Steven E. Sorg
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.

The University of Central Florida, under applicable rules of the Administrative Procedures Act, may change any of the announcements, information, policies, rules, regulations, or procedures set forth in this catalog. The catalog is published once a year and cannot always reflect new and modified regulations. Statements in this catalog may not be regarded in the nature of binding obligations on the institution or the State of Florida.

The University of Central Florida is an Equal Opportunity Employer, and assures equal access to educational programs and activity opportunities without regard to race, sex, age, handicap or national origin.
TABLE OF CONTENTS

STATE OF FLORIDA BOARD OF EDUCATION ........................................... 3
STATE OF FLORIDA BOARD OF REGENTS ............................................. 3
ADMINISTRATION ................................................................................. 4
ORLANDO AND VICINITY MAP .......................................................... 8
UCF CAMPUS MAP ............................................................................ 9
ACADEMIC CALENDAR ...................................................................... 11
STATEMENT OF PURPOSE AND PHILOSOPHY .................................. 15
THE UCF CAMPUS ........................................................................... 16
AREA CAMPUSES ........................................................................... 16
EAST CENTRAL FLORIDA AREA ....................................................... 15
ACCREDITATION ............................................................................... 17, 33
UCF FOUNDATION ........................................................................... 17
STUDENT AFFAIRS ........................................................................... 21
SCHEDULE OF FEES ........................................................................ 29
ADMINISTRATIVE AND ACADEMIC POLICIES ................................. 31
GRADUATE STUDIES ......................................................................... 54
ACADEMIC PROGRAMS .................................................................. 60
MAJOR IN GENERAL STUDIES ......................................................... 61
COLLEGE OF BUSINESS ADMINISTRATION ................................... 64
COLLEGE OF EDUCATION ............................................................... 77
COLLEGE OF ENGINEERING ............................................................ 99
COLLEGE OF HEALTH ..................................................................... 118
COLLEGE OF HUMANITIES AND FINE ARTS ................................. 131
COLLEGE OF NATURAL SCIENCES ............................................... 155
COLLEGE OF SOCIAL SCIENCES ..................................................... 182
COOPERATIVE EDUCATION ............................................................. 17
COURSE DESCRIPTIONS ................................................................. 210
FACULTY ......................................................................................... 337
INDEX ............................................................................................. 360

This public document was promulgated at an annual cost of $1.15 per copy to acquaint the student with the program of study and the cost of attending the university.
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Special Assistant to the President ................................................................. Alan G. Fickett
Legal Counsel ................................................................................................. To be announced
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Director of Athletics ............................................................... Jack O'Leary

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Director of Records & Registration ................................................ Ed. Knight

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Assistant Dean of Men ................................................................. Kenneth E. Fisher
Dean of Women .................................................................................. Carol P. Wilson
Assistant Dean of Women ................................................................. Anne Broughton
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Director, Recreational Services ......................................................... Loren Knutson
Director, Student Organization & Orientation .................................... Jimmie Ferrell
Coordinator, Veterans' Affairs ............................................................... Thomas Costa
Director, Village Center ................................................................. Kenneth D. Lawson
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Director, Campus Security .................................... John F. Smith
Director, Purchasing .......................................... Gladys C. Horton
University Comptroller ....................................... Joseph Gomez
University Safety Officer ...................................... James K. Eller
Director, University Physical Planning ...................... To be announced

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Coordinator of Alumni Services .............................. Mark W. Glickman
Director, Informational Services ............................. Kenneth J. Sheinkopf
Director, Public Affairs ....................................... C. Barth Engert
Director, School & Community Relations .................... Susan K. Davis
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Associate Dean ........................................ Wallace E. Reiff (Acting)
Assistant Dean ........................................... Wade R. Kilbride
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Economics .................................................. Frederick A. Raffa
Finance ..................................................... Edward A. Moses
Management ............................................... Richard C. Reidenbach
Marketing .................................................. Gordon W. Paul

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Dean .......................................................... C. C. Miller
Associate Dean .......................................... Robert G. Cowgill
Assistant Dean ........................................... J. Nannette McClain
Elementary Education .................................... Robert D. Martin
Physical Education ........................................ John W. Powell
Secondary Education ..................................... Harry O. Hall
Teaching Analysis ......................................... Virginia Barr-Johnson (Acting)

College of Engineering

Dean .......................................................... Robert D. Kersten
Associate Dean .......................................... George F. Schrader
Assistant Dean ........................................... Bruce E. Mathews
Assistant Dean ........................................... J. Paul Hartman
Civil Engineering and Environmental Sciences .... 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 .... Burton E. Eno
Engineering Technology .................................. Richard G. Denning

College of Health

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-Edwards
Respiratory Therapy ..................................... J. Stephen Lytle
College of Humanities and Fine Arts

Dean ................................................ Charles N. Micarelli
Associate Dean ....................................... Harry W. Smith, Jr.
Art ................................................ Character W. Wellman (Acting)
English ................................................ Richard S. Grove
Foreign Languages ..................................... Armando Payas
History ................................................ Jerrell H. Shofner
Humanities, Philosophy and Religion .............. Paul E. Riley (Acting)
Music ................................................ J. Gary Wolf
Theatre ................................................ Harry W. Smith, Jr. (Acting)

College of Natural Sciences

Dean ................................................ Bernard A. 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.
Assistant to the Dean ................................ Lawrence A. Tanzi
Aerospace Studies .................................... Louis J. Samelson
Army ROTC — Military Science ...................... A. L. Wehrle
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Sociology ............................................. William R. Brown (Acting)

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Dean ................................................ John P. O’Hara
Associate Dean ....................................... W. Rex Brown
Director .............................................. Jennie Loudermilk
Visiting Coordinator, Project Diversion ............ Cyndee Hutchinson
Coordinator ......................................... Patricia Corcoran
Coordinator .......................................... John Larson
Real Estate Institute .................................. Lee Constantine
ACADEMIC CALENDAR
Summer Quarter 1980

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

*Area Campus (Brevard, Daytona Beach, and South Orlando) Registration and Add/Drop dates precede registration and vary with individual Area Campuses. AREA CAMPUS STUDENTS MUST CONTACT DIRECTORS OF THE APPROPRIATE CAMPUS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.
Fall Quarter 1980

JUNE 16  Last day for receipt of applications from International Students
AUGUST 18  Last day for receipt of regular undergraduate and graduate applications
SEPTEMBER 2  Last day for receipt of re-admission applications
SEPTEMBER 15  Academic year begins
SEPTEMBER 15-18  Orientation and advisement for new freshmen and transfer students not pre-advised
SEPTEMBER 15-18  Advisement of current and former students not pre-advised
SEPTEMBER 15-18  *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 22  Classes begin for Fall Quarter
SEPTEMBER 26  Last day to adjust class schedule (end of Add/Drop)
SEPTEMBER 26  Last day for late registration (late registration runs concurrently with Add/Drop). A $25 late fee will be assessed.
SEPTEMBER 26  Last day for withdrawal with refund
SEPTEMBER 26  Last day to apply for graduation for those completing requirements end of Fall Quarter
SEPTEMBER 26  Last day to change from credit to audit
OCTOBER 17  Last day for removing temporary student status
OCTOBER 18  Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date
OCTOBER 24  Deadline for withdrawal without grade penalty. Last day to withdraw from a course or the University
NOVEMBER 11  Veterans’ Day Holiday (University-wide)
NOVEMBER 12  Classes resume
NOVEMBER 14  Last day to remove an “I” earned last quarter
NOVEMBER 27-28  Thanksgiving Holidays (University-wide)
DECEMBER 1  Classes Resume
DECEMBER 5  Classes end for Fall Quarter
DECEMBER 6  Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date.
DECEMBER 8-11  Final examination period
DECEMBER 12  Commencement
DECEMBER 15  Grades due in Registrar’s Office
DECEMBER 15  Christmas Holidays begin (students)

