of speeches from manuscripts with emphasis on the development of oral style.
- SPC 4330** **SS 4 (4,0) F,S**  
**Nonverbal Communication:** Review of current behavioral research in such areas as proxemics, kinesics, physical characteristics, tactile communication and paralanguage. Lectures are supplemented by frequent nonverbal exercises.
- SPC 4350** **SS 4 (4,0) W**  
**Studies in Listening:** Analysis of current trends, professional literature, and resource materials bearing upon the teaching of listening. Practice in listening; preparing listening experiences; oral and written reports.
- SPC 4440** **SS 4 (4,0)**  
**Group Dynamics:** A study of human behavior in group situations.
- SPC 4540** **SS 4 (4,0) S**  
**Attitudes and Communication:** A survey of the immediate and direct ways in which persuasive communications and social groups come to influence attitudes.
- SPC 4633** **SS 4 (4,0)**  
**Rhetoric of Social and Political Action:** PR: Junior Standing. A critical investigation of social and political speaking within contemporary American society including agitative rhetoric of political dissent.
- SPC 5200** **SS 4 (4,0) W**  
**Evolution of Communication Theory:** General Survey: Major communication trends from classical era to the present. Comparison of Aristotelian and non-Aristotelian rhetorics. Contributions to principal figures will be discussed.
- SPC 5547** **SS 4 (4,0) S**  
**Persuasion: Attitude Formation and Change:** A survey of the immediate and direct ways in which persuasive communications and social groups come to influence attitudes.
- SPC 6219** **SS 4 (4,0) F**  
**Modern Communication Theory:** Comparative analysis of theories and models of human communication; behavioral systems, encoding and decoding processes, interaction variables, and social context.
- SPC 6442** **SS 4 (4,0) W**  
**Small Group Communication:** PR: C.I. A study of communication and its effect on small group behavior.
- SPC 6545** **SS 4 (4,0)**  
**Studies in Persuasion:** Survey and evaluation of experimental research in persuasion.
- SPN 1100** **HFA 4 (4,1) F**  
**Elementary Spanish Language and Civilization:** Designed to initiate the student to the major language skills; listening, speaking, reading, and writing.
- SPN 1101** **HFA 4 (4,1) W**  
**Elementary Spanish Language and Civilization:** PR: SPN 1100 or equivalent. Continuation of SPN 1100.
- SPN 1102** **HFA 4 (4,1) S**  
**Elementary Spanish Lanugage and Civilization:** PR: SPN 1101 or equivalent. Continuation of SPN 1101.
- SPN 2230** **HFA 4 (4,1) F**  
**Intermediate Spanish Language and Civilization:** PR: SPN 1102 or equivalent. Designed to continue development of language skills at the intermediate level.
- SPN 2231** **HFA 4 (4,1) W**  
**Intermediate Spanish Language and Civilization:** PR: SPN 2230 or equivalent. Continuation of SPN 2230.

- SPN 2232** **HFA 4 (4,1) S**  
**Intermediate Spanish Language and Civilization:** PR: SPN 2231 or equivalent. Continuation of SPN 2231 with greater emphasis on Spanish civilization from the Middle Ages to the present.
- SPN 3240** **HFA 4 (4,0) F**  
**Spanish Conversation:** PR: SPN 2232 or equivalent. Development of skills in conversation and comprehension through practice. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- SPN 3420** **HFA 4 (4,0)**  
**Spanish Composition:** PR: SPN 2232 or equivalent. Development of skills in composition. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- SPN 4410** **HFA 4 (4,0)**  
**Advanced Spanish Conversation:** PR: SPN 3240. Advanced conversation on directed topics from various disciplines: Literature, art, psychology, philosophy, music, business and the sciences.
- SPN 4420** **HFA 4 (4,0)**  
**Advanced Spanish Composition:** PR: SPN 3420. Readings and written imitations of modern literary styles in the form of themes, sketches, poems and original stories.
- SPN 4450** **HFA 4 (4,0)**  
**Stylistics:** PR: SPN 3240 or equivalent. An intense study of textual criticism. An examination of the relationship between language and literature, explications and linguistic analysis of literary texts.
- SPN 4510** **HFA 4 (4,0) F**  
**Spanish Civilization and Culture:** PR: SPN 3240 or SPN 3420. A study of Spanish civilization and culture from Pre-Roman times to the present. Conducted in Spanish.
- SPN 4520** **HFA 4 (4,0) S**  
**Latin American Civilization and Culture:** PR: SPN 3240 or SPN 3420. An overview of the currents in Latin American culture and civilization from the Pre-Columbian period to the present. Conducted in Spanish.
- SPS 6936** **SS 4 (4,0)**  
**Problems in School Psychology:** PR: Graduate admission and C.I. An investigation of some of the major problems facing psychologists working in school systems.
- SPS 6949** **SS 4-12**  
**School Psychology Internship:** PR: Graduate admission, 2nd year status and C.I. Supervised placement in school setting.
- SPW 3100** **HFA 4 (4,0) F**  
**Survey of Spanish Literature I:** PR: SPN 2232 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance and Baroque.
- SPW 3101** **HFA 4 (4,0) W**  
**Survey of Spanish Literature II:** PR: SPN 2232 or equivalent. Main literary currents and works of the eighteenth and nineteenth centuries.
- SPW 3102** **HFA 4 (4,0) S**  
**Survey of Spanish Literature III:** PR: SPN 2232 or equivalent. Main literary currents and works from the Generation of 1898 to the present.
- SPW 3130** **HFA 4 (4,0)**  
**Survey of Latin-American Literature I:** PR: SPN 2232 or equivalent. Main literary currents and works from the colonial period to the nineteenth century.
- SPW 3131** **HFA 4 (4,0)**  
**Survey of Latin-American Literature II:** PR: SPN 2232 or equivalent. Main literary currents and works of the nineteenth century.
- SPW 3132** **HFA 4 (4,0)**  
**Survey of Latin-American Literature III:** PR: SPN 2232 or equivalent. Main literary currents and works of the twentieth century.
- SPW 3370** **HFA 4 (4,0)**  
**Spanish Short Story:** A study of representatives 19th and 20th Century Spanish short stories and