* Area Campus (Brevard, Daytona Beach, and South Orlando) Registration and Add/Drop dates precede registration and vary with individual Area Campuses. AREA CAMPUS STUDENTS MUST CONTACT DIRECTORS OF THE APPROPRIATE CAMPUS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

<table>
<thead>
<tr>
<th>SEPTEMBER</th>
<th>OCTOBER</th>
<th>NOVEMBER</th>
<th>DECEMBER</th>
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<td>26 27 28 29 30 31</td>
<td>23 24 25 26 27 28 29 30</td>
<td>28 29 30 31</td>
</tr>
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Winter Quarter 1981

<table>
<thead>
<tr>
<th>OCTOBER 1</th>
<th>Last day for receipt of applications from International Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOVEMBER 26</td>
<td>Last day for receipt of regular undergraduate and graduate application</td>
</tr>
<tr>
<td>DECEMBER 10</td>
<td>Last day of receipt of readmission applications</td>
</tr>
<tr>
<td>JANUARY 2</td>
<td>Orientation and advisement for new freshmen and transfer students not pre-advised</td>
</tr>
<tr>
<td>JANUARY 2</td>
<td>Advisement of readmitted students not pre-advised</td>
</tr>
<tr>
<td>JANUARY 5</td>
<td>*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.</td>
</tr>
<tr>
<td>JANUARY 7</td>
<td>Classes begin for Winter Quarter</td>
</tr>
<tr>
<td>JANUARY 13</td>
<td>Last day to adjust class schedule (end of Add/Drop)</td>
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<tr>
<td>JANUARY 13</td>
<td>Last day for late registration (late registration runs concurrently with Add/Drop). A $25 late fee will be assessed</td>
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<tr>
<td>JANUARY 13</td>
<td>Last day for withdrawal with refund</td>
</tr>
<tr>
<td>JANUARY 13</td>
<td>Last day to apply for graduation for those completing requirements end of Winter Quarter</td>
</tr>
<tr>
<td>JANUARY 13</td>
<td>Last day to change from credit to audit</td>
</tr>
<tr>
<td>JANUARY 17</td>
<td>Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date</td>
</tr>
<tr>
<td>FEBRUARY 3</td>
<td>Last day for removing temporary student status</td>
</tr>
<tr>
<td>FEBRUARY 10</td>
<td>Deadline for withdrawal without grade penalty. Last day to withdraw from a course or the University</td>
</tr>
<tr>
<td>FEBRUARY 28</td>
<td>Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date</td>
</tr>
<tr>
<td>MARCH 3</td>
<td>Last day to remove an &quot;I&quot; earned last quarter</td>
</tr>
<tr>
<td>MARCH 13</td>
<td>Classes end for Winter Quarter</td>
</tr>
<tr>
<td>MARCH 16-19</td>
<td>Final examination period</td>
</tr>
<tr>
<td>MARCH 21</td>
<td>Grades due in Registrar's Office</td>
</tr>
</tbody>
</table>

*Area Campus (Brevard, Daytona Beach, and South Orlando) Registration and Add/Drop dates precede registration and vary with individual Area Campuses. AREA CAMPUS STUDENTS MUST CONTACT DIRECTORS OF THE APPROPRIATE CAMPUS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.*
Spring Quarter 1981

DECEMBER 22  Last day for receipt of applications from International Students
FEBRUARY 23  Last day for receipt of regular undergraduate and graduate applications
MARCH 9  Last day for receipt of readmission applications
MARCH 23-26  Orientation and advisement for new freshmen and transfer students, and advisement for readmitted students not pre-advised
MARCH 26  *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
MARCH 30  Classes begin for Spring Quarter
APRIL 3  Last day to adjust class schedule (end of Add/Drop)
APRIL 3  Last day for late registration (late registration runs concurrently with Add/Drop). A $25 late fee will be assessed
APRIL 3  Last day for withdrawal with refund
APRIL 3  Last day to apply for graduation for those completing requirements end of Spring Quarter
APRIL 3  Last day to change from credit to audit
APRIL 24  Last day for removing temporary student status
APRIL 25  Graduate record exam (at designated examination centers). Registration for examination must be made 4 weeks prior to this date
MAY 1  Deadline for withdrawal without grade penalty. Last day to withdraw from a course or the University
MAY 22  Last day for removing an "I" earned last quarter
MAY 25  Memorial Day Holiday (University-wide)
MAY 26  Classes resume
JUNE 5  Classes end for Spring Quarter
JUNE 8-11  Final examination period
JUNE 12  Commencement
JUNE 13  Grades due in Registrar's Office
JUNE 13  Academic year ends

*Area Campus (Brevard, Daytona Beach, and South Orlando) Registration and Add/Drop dates precede registration and vary with individual Area Campuses. AREA CAMPUS STUDENTS MUST CONTACT DIRECTORS OF THE APPROPRIATE CAMPUS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

<table>
<thead>
<tr>
<th>April</th>
<th>MAY</th>
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<td>24 25 26 27 28 29 30</td>
<td>28 29 30</td>
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The calendar for the Summer Term, 1981 is dependent on final approval of the semester calendar for the State University System of Florida. A separate announcement of the Summer calendar is expected to be available by January 1, 1981 and will be included in the 1981-82 University Bulletin.
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, 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 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 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.

UCF AREA CAMPUSES

In addition to the academic programs offered on the main campus in Orlando, Florida, the University of Central Florida offers a number of upper division programs and graduate level courses at Area Campuses in Cocoa and Daytona Beach as well as at a campus located in the southern part of Orlando. These are the same programs and courses offered at the main (Orlando) campus and carry the same credit. Each Area Campus is staffed with a director, counselors, and support personnel. Contact the Area Campus of your choice for information as to present and projected course offerings and programs of study.

UCF BREVARD CAMPUS
1519 Clearlake Road
Cocoa, Florida 32922
(305) 632-4127

UCF DAYTONA BEACH CAMPUS
215 South Clyde Morris Boulevard
Daytona Beach, Florida 32014
(904) 255-7423

UCF SOUTH ORLANDO CAMPUS
7300 Lake Ellenor Drive
Orlando, Florida 32809
(305) 855-0881

COLLEGE OF EXTENDED STUDIES

The College of Extended Studies 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 the College of Extended Studies, 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 graduate and 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 Accreditation Board for Engineering and Technology (ABET); within the College of Health: Medical Record Administration by the Council on Allied Health Education Accreditation, Radiologic Sciences by the Council on Allied Health Accreditation; and, Respiratory Therapy by the American Registry of Respiratory Therapists (ARRT). 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 PRESSES OF FLORIDA

The University of Florida is host to the state university system's scholarly publishing facility, *University Presses of Florida*. The goals of the systemwide publishing program implemented by University Presses of Florida are expressed in Board of Regents' policy:

"...to publish books, monographs, journals, and other types of scholarly or creative works. The Press shall give special attention to works of distinguished scholarship in academic areas of particular interests and publish original works by state university faculty members, but it may also publish meritorious works originating elsewhere and may republish out-of-print works."