their authors.

- SPW 4310** **HFA 4 (4,0)**  
**Golden Age Drama:** PR: SPW 3100. A study of the drama of the Golden Age with special emphasis on Lope, Tirso, Alarcon, and Calderon. The controversies on the Spanish theatre and its influence abroad.
- SPW 4316** **HFA 4 (4,0) F**  
**Nineteenth Century Spanish Literature:** PR: SPW 3101. A study of the representative authors and works in Spanish Romanticism, Realism and Naturalism.
- SPW 4480** **HFA 4 (4,0) W**  
**Twentieth Century Spanish Literature:** PR: SPW 3102. A study of the representative authors and works in the drama and novel.
- SPW 4600** **HFA 4 (4,0)**  
**Cervantes I:** PR: SPW 3101. *Don Quixote* (Part I).
- SPW 4601** **HFA 4 (4,0)**  
**Cervantes II:** PR: SPW 3101. *Don Quixote* (Part II).
- SPW 4725** **HFA 4 (4,0)**  
**The Generation of 1898:** PR: SWP 3102. A study of the Generation's main authors and their works.
- SSE 3312** **ED 3 (3,0) F,W,S**  
**Teaching Social Science in the Elementary School:** PR: Admission to Phase II or C.I. Selected themes, problems, and concepts; organizing for instruction; techniques; evaluation procedures.
- SSE 3333** **ED 4 (3,2)**  
**Social Science Instructional Analysis:** PR: EDF 3255 and EDF 3603. Study of instructional programs in Social Sciences; objectives; materials; techniques; organization of instruction; evaluation procedures; current research.
- SSE 4113** **ED 3 (3,0) F,W,S,Su**  
**Social Science Programs in the Elementary School:** PR: Admission to Phase II or C.I. Instructional program in the social sciences; philosophy and objectives; instructional materials; current research and new curricula.
- SSE 4633** **ED 3 (3,0)**  
**Trends in Secondary School Social Science:** PR: Senior standing. Major social science concepts as they relate to contemporary school programs.
- SSE 5334** **ED 3 (3,0)**  
**Inquiry in the Social Studies:** PR: Rank III Certificate or C.I. Teaching by inquiry in the new social studies with a development of inquiry episodes.
- SSE 6384L** **ED 3 (3,0)**  
**Laboratory Programs in the Social Sciences:** PR: SSE 5334 or C.I. Design organization and development of special materials related to selected conceptual specializations.
- SSE 6617** **ED 4 (4,0) F,W,Su**  
**Trends in Elementary School Social Studies Education:** PR: Rank III Certificate or C.I. Historical development and current trends, strategies for inquiry instruction, intellectual, social, and personal dimensions of social studies.
- SSE 6636** **ED 3 (3,0)**  
**Contemporary Social Science Education:** PR: Rank III Certificate or C.I. A survey of recent developments and contemporary programs in all areas of the social sciences.
- STA 2014** **NS 4 (4,0) F,W,S**  
**Principles of Statistics:** Introduction to statistical concepts in modern society. Basic principles, frequency distributions, measures of location and dispersion, probability, probability distributions, statistical inference.
- STA 3023** **NS 4 (4,0) F,W,S**  
**Fundamentals of Probability and Statistics:** PR: Four years of high school mathematics or MAC 1104 or MAC 1142 or equivalent. Course introducing probability and statistical inference including: estimation, hypothesis testing, binomial and normal distributions, small samples, regression and correlation.