The purpose of the University Presses of Florida is to encourage, seek out, and publish original and scholarly manuscripts which will aid in developing the Universities as a recognized center of research and scholarship.

University Presses of Florida is a member of the Association of American University Presses and of the Association of American Publishers, Inc.

Students and members of the faculty and staff are cordially invited to visit the Press offices at 15 N.W. 15th Street, Gainesville, Florida.

UNIVERSITY LIBRARIES

Director: Lynn W. Walker, LR 427, Phone 275-2564
Associate Director: Orlyn B. LaBrake, LR 427, Phone 275-2564

The University Libraries provide materials and services to support the instructional and research needs of the university. The collection now numbers some 325,000 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 audio-visual 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 audio-visual materials, recordings, tapes, filmstrips and mixed media kits are housed in the library.

The circulation desk and reserve materials are 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, audio-visual materials, material and technical processing departments. The fourth floor contains the general book collection, special collections, phonograph records with listening equipment and a group study 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. Interlibrary 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 out 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 campuses 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 campuses. These catalogs and a courier service give the campuses access to the collections of the main library. Students at the Brevard campus 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 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.

INTERCOLLEGIATE ATHLETICS
Director: Jack O'Leary, ED 149, Phone 275-2256.

Programs in Intercollegiate Athletics are coordinated by varsity coaches and staff under the general supervision of the Director of Athletics.

The University of Central Florida is a member of the National Collegiate Athletic Association (NCAA), Division II, Region 3 (except football, which is Division III) and participates in the Sunshine State Conference. The women athletes participate, observing the policies and rules of the Association for Intercollegiate Athletics for Women (AIAW), Division II, Region 3. Varsity athletic contests at the
University of Central Florida are governed by the rules of play published by NCAA and AIAW, and all established eligibility standards are observed.

Eligibility rules and transfer rules pertaining to participants in NCAA and AIAW sponsored championship events shall apply to all scheduled regular season competition and events as well as to championship events.

Our current varsity sports include baseball, basketball, cross country, golf, football, soccer, tennis and wrestling for men. The women's sports include basketball, cross country, golf, softball, soccer, tennis and volleyball.

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 Associate 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 students; and fostering respect and brotherhood among students and faculty. Assisted by members of his staff, the Associate 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 the University of Central Florida is to acquaint new students with the various academic curricula, to provide academic advise­ment, and to assist them in understanding college life. All new students will be given important information by members of the faculty, administration, and the student body which can assist them in the achievement of their personal academic goals. Information is mailed to students indicating the date, time and place for their orientation session.

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.
STUDENTS 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

Scholarships are awarded to individuals according to their academic achievement and their high probability of success in their chosen careers. Quite often financial need is used as an additional criterion.

Scholarships are funded by state and federal governments, corporations, private foundations, clubs, ethnic and cultural organizations, and from the college itself.

INSTITUTIONAL SCHOLARSHIPS: The Student Financial Aid Office awards a limited number of scholarships. Application is made at the time the
scholarship is advertised. Selection of recipients is determined by the University Scholarship and Financial Aid Committee.

**COLLEGE SCHOLARSHIPS:** College awarded scholarships are supported by Financial Aid and by agencies which donate funds to the various colleges of study. Apply through the dean of your college, your department chairman or to the University of Central Florida Department offering the scholarship.

**AGENCY SCHOLARSHIPS:** Agency awarded scholarships are funded by private organizations who select the recipients themselves and then process the funds through the Financial Aid Office. Apply directly to the agency.

**NATIONAL AND STATE SCHOLARSHIPS:** National scholarships are not limited to any specific geographical area in the United States. The National Merit Scholarship and the National Achievement Scholarship are programs that require taking the Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test in high school. Contact your high school counselor for further information.

State scholarships are funded by the state in which you reside. For information on the State of Florida Scholarships write to the Florida Student Financial Assistance Commission, Department of Education, Tallahassee, Florida, 32301.

**IV. PLANNING YOUR FINANCES**

**1980-81 STUDENT BUDGETS**

<table>
<thead>
<tr>
<th></th>
<th>On Campus Resident</th>
<th>Live with Parents</th>
<th>Apartment Resident</th>
<th>*Married/Head of House</th>
<th>*Single with Dependent Child</th>
<th>Married/Both Attending College</th>
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<td>229</td>
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<td>710</td>
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<td>1710</td>
<td>1064</td>
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<td><strong>TOTALS</strong></td>
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<td><strong>$9514</strong></td>
<td><strong>$8894</strong></td>
<td><strong>$10422</strong></td>
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</table>

*Each additional dependent child, add $1000.00

Note: Out-of-State tuition is an additional $23 per credit hour for lower level courses, $35 per credit hour for upper level courses. Based on 12 hours per quarter, this would incur an additional cost of $276 for lower level courses or $420 for upper level courses. Graduate tuition is $22 per credit hours, with an additional $40 per credit hour for Out-of-State Tuition.

EXPENSES LISTED ARE TO BE CONSIDERED AS VERY GENERAL ESTIMATES. IT IS NOT UNUSUAL FOR EXPENSES TO VARY AS MUCH AS $500 DEPENDING ON INDIVIDUAL CIRCUMSTANCE.

**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 social, cultural, recreational, and academic development. 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 (which is currently $2.69 of each quarter hour paid to the university).

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, legal aid, and dental 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/STUDENT UNION

The center of student life on the University of Central Florida campus is the Village Center and Student Union, campus-community facilities serving students, faculty, University patrons, alumni and guests. The Village Center 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. The Student Union contains food service facilities and lounge/meeting room facilities. Additionally, it contains the University Bookstore. Under the administration of the Director of the Village Center/Student Union, many student activity programs are conducted for the social, cultural and recreational interests of all students in these facilities.

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), inner tube waterpolo, floor hockey and a Turkey Trot. For the fitness minded we have a physical fitness class, a Rec Millers 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 extracurricular activities.

CLASSROOM RESPONSIBILITY

Students are responsible for maintaining a classroom decorum appropriate to the education 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 the end of the Add/Drop registration period. 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 fees must be paid by U.S. check or money order (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.)

<table>
<thead>
<tr>
<th></th>
<th>Fla. Resident</th>
<th>Non Fla. Resident</th>
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<tbody>
<tr>
<td>Lower Division*</td>
<td>$15.00 per hr.</td>
<td>$38.00 per hr.</td>
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<tr>
<td>Upper Division*</td>
<td>16.50 per hr.</td>
<td>51.50 per hr.</td>
</tr>
<tr>
<td>Graduate*</td>
<td>22.00 per hr.</td>
<td>62.00 per hr.</td>
</tr>
<tr>
<td>Thesis*</td>
<td>24.00 per hr.</td>
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Fall, Winter and Spring Quarters

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Summer Quarter, 1980

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<tr>
<td>Thesis*</td>
<td>24.00 per hr.</td>
<td>64.00 per hr.</td>
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</table>

*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 .......................................................... $505.00-$555.00

Charge for late payment .................................................. 15.00

D. Books and supplies (estimated) per quarter .......................... $75.00

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 and for Intern Participation holders. 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.