- STA 3032** **EN & NS 3 (3,0) F,W,S,Su**  
**Probability and Statistics for Engineers:** PR: MAC 3313. Axioms of probability; combinatorial and geometrical probability; probability distributions; measures of location and dispersion; sampling and sampling distributions; estimation and tests of hypotheses; engineering applications.
- STA 3664** **NS 3 (3,0)**  
**Statistical Quality Control:** PR: One course in statistics or C.I. Statistical concepts and methods applied to the control of quality of manufactured products.
- STA 4102** **NS 4 (4,0)**  
**Computer Processing of Statistical Data:** PR: STA 4164 and knowledge of a programming language. Use of packages such as SAS, BMD, SPSS for data validation, description and analysis: regression, analysis of variance and covariance, principal components, factor analysis.
- STA 4163** **NS 4 (4,0) F**  
**Statistical Methods I:** PR: One course in statistics. Statistics in research; methods of analyzing data; statistical concepts and models; estimation; tests hypotheses; regression and correlation; analysis of variance and covariance; statistical design.
- STA 4164** **NS 4 (4,0) W**  
**Statistical Methods II:** PR: STA 4163. A continuation of STA 4163.
- STA 4202** **NS 4 (4,0)**  
**Experimental Design:** PR: STA 4164 or C.I. Methods of constructing and analyzing designs for experimental investigations; concepts of blocking; randomization, and replication; confounding in factorial experiments; incomplete block designs.
- STA 4203** **NS 4 (4,0)**  
**Regression Analysis:** PR: MAS 3113 and STA 4163. Least squares techniques in multiple regression; matrix methods; general linear model, residual analysis transformations; orthogonal polynomials; stepwise and stagewise procedures; non-linear estimation.
- STA 4222** **NS 3 (3,0)**  
**Sample Survey Methods:** PR: STA 4163 or C.I. Constructing and analyzing designs for survey investigations; simple random, stratified, multistage, and multiphase sampling designs; questionnaire construction; methods of estimation; techniques of survey investigation.
- STA 4321** **NS 4 (4,0) F**  
**Statistical Theory I:** PR: MAC 3313 or C.I. Sample space, probability axioms, distribution functions, sampling distributions, interval estimation, hypothesis testing, multivariate normal, regression and correlation, linear models, analysis of variance, distribution-free methods.
- STA 4322** **NS 4 (4,0) W**  
**Statistical Theory II:** PR: STA 4321. Continuation of STA 4321.
- STA 4442** **NS 3 (3,0)**  
**Probability Theory and Applications:** PR: MAC 3314. Axioms of probability, discrete and continuous random variables, characteristics functions, Markov chains, recurrent events, sequences of random variables, random walk, simple stochastic processes.
- STA 4502** **NS 4 (4,0)**  
**Nonparametric Statistical Methods:** PR: STA 4163 or C.I. Statistical methods that do not require specification of a parametric distribution. Rank tests, tests for randomness and independence, order statistics.
- STA 5156** **EN 3 (3,0)**  
**Probability for Engineers:** PR: STA 3032. Engineering application of probability, combinatorial analysis, sample space, events, probability discrete and continuous random variables, and probability distribution.
- STA 5206** **NS 3 (3,0)**  
**Statistical Analysis:** PR: A course in statistical methods and a course in mathematical statistics. This course relates the ideas of probability and statistics, including distribution theory, to the collection and analysis of data.
- STA 5326** **EN 3 (3,0)**  
**Statistics for Engineers:** PR: STA 3032. Engineering application of statistics, significance tests and confidence intervals, tests of hypotheses, simple and multiple regression and correlation.