J. I.D. Card replacement .................................................. $5.00

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 Student Accounts Office of a Certification of Withdrawal issued by the Registrar. No refunds will be made under this policy except upon proper applications.

A. A FULL REFUND when:
1. Withdrawal is made before end of 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 48, 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 38 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 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 42 and Second Baccalaureate Degree, page 52). 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 that 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.

**STUDENT CONSUMER INFORMATION**

The University of Central Florida completes retention studies, validity studies, and student progress reports on a periodic basis. These studies and related information are available at the Reserve Desk in the Library.

**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 issu­
ing 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 any 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), fur­
ther 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 hear­
ing by that office.

READMISSION

Students not in attendance during an academic quarter (exclusive of the sum­
ner term) must submit an application for readmission and such other information
as may be required, including transcripts of courses attempted in the interim.

Readmission of a suspended (disqualified or excluded) student is never
automatic. If a student has been disqualified or excluded, he/she must be read­
mitted 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 by submitting a reactivation form
within 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 max­
imum of four weeks (first 20 class days), to furnish all required records. Incom­
plete 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 ob­
tain prior approval for specific courses from the Dean or Department Chairman of
his respective college and the Registrar of UCF. Credit earned without this tran­
sient 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 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 Admission 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 students 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 undergraduate 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.

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 of a student with a long history or family history of Florida residence 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, 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 6C7.05(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 study 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 utilizations 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. Superior test scores (SAT 1100 or above, ACT — 26 or above).


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 6½ quarter hours of university credit under the CLEP program. (See page 41.)

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 reduce the last 45 q.h. of the residency requirements. 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 42.)

* 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 completed HUM 2200 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 examination which duplicate the CLEP general examination, and the CLEP usage. Information can be secured from 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.
## CLEP General Examinations, Maximum Credit hours, Minimum Passing Scaled Scores, Courses and Examination Which Duplicate the CLEP General Examinations and Recommended CLEP Usage

<table>
<thead>
<tr>
<th>Area</th>
<th>Subtest Areas</th>
<th>CLEP GENERAL EXAMINATION*</th>
<th>Maximum Qtr Hours</th>
<th>Minimum Passing Scaled Scores</th>
<th>Other Sub. Exams</th>
<th>Courses and Examinations which duplicate the general examination text area</th>
<th>CLEP usage</th>
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<tr>
<td>English Composition with Essay</td>
<td></td>
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<td>9</td>
<td>610</td>
<td>REA 1505: Vocabulary Study ENC 1103: Composition I</td>
<td>English Comp</td>
<td>4 QH Comp req 5 QH General Elective (Lower Division)</td>
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<td>Literature</td>
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<td>4</td>
<td>LIT 2010 Intro to Literature**</td>
<td></td>
<td>4 QH Cult &amp; Hist Foundation Any Lit req</td>
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<td>Fine Arts</td>
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<td>489</td>
<td>Intro to Art** HUM 2200: W. Hum Survey MUL 3011: Enjoyment of Music</td>
<td></td>
<td>4 QH Cult &amp; Hist foundation Western Hum Survey req</td>
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<td>497</td>
<td>Remedial or Intro Math* MGF 1124: Prin. of Math MAE 1810: Elem School Math I MAT 1024: Fund Algebra</td>
<td></td>
<td>1 QH General Elective (Lower Division)</td>
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<td>4</td>
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<td>Western Civilization</td>
<td>4 QH Cult &amp; Hist foundation: Hist req</td>
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<td>488</td>
<td>SOC 2000: General Soc. POS 2041: Am Nat Govt. ECO 2000 Economics &amp; Man</td>
<td>Intro. to Sociology Am. Govt.</td>
<td>1 QH General Elective (Lower Division)</td>
</tr>
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</table>

Office of Institutional Research
December 1979
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 $67\frac{1}{2}$ 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 a university in the State University System 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 may secure a “Request for Waiver of Mandatory Enrollment” form from the Registrar’s office or from the Office of the Associate Vice President for Student Affairs.

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
University of Central Florida students who satisfactorily complete 90 quarter hours of acceptable college work may apply for an Associate of Arts degree. University requirements include achievement of an overall and UCF grade point average of 2.0 or above, fulfillment of the Basic Environmental Studies requirements, and completion of the last 30 credit hours in residence at UCF.

The Associate of Arts degree is awarded only upon application. The application form may be obtained in the Registrar’s Office and should be completed by the end of the fifth week in the quarter in which the Associate of Arts degree is to be awarded. An Associate of Arts degree will not be awarded after completion of the baccalaureate degree.

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.)
Major: Accountancy, Economics, Finance, General Business Administration, Management, Marketing

College of Education
Bachelor of Arts (B.A.)
Major: Elementary Education
Major: K-12 — Educational Media Specialist, Physical Education, Visual Arts Education
Major: Secondary Education — Business Education (comprehensive), English Language Arts, Foreign Language, Mathematics, Science Education, Social Science, Speech, Technical/Vocational

College of Engineering
Bachelor of Science in Engineering (B.S.E.)
Bachelor Engineering Technology (B.E.T.)

College of Health
Bachelor of Arts (B.A.)
Major: Communicative Disorders
Bachelor of Science (B.S.)
Major: Medical Record Administration, Medical Technology, Nursing, Radiologic 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, Humanities and Fine Arts (interdisciplinary), 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
    Management

College of Education
  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 — Educational Media Specialist, Music Education, Physical Education, Reading Specialist, Visual Arts Education
  Secondary Education — Business Education, English Language Arts, Foreign Languages, Mathematics, Science, Social Sciences, Speech, Vocational Education
  Education Specialist (Ed.S.)
  Doctor of Education (Ed.D.)
College of Engineering
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 Health
Master of Arts
Communicative Disorders

College of Humanities and Fine Arts
Master of Arts (M.A.)
English
History

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.)
Applied Sociology
Communication
Master of Science (M.S.)
Clinical Psychology
Industrial Psychology
Master of Public Policy (M.P.P.)

1 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.

2 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
Beginning July 1, 1980 initial certification requirements (Temporary Certificate) in Florida include 4 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. Other subjects can be shown if the specific requirements in 6A-4.07 through 6A-4.35 have been met.

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.

IV. COMPREHENSIVE EXAMINATION

Competency must be demonstrated on a written examination in the areas of Mathematics, Reading, Writing, and Professional Skills. Examinations will be administered four times per year on the same Saturdays at four or more locations throughout the state of Florida.

Beginning July 1, 1981 a Regular Florida Teacher's Certificate may be issued to persons meeting all qualifications for the Temporary Certificate and satisfactorily completing an approved year long internship approved by the State Board of Education.

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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Average</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>Passing</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td>0</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawn</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>Incompleted</td>
<td>0</td>
</tr>
<tr>
<td>X</td>
<td>Audit (no credit)</td>
<td>0</td>
</tr>
<tr>
<td>S</td>
<td>Satisfactory (with credit)/Satisfactory Progress (Research, Thesis, or Dissertation)</td>
<td>0</td>
</tr>
<tr>
<td>U</td>
<td>Unsatisfactory (no credit)</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>Subsequently repeated (no credit)</td>
<td>0</td>
</tr>
</tbody>
</table>

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 both the student's total academic program and UCF 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:

FRESHMAN: Through 44 hours.
SOPHOMORE: 45-89 quarter hours.
JUNIOR: 90-134 quarter hours.
SENIOR: 135 or more quarter hours, prior to completion of baccalaureate requirements.
POST BACCALAUREATE: Any student enrolled in courses, regardless of course level (except one working toward another baccalaureate degree), who has a baccalaureate degree but has not been admitted to a graduate program.
GRADUATE: Any student enrolled in graduate courses who has been admitted to a graduate program.
Other student classifications are as follows:

**AUDITOR:** A student registered for any credit course who is not seeking credit.

**CO-OP STUDENT:** A student enrolled in the Cooperative Education Program remains a full-time registered student during all off-campus assignment quarters. Furthermore, there is no lapse in continuity in the co-op school calendar: a co-op student is either on assignment or attending class during each school quarter — fall, winter, spring, summer. (See Veteran's Benefits for co-ops.)

**SPECIAL STUDENT:** A student of demonstrated academic ability who does not meet the regular requirements for admission (Early Admission, non-degree, transient and auditor).

**TEMPORARY:** A student who applied on time and is permitted to register and attend class pending completion of his admissions file.

**TRANSIENT:** (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.

**VETERANS' CERTIFICATION OFFICE**

The Veterans' Certification Office provides information concerning entitlements, filing claims to the Veterans Administration, and certifying enrollment at the University.

Veterans must be certified through the Veterans' Certification Office to receive VA educational benefits. The office monitors on a continuous basis veterans' academic progress.

**VETERANS' BENEFITS**

Veteran-students eligible to receive VA educational benefits must make initial contact with the Veterans' Certification Office.

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 intending to enroll in a dual program may have the option to receive VA benefits. You must contact the Veterans' Certification Office if you choose this option.

Veterans in a Co-op Status can choose to draw VA benefits as follows:

(1) During on-campus enrollment the use of educational benefits is based on one-fourth, one-half, three-quarters, or full time status. No benefits are paid 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 enrolled. This option does pay for 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**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter Average</td>
<td>Grade Point Average on work attempted during any given quarter.</td>
</tr>
<tr>
<td>UCF Average</td>
<td>Grade Point Average on all work attempted while in attendance at the University of Central Florida.</td>
</tr>
<tr>
<td>Overall Average</td>
<td>Grade Point Average on all work attempted since entering college, including work from all previously attended institutions.</td>
</tr>
<tr>
<td>Academic Warning</td>
<td>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.</td>
</tr>
<tr>
<td>Academic Probation</td>
<td>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.</td>
</tr>
<tr>
<td>Disqualified (1st Suspension)</td>
<td>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. <strong>Readmission after the mandatory two quarters out is not automatic.</strong> A disqualified student must apply for readmission. His total record will then be reviewed and action on his readmission taken by the University Admissions and Standards Committee.</td>
</tr>
<tr>
<td>Exclusion (2nd Suspension)</td>
<td>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.</td>
</tr>
<tr>
<td>Appeal</td>
<td>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.</td>
</tr>
</tbody>
</table>
If a student has dropped out of the University for any reason, 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 60 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 42) 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 have received a waiver of the last 45-hour residence requirement, 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 43-45. 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. Each additional degree will require an additional 45 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 Vice President for Research and 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 44. For particulars concerning individual graduate programs, consult the index for appropriate page referrals.

The following general information pertains primarily to master's 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. All completed applications should be returned to the Admissions Office. Applications which appear to meet minimum standards for admission to graduate study are referred to the Dean of the appropriate College for his recommendations.

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

ADMISSION STATUS

Normally a student is admitted on a Post-Baccalaureate status until his file is complete and the College Graduate Admissions Committee has had an opportunity to review his credentials. Before the completion of 12 credit hours in this status, a student must be admitted either to Graduate Status (Regular or Provisional) or be informed of conditions to be met before admission.

POST-BACCALAUREATE STATUS

Students may be admitted to the University in the post-baccalaureate (non-degree seeking) 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.

While the student may be admitted to the University, some graduate programs may limit post-baccalaureate enrollment in their graduate level courses.
Since post-baccalaureate status is not a degree-earning status, credit hours taken during this status will not necessarily lead to a degree. If a student, however, is subsequently admitted to degree status, a limit of 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 score (GRE or GMAT) graduates 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 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. He must also meet the following minimum University and Program 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*, and
      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 for some programs.

   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).

*See page 33.

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 the above 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 REQUIREMENTS

All graduate programs require applicants to submit scores on the Graduate Record Examination (GRE) or the Graduate Management Admission Test (GMAT). Applicants should refer to the appropriate graduate degree program section in this catalog for their particular requirements. Satisfactory scores on and satisfactory recency of these examinations are determined by the College to which the application is made.

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 36)

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 500, as specified by the Board of Regents, 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 program coordinator with possible appeal to the College, and ultimately 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 from should not be used for change of majors/colleges for 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. If they are used for a graduate degree, they may not be used for a later undergraduate 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.

RECENTY 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 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

(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*

(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

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

I. ECO 2000 or ECO 2023, ECO 2013  
   POS 2041 or CPO 3103  
   GEO 3602 or GEO 3470  
   CCJ 2020  

II. PSY 2013, PSY 2014  
   SOC 2000  
   ANT 2003  
   COM 1000  

SCIENTIFIC ENVIRONMENT  
(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 stu-  
dent's major. For placement in language classes, see page  

ADVANCE PROGRAM (15 QUARTER HOURS REQUIRED)  

In addition to courses required to satisfy the basic Environmental Studies Pro-  
gram, 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 pro-  
gram 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 Presi-  
dent 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 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
For students who take and complete the Air Force R.O.T.C. four year or two year upper division programs.

HEALTH RELATED SCIENCES HLTH**
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.**
Accountancy, 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
Art, Music, Theatre.

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

LANGUAGES
French, German, Italian, Russian, Spanish.

MATHEMATICAL SCIENCES
Computer Science, Mathematics, and Statistics.

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

SOCIAL SCIENCES
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 (HLTH); 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
ACTING ASSOCIATE DEAN: W. Reiff, CB 209, 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 becoming a valuable member of society. All undergraduate programs are accredited by the American Assembly of Collegiate Schools of Business (AACSB)

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 to make sure that they take the proper courses.

Students in the College of Business Administration cannot receive credit for the following courses: 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.

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

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 years).
   C. a course in College Algebra
   D. a course in Statistics
2. 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 courses.

MINOR

The College of Business Administration offers a minor consisting of 28-29 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: Campbell, S. Cossaboom, Danese, Grierson, Hunt, K. Johnson, W. Johnson, Marquardt, Phillips, Poor, Powell, Salter

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
1. University graduation requirements
   (See page 42)
2. Environmental Studies Program
   (See page 60)
3. Required Courses
   a. Business Common Body of Knowledge
   b. ACC 3101 Intermediate Accounting I 4 hours
      ACC 3121 Intermediate Accounting II 4 hours
      ACC 3141 Intermediate Accounting III 4 hours
      ACC 3401 Cost Accounting 4 hours
      ACC 4201 Advanced Accounting 4 hours
      ACC 4501 Federal Income Tax Accounting 4 hours
      ACC 4601 Auditing 4 hours
      ECP 4703 Managerial Economics 3 hours
4. Restricted Electives (Select a minimum of 2 courses)
   ACC 3861 Governmental Accounting 4 hours
   ACC 4221 Consolidated Financial Statements 4 hours
   ACC 4421 Cost Analysis — Suggested for students planning to take ACC 4621 4 hours
   ACC 4521 Advanced Federal Income Tax 4 hours
   ACC 4621 Advanced Auditing — Suggested for students planning to take the CPA examination 4 hours

Special qualifications for satisfying this program's requirements:
   a. A minimum grade of "C" must be earned in each accounting course completed
b. A transfer student to this program must take a minimum of sixteen (16) 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: Fritz, Hicks, D. Hosni, Joseph, Kilbride, Klages, McNiel, White, Winchester, Xander

The discipline of economics 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 business problems.