- STA 5447** **NS 3 (3,0)**  
**Applied Probability:** PR: A course in mathematical statistics. Axioms of probability theory. Discrete random variables and probability distributions; Demoivre-Laplace limit theorem; laws of large numbers; Markov chains; emphasis on applications.
- STA 5707** **NS 4 (4,0)**  
**Multivariate Statistical Methods:** PR: STA 4164 or equivalent. Concepts of statistical relationships among several variables and methods for inference. Multivariate normal, Hotelling  $T^2$ , multivariate analysis of variance, canonical correlation, principal components, factor analysis.
- STA 6807** **NS 4 (4,0)**  
**Computational Methods/Stochastic Systems:** PR: CNM 5142. Stochastic models; Markov chains Poisson processes, birth and death models; queues; inventory models, simulation; Monte Carlo methods; game theory.
- STD 3151** **ED 3 (3,0)**  
**Career Development Analysis:** Analysis of job core areas. Community, state and federal information services, educational requirements and employment prospects in selected areas. Application and job interview techniques.
- SUR 3101C** **EN 3 (2,3)**  
**Surveying:** CR: Junior Standing. Theory and field practice in surveying measurements, and the reduction and adjustment of field data.
- THE 1002** **HFA 4 (2,2) F,W**  
**Study of Drama and Theatre:** Nature of drama and the theatre and basic principles of play analysis.
- THE 1020** **HFA 4 (3,2) F**  
**Theatre Survey:** PR: None. An overview of the theatre arts for Theatre majors.
- THE 2071** **HFA 4 (4,0) W,Su**  
**Cinema Survey:** A broad cultural approach to cinema as theatre. Satisfies Section II, Cultural and Historical Foundations, in the Environmental Studies Program.
- THE 2925** **HFA 3 (0,15) F,W,S,Su**  
**Theatre Practicum I:** PR: C.I. Open to all students interested in participating in productions of University Theatre. May be repeated for credit.
- THE 3112** **HFA 3 (3,0)**  
**Theatre History I:** Development of theatre art from the earliest times through the sixteenth century.
- THE 3113** **HFA 3 (3,0)**  
**Theatre History II:** Development of theatre art from the Renaissance through the neo-classic period to the beginning of the Romantic Period.
- THE 3114** **HFA 3 (3,0)**  
**Theatre History III:** Development of theatre art from the Romantic period to the modern theatre.
- THE 3230** **HFA 3 (3,0) W**  
**Theatrical Costuming:** Analysis, design and construction of costumes in the theatre.
- THE 3251** **HFA 4 (4,0) F**  
**History of the Motion Picture:** Development of the film industry; its social and economic impact.
- THE 3312** **HFA 4 (4,0)**  
**Drama Development I:** Dramatic works in translation of the Greeks, Roman and Medieval Theatre.
- THE 3313** **HFA 4 (4,0)**  
**Drama Development II:** A study of dramatic works in translation of the 16th and 17th centuries. Continuation of THE 3312.
- THE 3314** **HFA 4 (4,0)**  
**Drama Development III:** Continuation of THE 3312-3313, tracing the development of dramatic works in translation of the 18th and 19th centuries.
- THE 3925** **HFA 3 (0,15)**  
**Theatre Practicum II:** PR: THE 2925 or C.I. Primarily an activity course. Student will serve in some

position of responsibility in production. May be repeated for credit.

**THE 4072** **HFA 4 (4,0)**

**Principles of Motion Picture Art:** PR: THE 3251 or C.I. Aesthetic consideration of the motion picture as art. May be repeated for credit.

**THE 4073** **HFA 4 (2,4)**

**Film Production:** PR: C.I. Professional 16mm film production, scripting, production, sound, and editing of theatre department ensemble films. May be repeated twice.

**THE 4075** **HFA 4 (4,0)**

**Modern Motion Picture Technique:** PR: THE 3251 or C.I. An examination of the techniques of motion picture as art; directing, acting, editing, writing, cinematography.

**THE 4170** **HFA 4 (2,3) S**

**Experimental Theatre:** Practical experiences in experimental Theatrical techniques. May be repeated for credit.

**THE 4201** **HFA 4 (4,0) W, even years**

**American Theatre I:** An examination of the influences on the American drama and theatre. Trends in theatrical production and dramatic types.

**THE 4202** **HFA 4 (4,0) S, even years**

**American Theatre II:** A continuation of THE 4201, with emphasis placed upon the aesthetic and literary development of the theatre in this century.

**THE 4300** **HFA 3 (3,0) odd years**

**Drama Studies:** Reading, analysis and discussion of drama in English (excluding Shakespeare). May be repeated for credit.

**THE 4375** **HFA 3 (3,0)**

**Contemporary Theatre and Drama:** Trends in theatrical production and dramatic literature in Italy, France, Germany, Russia and the Scandinavian countries.

**THE 4530** **HFA 3 (3,0)**

**Dramatic Criticism:** PR: C.I. Nature of past and present criticism of the drama.

**THE 4800** **HFA 4 (3,1) S**

**Children's Theatre:** An introduction to the bases of theatre production for and by young people. Production of children's theatre, play selection, costumes, management, and touring.

**TPA 2082** **HFA 4 (2,4) S**

**Stage Properties:** Design, construction, operation, and management of stage properties.

**TPA 2210** **HFA 4 (4,0) W**

**Technical Theatre Production:** History, theory, and practice of technical theatre production.

**TPA 2211** **HFA 4 (2,4) W**

**Stage Carpentry:** Construction, painting, rigging, and operation of stage scenery.

**TPA 3060** **HFA 4 (4,0)**

**Scene Design I:** Study of and practice of scene design; perspective drawing, fundamentals of design, and techniques of scene painting. (Service on crew as required).

**TPA 3220** **HFA 4 (4,0)**

**Stage Lighting:** PR: Junior standing. Study of stage lighting techniques, practices, and equipment. (Service on light is required.)

**TPA 3250** **HFA 3 (3,0) 4**

**Make-up Technique:** Analysis & design of make-up.

**TPA 4061** **HFA 4 (4,0)**

**Scene Design II:** A continuation of TPA 3060 in which the emphasis is placed on independent planning and execution of scene designs.

**TPP 2110** **HFA 4 (4,0)**

**Acting I:** Prepares the beginning actor for University Theatre Productions. Emphasis on movement, motivation, voice, characterizational techniques, makeup, and other basic requirements for acting.

- TPP 3111** **HFA 4 (2,3) W**  
**Acting II:** PR: TPP 2110 or C.I. Continuation of TPP 2110 with emphasis on characterization. May be repeated for credit.
- TPP 3121** **HFA 4 (2,4) W**  
**Improvisation and Mime:** PR: TPP 2110 or C.I. Inquiry into and practice of mime and improvisatory theatre production.
- TPP 3310** **HFA 4 (2,3) W**  
**Directing I:** Fundamental principles of play-directing; demonstrations of theory in group exercises. Each student is required to direct two short scenes for laboratory presentation and criticism.
- TPP 3500** **HFA 4 (3,2)**  
**Modern Stage Movement:** Modern movement patterns, analysis, improvisation, and exercise to improve the flexibility and control of the actor's physical means of expression.
- TPP 3700** **HFA 4 (4,0) W**  
**Stage Diction:** The role of the human voice in the art of acting; articulation, pronunciation drills, practice in vocal characterization.
- TPP 4112** **HFA 3 (3,0) S**  
**Acting III:** Concentration on scene study and preparation of audition material for advanced students.
- TPP 4140** **HFA 4 (4,0) S**  
**Performance Styles:** Instruction and experiences in traditional styles of acting and their application to the modern theatre.
- TPP 4311** **HFA 4 Alternate years**  
**Directing II:** PR: TPP 3310. Further theories and techniques of play direction, study of dramatic values, plot structure, style, mood, composition, and directing approach.
- TPP 4350** **HFA 4 (4,0)**  
**High School Play Directing:** Theory and practice of directing and producing, with emphasis upon methods practicable in high school.
- TTE 4004** **EN 4 (4,0)**  
**Transportation Engineering:** PR: EGN 3613 and STA 3032. Investigation of all forms of transport—highway, rail, water, air. Systems approach to planning, design, construction, operation, and administration of transportation networks.
- TTE 4504** **EN 3 (3,0)**  
**Urban Planning:** PR: EGN 3703. History and design principles of planning. Basic economic, land use, population, conservation, and government planning concepts.
- TTE 5204** **EN 4 (4,0)**  
**Traffic Engineering:** PR: STA 3032. Study of operator and vehicle characteristics, and design for street capacity, signals, signs and markings.
- TTE 5720** **EN 4 (4,0)**  
**Design Elements of Transportation Systems:** PR: TTE 4004. Study of geometric and construction design elements in the engineering of transportation systems.
- TTE 6526** **EN 4 (4,0) S**  
**Planning and Design of Airports:** PR: C.I. Background of aviation and airport development, aircraft characteristics. Planning and design of airport components. Heliport and STOL ports and pavement and drainage design.
- TTE 6607** **EN 4 (4,0)**  
**Land Use and Transportation Planning:** PR: TTE 4004, 4504, or C.I. Study of analysis and design factors in land use and transportation planning.
- TTE 6620** **EN 4 (4,0)**  
**Mass Transportation Systems:** PR: C.I. Planning, design, construction, operation and administration of mass transportation systems.
- URP 4026** **SS 4 (4,0) F**  
**The Politics of Planning for Urban Communities:** Examines the political, and economic factors

influencing the planning process at local, state, and national levels.