MINOR (in Economics for Non-Business Administration majors)

Required courses: ECO 3101, 3203, 3411. These requirements are in addition to the prerequisites ECO 2013 and 2023.

Restricted electives: One course from Group I and two courses from Group II are required. Group I: ECO 3702, 4225, 4504; ECP 3203, 4703. Group II: ECO 4303, 4412, 5403; ECP 3424, 4403, 5615; ECS 4003, 4013.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: ECONOMICS

Degree Requirements

1. University graduation requirements
   (See page 42)

2. Environmental Studies Program.
   (See page 60)

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 Employment Theory 4 hours
      ECP 4703 Managerial Economics 3 hours

4. Restricted Electives
   All economics majors will be required to take two (2) electives from the Group I and three (3) electives from the Group II areas.

   Group I
   ECO 3702 International Economics 4 hours
   ECO 4225 Money: Theory and Policy 4 hours
   ECO 4503 Economics of the Public Sector 4 hours
   ECP 3203 Contemporary Labor Economics 4 hours

   Group II
   ECO 4303 History of Economic Thought 4 hours
   ECO 4412 Economic Statistics and Econometrics 4 hours
The program in finance is designed to provide the student with a broad knowledge in the areas of business finance, investments, financial institutions, insurance, and real estate. 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 institutions seeking the student who majors in finance.

**BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: FINANCE**

**Degree Requirements**

1. University graduation requirements  
   (See page 42)

2. Environmental Studies Program  
   (See page 60)

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

4. Restricted Electives
   (Select 4 courses)
   RMI 3015 Risk and Insurance  
   FIN 3233 Money and Banking  
   REE 3040 Real Estate  
   FIN 3324 Commercial Bank Administration  
   FIN 4514 Security Analysis  
   FIN 4414 Financial Management  
   FIN 4524 Portfolio Management  
   4 hours  
   4 hours  
   4 hours  
   4 hours  
   4 hours  
   4 hours

5. Electives
   Total Quarter Hours Required  
   180
GENERAL BUSINESS ADMINISTRATION

This option allows students to develop a general program of study which will satisfy career objectives not provided for by the specialized areas of concentration. To pursue this option, students must make application through the office of the Assistant Dean of the College of Business Administration. An academic advisor will be assigned to assist each student in developing a meaningful program of study.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: GENERAL BUSINESS ADMINISTRATION

Degree Requirements

1. University graduation requirements
   (See page 42)

2. Environmental Studies Program
   (See page 60)

3. Required Courses
   a. Business College common body of knowledge
   b. One (1) additional course beyond the Common Body of Knowledge in Finance and Marketing (one course from each discipline).
   c. ACC 3301 Managerial Accounting 3 hours
      ECP 4703 Managerial Economics 3 hours

4. Restricted Electives
   A minimum of six (6) additional courses from at least three (3) different departments (Accounting, Economics, Finance, Management, Marketing) 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, Bondurant, Callarman, Comish, Eubanks, Gallagher, Jones, Martin, McCartney, A. Schou, C. Schou, Wilson

The student 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 42)

2. Environmental Studies Program
   (See page 60)
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: Boone, Davis, Fuller, Gillett, McAleer, Rubin, Teeple

Marketing encompasses the total system of interacting business activities
designed to plan, price, promote, and distribute want-satisfying products and ser-
vices 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 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 42)

2. Environmental Studies Program
   (See page 60)

3. Required Courses
   a. Business College common body of knowledge
   b. ACC 3301 Managerial Accounting 3 hours
      MAR 3503 Consumer Market Behavior 4 hours
      MAR 3613 Marketing Research 4 hours
      MAR 4711 Marketing Management 4 hours
      ECP 4703 Managerial Economics 3 hours
      MAR 4713 Marketing Policies and Strategies 4 hours

70
4. Restricted Electives
   Minimum of 4 courses
   - MAR 3303 Advertising Management 4 hours
   - MAR 3403 Sales Management 4 hours
   - MAR 4123 Product Management 4 hours
   - MAR 4153 Retailing Management 4 hours
   - MAR 4203 Channels of Distribution Management 4 hours
   - MAR 4703 Current Marketing Problems 4 hours
   - MAR 4263 International Business Operations 3 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. All graduate business programs are accredited by the American Assembly of Collegiate Schools of Business (AACSB).

ADMISSION REQUIREMENTS

1. University Admission Requirements
   (See pages 31 and 54)

2. College Admission Requirements
   a. Admission is open to the student with a baccalaureate degree from a regionally accredited college or university who meets general university admission requirements and, in all cases, presents an appropriate undergraduate grade point average and an acceptable score on the Graduate Management Admission Test for the M.B.A. Degree or the M.S. in Accountancy degree. An acceptable score on the Graduate Record Examination is required instead of the GMAT for admission to the Master of Arts degree program in Applied Economics. Consideration is 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 or specific coursework is required as a prerequisite for graduate status in the College of Business Administration. Thus, the graduate degree programs are open to graduates in education, engineering, arts, sciences, and other fields, as well as business. An applicant will not be considered for regular graduate status until a 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 previously 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 as a graduate student 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 in Accountancy or MA in Applied Economics programs. These courses are available to students with graduate status in other units of the university if they have completed appropriate prerequisite coursework.

UNIVERSITY GRADUATE PROCEDURES

See the current UCF Graduate Procedures Manual, available in the Office of Graduate Studies.
MASTER OF BUSINESS ADMINISTRATION

Student Advisor: W. Reiff, CB 209, Phone 275-2137

The College of Business Administration is a full member of the Accreditation Council of the American Assembly of Collegiate Schools of Business, and all degree programs in Business at the undergraduate and graduate levels are fully accredited by the American Assembly of Collegiate Schools of Business (AACSB). The program may be completed on either a part-time or full-time schedule.

The University of Central Florida's MBA Program is designed to provide a sound knowledge of the general administrative principles and analytical problem solving competencies required to meet the challenges of leadership in administrative positions for the present and in the changing world of the future.

The Program of study in the College of Business Administration that leads to the Master of Business Administration Degree provides the opportunity to study broad administrative concepts and relationships along with some in-depth study in the several primary areas of Business Administration. Persons holding university baccalaureate degrees other than in business, as well as those with business baccalaureate degrees, will find the MBA Degree highly contributory to achieving their career goals.

This program prepares students to function effectively in professional careers as administrators in the complex business and economic society of today. The completion of the Master of Business Administration Program will: (a) strengthen the ability to use a better understanding of the interrelationship of the business functional areas in meeting an organization's objectives; and, (c) provide the student with those decision-making concepts and skills that should enable one to intelligently approach the challenges of managerial responsibility in a variety of organizational settings — both private and public.

Degree Requirements


2. Prerequisites: Part I of the MBA Program is concerned with assuring a student's basic competence and understanding of the foundational areas of knowledge common to business and economic organizations and systems. Students having prior academic coursework in business and economics, as well as in certain quantitative areas, may have a substantial portion of the foundation requirements that are listed below waived. Satisfaction of this foundation coursework is a prerequisite for entering Part II of the program.

PART I: Prerequisite/Foundation Coursework* (29 Quarter Hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 5004</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUL 5125</td>
<td>Business Environment and Business Law</td>
<td>3</td>
</tr>
<tr>
<td>ECO 5055</td>
<td>Economic Concepts</td>
<td>4</td>
</tr>
<tr>
<td>ECO 5413</td>
<td>Statistics for Business</td>
<td>4</td>
</tr>
<tr>
<td>FIN 5405</td>
<td>Financial Concepts</td>
<td>4</td>
</tr>
<tr>
<td>MAN 5051</td>
<td>Management of Organizations</td>
<td>2</td>
</tr>
<tr>
<td>MAN 5501</td>
<td>Intro. to Production/Operations Mgmt.</td>
<td>2</td>
</tr>
<tr>
<td>MAN 5839</td>
<td>Intro. to Mgmt Information Systems</td>
<td>2</td>
</tr>
<tr>
<td>MAR 5055</td>
<td>Marketing Concepts</td>
<td>4</td>
</tr>
</tbody>
</table>

*May be wholly or partially satisfied through prior coursework at the undergraduate level.
Foundation courses must normally have been satisfactorily completed within the past five years, preferably at an AACSB accredited college or university. Prerequisite coursework may be satisfied through completion of the foundation coursework (Part I) or through credit by special examination if approved by the College.

3. Required Courses: Part II of the Program provides for advanced coursework in those areas which make a professional administrator knowledgeable of the integrative nature of managerial responsibilities. The opportunity is provided to develop a facility in the use of analytical problem solving approaches essential for attaining organizational and operating objectives. Further, the second part of the MBA Program makes it possible, through appropriate elective coursework, to establish some degree of specialization in a functional area of business administration such as Accountancy, Finance, Marketing, or Management. Electives are to be approved by the Program advisor.

**PART II: Required Advanced Coursework (36 Quarter Hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAR 6606</td>
<td>Research Methods</td>
<td>3 hours</td>
</tr>
<tr>
<td>ACC 6734</td>
<td>Accounting Analysis</td>
<td>3 hours</td>
</tr>
<tr>
<td>MAN 6055</td>
<td>Planning and Control Analysis</td>
<td>3 hours</td>
</tr>
<tr>
<td>MAR 6716</td>
<td>Marketing Analysis</td>
<td>3 hours</td>
</tr>
<tr>
<td>ECO 6111</td>
<td>Economic Analysis of the Firm</td>
<td>3 hours</td>
</tr>
<tr>
<td>FIN 6436</td>
<td>Capital Management and Analysis</td>
<td>3 hours</td>
</tr>
<tr>
<td>ECO 6415</td>
<td>Statistical Models for Business</td>
<td>3 hours</td>
</tr>
<tr>
<td>MAN 6814</td>
<td>Operations Research Models for Business</td>
<td>3 hours</td>
</tr>
<tr>
<td>MAN 6896</td>
<td>Systems Analysis for Business Problem Solving</td>
<td>3 hours</td>
</tr>
<tr>
<td>FIN 6426</td>
<td>Financial Management of Current Operations</td>
<td>3 hours</td>
</tr>
<tr>
<td>MAN 6206</td>
<td>Analysis of Organization Behavior</td>
<td>3 hours</td>
</tr>
<tr>
<td>MAN 6721</td>
<td>Business Policy</td>
<td>3 hours</td>
</tr>
</tbody>
</table>

4. Restricted Electives: Minimum of 9 credit hours in approved business administration graduate courses.

5. Thesis: The MBA Graduate Program does not require a thesis. If a student has a unique area of interest that cannot be satisfied through regular elective coursework, a special independent student/research project for 3 quarter hours of credit may be developed if supported by a graduate teaching faculty member and approved by the appropriate department chairman and the Dean of the College. This would normally be undertaken during the last term of residency in the Program.

6. Examinations: Satisfactory completion of a written comprehensive examination is required before the MBA Degree may be awarded. This examination will be taken toward the end of classes each quarter. A graduate student has the option of taking part of the comprehensive examination during the next to last quarter of his study if all coursework in an area to be examined has been completed with a satisfactory final course grade recorded for each respective course therein. The remaining area(s) on the examination will be taken during the last term in which coursework is taken and all degree requirements are expected to be completed. The comprehensive examination consists of four equal parts covering the general subject areas of economics, finance, management, and marketing. The student must pass each of the parts. If any part(s) of the examination is (are) failed, the student is eligible to sit for the parts to be retaken during the immediate following term. Any other re-examination of any part will only be allowed if approved by the appropriate faculty review committee of the College.

Total Quarter Hours  45-74
MASTER OF SCIENCE: ACCOUNTANCY

Student Advisor: 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-27.073 (5th year in accountancy) and Rule 21A-33.03 (professional education).

Degree Requirements


2. Prerequisites: All of the foundation courses for the MBA (29 hours) as well as the following:

Prerequisite Undergraduate Accounting Courses:

- ACC 3101, 3121, 3141 Intermediate Accounting I, II, III 12 hours
- ACC 3401 Cost Accounting 4 hours
- ACC 4201 Advanced Accounting 4 hours
- ACC 4501 Federal Income Tax Accounting 4 hours
- ACC 4601 Auditing 4 hours

Restricted Electives (Select a minimum of 2 courses):

- ACC 3861 Governmental Accounting 4 hours
- ACC 4221 Consolidated Financial Statements 4 hours
- ACC 4421 Cost Analysis — Suggested for students planning to take ACC 4621 4 hours
- ACC 4521 Advanced Federal Income Tax 4 hours
- ACC 4621 Advanced Auditing — Suggested for students planning to take the CPA examination 4 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 6411 Cost Accounting for Management Decisions 5 hours
- ACC 6511 Taxation 5 hours
- ACC 6611 Advanced Auditing 5 hours
- ACC 6735 Computers and Information Systems in Accounting 5 hours
- ACC 6805 Contemporary Accounting Theory 5 hours
- ACC 6866 Specialized Accounting Problems 5 hours
- ECO 6111 Economic Analysis of the Firm 3 hours
- ECO 6415 Statistical Models for Business 3 hours
- MAR 6606 Research Methods 3 hours

4. Restricted Electives. Six hours of graduate coursework approved by the department, including MAN 6721 if no prior course in business policy.
5. Thesis: The MS does not require a thesis. However, students wishing to do research may (with the approval of the department) 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 45-116 hours

MASTER OF ARTS: APPLIED ECONOMICS

Student Advisor: F. Raffa, CB 444, Phone 275-2465

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


2. Prerequisites: The following prerequisites (or equivalents) must normally be completed before enrolling in 6000-level graduate economics courses:
   - ECO 5055 Economic Concepts 4 hours
   - ECO 5413 Statistics for Business and Economics 4 hours
   When classified as a regular graduate student, a student may register simultaneously for both prerequisite, if such enrollment completes the prerequisites and/or with the consent of the instructor, 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 Economics Analysis of the Firm 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
   - ECP 6704 Managerial Economics 3 hours
   - MAR 6606 Research Methods 3 hours
   - Total 18 hours

4. Restricted Electives: At least eighteen hours may be taken from elective courses offered by the Department on an approved basis. Up to nine hours of graduate credit may be accepted from coursework offered by other qualified graduate programs outside the Florida State University system and twelve hours of graduate level economic credit from Florida SUS Institutions.