**VIC 3000**

**SS 4 (4,0) S**

**Visual Communication:** A study of the visual system of man, and the influences of the visual media on modern society.

**VIC 3001**

**SS 4 (4,0) F,W,S**

**Photo Communication:** Photography as a communication device; use of still camera; basic photographic technique. Open to all majors.

**ZOO 1010C**

**NS 4 (3,4) F,S**

**General Zoology:** Introduction to zoology; structure, function and representative groups; current concepts in zoological sciences.

**ZOO 1020**

**NS 3 (3,0)**

**Biology of Man:** An introduction to man as a member of the animal kingdom; his taxonomy, anatomy, growth, reproduction, development, heredity, evolution, behavior, diseases, and population growth.

**ZOO 3233C**

**NS 5 (3,6)**

**Animal Parasitology:** PR: ZOO 1010C. Identification and life histories of representative parasitic protozoa and helminths emphasizing host-parasite relationships; techniques of animal examination.

**ZOO 3303C**

**NS 4 (2,6) S**

**Vertebrate Zoology:** PR: 8 hours of zoology or C.I. Evolution and classification followed by an introduction to vertebrate ecology, natural history and behavior.

**ZOO 3713C**

**NS 4 (2,6) F**

**Comparative Vertebrate Anatomy I:** PR: ZOO 1010C. The vertebrate animals; relationship of organs and systems; and their phylogenetic significance.

**ZOO 3714C**

**NS 4 (2,6) W**

**Comparative Vertebrate Anatomy II:** PR: ZOO 3713C. Continuation of ZOO 3713C.

**ZOO 3733C**

**NS 5 (3,4) F,W**

**Human Anatomy:** PR: BSC 1010 or equivalent. Structure of the human body. Not open to students in ZOO 3713, ZOO 3714 or equivalent.

**ZOO 3753C**

**NS 4 (2,6)**

**Vertebrate Histology:** PR: ZOO 1010. Anatomy, structure and function of major cell types and tissues.

**ZOO 4203C**

**NS 5 (3,6) W, odd years**

**Invertebrate Zoology:** PR: 12 hours of biology or C.I. Taxonomy, anatomy and ecology of the invertebrate animals.

**ZOO 4453C**

**NS 4 (2,6) S, even years**

**Ichthyology:** PR: 8 hours of zoology or C.I. Introduction to the biology of the fishes, their classification, evolution and life histories.

**ZOO 4523C**

**NS 3 (3,0)**

**Vertebrate Ethology:** PR: ZOO 1010. Classical ethology, modern experimental ethology and behavioral ecology are considered.

**ZOO 4603C**

**NS 5 (3,6) S, even years**

**Embryology:** PR: 12 hours of biology. Embryology of the vertebrates; fertilization of egg; stages of cleavage; development of organs and systems.

**ZOO 4813C**

**NS 3 (3,0) W, even years**

**Zoogeography:** PR: PCB 3043 or C.I. Principles and concepts concerning regional patterns of distribution of the animals of the world, both past and present.

**ZOO 5206C**

**NS 5 (3,6)**

**Aquatic Invertebrates:** PR: ZOO 4203C or C.I. A faunistic survey of major invertebrate groups associated with aquatic environments in Florida.

**ZOO 5463C**

**NS 4 (2,6)**

**Herpetology:** PR: 8 hours of zoology or C.I. Introduction to the biology of the amphibians and rep-

tiles, their classification, evolution and life histories.

**ZOO 5475C**

**NS 4 (2,6) W, even years**

**Ornithology:** PR: 8 hours of zoology or C.I. Introduction to the biology of birds, their classification, evolution and life histories.

**ZOO 5483C**

**NS 4 (2,6)**

**Mammalogy:** PR: 8 hours of zoology or C.I. Introduction to the biology of mammals, their classification, evolution and life histories.

**ZOO 5863C**

**NS 4 (2,6)**

**Fishery Biology:** PR: PCB 4304 and ZOO 4453. The biology and management of important commercial and game fishes; case histories of selected fisheries and analysis of methodology.

**ZOO 6806C**

**NS 4 (2,6) S, odd years**

**Field Zoology:** PR: 12 hours in biological sciences, or science teaching experience or C.I. Classification and identification among major animal groups with emphasis on field experience. Major references sources reviewed.

# FACULTY

The date indicates the first year of employment at the University of Central Florida.

- ABBOTT, DAVID W.**, *Professor of Psychology*  
(1968), B.A., M.S., Ph.D. (University of Massachusetts)
- ABEL, EILEEN M.**, *Assistant Professor of Sociology*  
(1978), A.B., M.S.W. (University of Maryland)
- ADICKS, RICHARD**, *Professor of English*  
(1968) B.A.E., M.A., Ph.D. (Tulane University)
- ALLEN, WILLIAM D.**, *Professor of Sociology*  
(1969) B.S., M.S.W., Ph.D., (Ohio State University)
- ALOI, MARY GAY**, *Assistant Professor of Nursing*  
(1978), B.S., M.S. (Syracuse University)
- AMMONS, JAMES H.**, *Assistant Professor of Public Service Administration*  
(1977), B.S., M.S.P.A., Ph.D. (Florida State University)
- ANDERSON, B. BETTY**, *Associate Professor of Education*  
(1968), B.A., M.A., Ed.D. (University of Maryland)
- ANDREWS, LARRY C.**, *Assistant Professor of Mathematics*  
(1972), B.S., M.S., Ph.D. (Michigan State University)
- ANTHONY, JOBY M.**, *Chairman, Department of Mathematics and Statistics; Associate Professor of Mathematics*  
(1970), B.S., M.A.M., Ph.D. (North Carolina State University))
- ARMSTRONG, JOHN H.**, *Associate Professor of Education*  
(1970), B.S., M.S., Ed.D. (Oklahoma State University)
- ARMSTRONG, LEE H.**, *Assistant Professor of Mathematics*  
(1968), B.A., M.S., Ph.D. (Florida State University)
- ARNOLD, ROBERT L.**, *Director of Instructional Resources and Professor of Communication*  
(1968), B.A., M.A., Ph.D. (Ohio University)
- AVERY, CLARENCE G.**, *Chairman, Department of Accountancy and Professor of Accountancy*  
(1972), B.S., B.A., M.S.A., Ph.D. (University of Illinois), C.P.A. (State of Illinois, State of Ohio)
- BAKER, GRAEME L.**, *Professor of Chemistry*  
(1968), B.S., M.S., Ph.D. (Montana State University)
- BARNES, MADELYN**, *Visiting Assistant Professor of English*  
(1975) B.A., M.A. (University of South Florida)
- BARR, CAROL J.**, *Instructor in Medical Record Administration*  
(1977), B.S., (Florida Technological University)
- BARR, MURRAY P.**, *Assistant Professor of Mathematics*  
(1968), B.S., M.S. (Adelphi University)

- BARR-JOHNSON, VIRGINIA**, *Associate Professor of Education*  
(1971), B.A., M.Ed., Ph.D. (Florida State University)
- BARSCH, KARL-HEINRICH**, *Visiting Assistant Professor of Foreign Languages*  
(1977), B.A., M.A., Ph.D. (University of Colorado)
- BAUER, CHRISTIAN S., JR.**, *Associate Professor of Engineering and Director, Transportation Systems Institute*  
(1970), B.S.I.E., M.S.E., Ph.D. (University of Florida), P.E. (Florida)
- BEADLE, JAMES S.**, *Associate Professor of Education*  
(1968), B.S., M.S., Ph.D. (Michigan State University)
- BEAN, STEVEN J.**, *Assistant Professor of Statistics*  
(1978), B.S., M.S. (University of South Florida)
- BECK, JAMES K.**, *Assistant Professor of Engineering*  
(1970), B.S.A.E., M.S.E. (Florida Technological University) P.E. (Florida)
- BECKER, DONALD C.**, *Assistant Professor of Public Service Administration*  
(1976), B.A., M.Ed. (Wayne State University)
- BERGNER, JOHN F., JR.**, *Professor of Health Sciences*  
(1975), B.S., M.S.P.H., Ph.D. (University of Maryland)
- BERRY, WALDRON**, *Associate Professor of Management*  
(1970), B.S., A.M., M.B.A., Ph.D. (University of Florida)
- BIRD, ROBERT C.**, *Assistant Professor of Education*  
(1971), B.S., M.Ed., Ph.D. (Florida State University)
- BISHOP, PATRICIA J.**, *Assistant Professor of Engineering*  
(1978), B.S.E., M.S.M.E., Ph.D. (Purdue University)
- BLAU, BURTON I.**, *Associate Professor of Psychology*  
(1972), B.A., M.A., Ph.D. (Southern Illinois University)
- BLED SOE, CAROL C.**, *Assistant Dean for Academic Affairs and Assistant Professor of Communication*  
(1970), B.S., M.A., (University of Oklahoma)
- BLED SOE, ROBERT L.**, *Associate Professor of Political Science*  
(1968), A.B., M.A., Ph.D. (University of Florida)
- BLOCK, DAVID L.**, *Director, Florida Solar Energy Center and Professor of Engineering*  
(1968), B.S., M.S., Ph.D. (Virginia Polytechnic Institute), P.E. (Florida)
- BLUME, DELORYS M.**, *Assistant Professor of Education*  
(1972), B.S., M.A., Ed.D. (University of Florida)
- BOGUMIL, WALTER A., JR.**, *Assistant Professor of Management*  
(1972), B.S., M.B.A., Ph.D. (University of Georgia)
- BOLEMAN, JAY S.**, *Associate Professor of Physics*  
(1968), B.S., Ph.D. (University of South Carolina)
- BOLLET, ROBERT M.**, *Assistant Professor of Education*  
(1973), B.S., M.S., Ed.D. (Ball State University)
- BOLTE, JOHN R.**, *Associate Vice President for Academic Affairs and Professor of Physics*  
(1968), B.A., M.A., M.S., Ph.D. (State University of Iowa)



- BOSMENY, ALAN D.**, *Visiting Instructor of Radiologic Sciences*  
(1977), RT (ARRT), A.S., B.S. (Medical College of Georgia)
- BRENNAN, JOHN J.**, *Associate Professor of Physics*  
(1968), B.S., M.S., Ph.D. (Georgia Institute of Technology)
- BRIGHAM, ROBERT C.**, *Associate Professor of Mathematics*  
(1970), B.S., M.S., Ph.D. (New York University)
- BROPHY, JAMES C.**, *Associate Professor of Psychology*  
(1969), B.A., Ph.D. (Vanderbilt University)
- BROWN, JOHN C.**, *Visiting Instructor of Engineering Science*  
(1977), B.S., M.S. (University of Michigan)
- BROWN, WILLIAM R.**, *Associate Professor of Sociology*  
(1972), B.S., M.S., Ph.D. (Purdue University)
- BROWNE, ROLAND A.**, *Professor of English*  
(1968), B.A.M.A., C.E.F. (Queen's University, Canada)
- BRUMBAUGH, DOUGLAS K.**, *Professor of Education*  
(1969), B.S., M.Ed., Ed.D. (University of Georgia)
- BUCHANAN, RAYMOND W., JR.**, *Chairman, Department of Communication and Associate Professor of Communication*  
(1970), B.A., M.A., Ph.D. (Louisiana State University)
- BUDINA, JOHN W., JR.**, *Professor of Finance*  
(1968), A.B., M.B.A., Ph.D. (St. Louis University)
- BULLARD, BARRY D.**, *Instructor of Engineering Technology*  
(1977), B.E.E.T., M.T. (Georgia Southern College), E.I.T. (Georgia)
- BURR, D. E. SCOTT**, *Assistant Professor of Psychology*  
(1972) B.A., M.A., Ph.D. (University of Colorado)
- BURNETTE, CHARLES D.**, *Instructor in Management*  
(1977), B.A., M.A., (Northwest Missouri State University)
- BURROUGHS, WAYNE A.**, *Associate Professor of Psychology*  
(1969), B.A., M.A., Ph.D. (University of Tennessee)
- BUSCH, MARILYN F.**, *Instructor in Accountancy*  
(1971), B.S., M.A. (University of Missouri), C.P.A. (Florida)
- BUTLER, JOHN F.**, *Instructor of Communication*  
(1971), B.A., M.A. (Florida Technological University)
- CALLARMAN, WILLIAM G.**, *Director, Management Institute and Associate Professor of Management*  
(1972), B.B.A., M.B.A., D.B.A. (Arizona State University)
- CARON, RICHARD M.**, *Assistant Professor of Mathematics*  
(1972), B.A., Ph.D. (Louisiana State University)
- CARROLL, WAYNE E.**, *Associate Professor of Engineering*  
(1971), B.S.E., M.S., Ph.D. (Virginia Polytechnic Institute) P.E. (Florida)
- CARTER, PATRICIA WINN**, *Assistant Professor of Public Service Administration*  
(1976), B.A., J.D., (University of Florida)
- CERVONE, ANTHONY V.**, *Chairman, Department of Foreign Languages and Professor of Foreign Languages*  
(1968), B.A., Ph.D. (St. Louis University)

- CHAMBERS, GENE T.**, *Assistant Professor of Business Law*  
(1974), B.B.A., M.B.A., J.D. (Memphis State University)
- CHANG, CHIOU-HSIUNG**, *Associate Professor of Accountancy*  
(1977), B.B.A., M.B.A., Ph.D. (Louisiana State University)
- CHANG, KWEI K.**, *Visiting Assistant Professor of Engineering*  
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