5. Thesis and Internship: Either a thesis or an internship is required. A thesis may not exceed nine hours of graduate credit. Students may petition to enroll in an internship as an alternative to a thesis. The internship may not exceed six hours of graduate credit. An internship will require enrollment in ECO 6946 — Internship (6 hours) and ECO 6918 — Directed Independent Research (3 hours).

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

Total Quarter Hours Required 45-53 hours
COLLEGE OF EDUCATION

UNDERGRADUATE PROGRAMS

COMPREHENSIVE K-12
  Educational 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)
  Educational Media Specialist (MA) (M.Ed)
  Guidance (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)
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 designate the College of Education as their major college as early as this becomes their clear intent. Junior transfer students should enter Phase I of the professional education sequence during their first quarter in attendance.

As a prerequisite to full admission to the State approved Program of Teacher Education, students must score at or above the 40th percentile on the American College Testing Program (ACT, score 17) or the Scholastic Aptitude Test (SAT, score 835), have an overall academic average (G.P.A.) of 2.0, and have satisfactorily completed Phase I.

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 experience 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.

Beginning July 1, 1980, all applications for a teaching certificate in Florida must pass a written competency examination administered by the Florida State Department of Education. There currently exists an "interstate" agreement with several states and territories for College of Education graduates who desire to teach outside Florida. Persons who complete a Florida state approved program are certifiable upon completed application in any of the participant states.
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
Faculty: Anderson, Beadle, Bird, Blume, Chin, Cox, Esler, Green, Harlacher, Hynes, Joels, Manning, Merritt, Midgett, J. Miller, M. Miller, Olson, Palmer, Poe, Thompson

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 42 and 60)

2. Special college and/or department requirements
   (See pages 78 and 80)
   Majors are required to complete two mathematics courses (MAE 1810 and MAE 2811). Transfer students with only one mathematics course are required to complete MAE 3812.

   Majors are required to complete science credit in both biological and physical sciences. Designated physical science courses are PHY 3014, 3015, and 3016.

   It is recommended that majors assess their personal knowledge/skill in the areas of reading, mathematics, and writing as one condition of admission to the Program. Such action related to individual success in the Program and to successful completion of the written test required to secure a Florida teaching certificate.

3. Required Courses
   Professional:
   Phase I
   EDF 3255 Classroom Management & Learning 4 hours
   EDF 3603 Teaching Analysis 4 hours
### Phase II

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>RED 3012</td>
<td>Basic Foundations of Reading</td>
<td>3</td>
</tr>
<tr>
<td>EDE 3942</td>
<td>Elem School Student Teaching/Block A</td>
<td>3</td>
</tr>
<tr>
<td>EDE 3943</td>
<td>Elem School Student Teaching/Block B</td>
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<td>EDE 3411</td>
<td>Teaching &amp; Evaluation Elem School</td>
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</tr>
<tr>
<td>EDE 3301</td>
<td>Teaching Strategies in Elem School</td>
<td>3</td>
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### Phase III

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<tbody>
<tr>
<td>EDE 3201C</td>
<td>Elementary School Curriculum</td>
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<td>EDE 4943</td>
<td>Elem School Student Teaching/Block C</td>
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<tr>
<td>EDG 4938</td>
<td>Student Teaching Seminar</td>
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#### Specialization:

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>MAE 3310</td>
<td>Teaching Math in the Elem School</td>
<td>3</td>
</tr>
<tr>
<td>MAE 3311</td>
<td>Math Programs in the Elem School</td>
<td>3</td>
</tr>
<tr>
<td>MUE 3401</td>
<td>Music in the Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>LAE 3414</td>
<td>Literature for Children</td>
<td>4</td>
</tr>
<tr>
<td>RED 3310</td>
<td>Reading in the Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>SCE 3310</td>
<td>Teaching Science in the Elem School</td>
<td>3</td>
</tr>
<tr>
<td>SSE 3312</td>
<td>Teaching Soc Sci in the Elem School</td>
<td>3</td>
</tr>
<tr>
<td>LAE 4314</td>
<td>Language Arts in the Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>ARE 4313</td>
<td>Art in the Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>RED 4519</td>
<td>Classroom Diagnosis and Treatment of Reading Difficulties</td>
<td>3</td>
</tr>
<tr>
<td>SCE 4111</td>
<td>Science Programs in the Elem School</td>
<td>3</td>
</tr>
<tr>
<td>SSE 4113</td>
<td>Social Sci Programs in the Elem School</td>
<td>3</td>
</tr>
<tr>
<td>HLP 4460</td>
<td>Teaching Elem School Health &amp; Phy Educ</td>
<td>3</td>
</tr>
</tbody>
</table>

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.** In combination with preparation to teach grades one through six, a partial specialization is available which is concerned with knowledge, strategies, 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 advanced undergraduate level; remaining requirements at the graduate level).

3. **Music Education.** Preparation in Music Education is offered cooperatively with the Department of Music.
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 teaching 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.

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 42 and 60)

2. Special college and/or department requirements
   (See pages 78 and 82)

3. Required Courses

   Professional Education

   Phase I
   - EDF 3255 Classroom Management & Learning 4 hours
   - EDF 3603 Teaching Analysis 4 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, Schieber, 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 specialization in secondary or post-secondary schools. To be eligible for admission to the degree program, students must have worked full time in the occupation for at least two years and must demonstrate competence through an examination or licensure in the area in which they wish to teach.

A maximum of 45 quarter hours of 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, 2061, 3062, 2062, 2063, 2064, 3151, 4152, 3266, 4265, and 4366.
BACHELOR OF ARTS:  
BUSINESS EDUCATION (Comprehensive)  

Degree Requirements  
1. University graduation requirements  
   (See pages 42 and 60)  
2. Special college and/or department requirements  
   (See pages 78 and 84)  
3. Required Courses  

Professional Education  

<table>
<thead>
<tr>
<th>Phase</th>
<th>Course Description</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>I</td>
<td>Classroom Management &amp; Learning</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>Teaching Analysis</td>
<td>4 hours</td>
</tr>
<tr>
<td>II</td>
<td>Business Instructional Analysis</td>
<td>3 hours</td>
</tr>
<tr>
<td></td>
<td>Typewriting Laboratory</td>
<td>1 hour</td>
</tr>
<tr>
<td></td>
<td>Teaching Techniques</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>Teaching Strategies</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>Secondary School Student Teaching (A)</td>
<td>3 hours</td>
</tr>
<tr>
<td>III</td>
<td>Student Teaching Seminar</td>
<td>3 hours</td>
</tr>
<tr>
<td></td>
<td>Secondary School Student Teaching (C)</td>
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CORE  

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<tbody>
<tr>
<td>ACC 2304</td>
<td>Financial Accounting I</td>
</tr>
<tr>
<td>ACC 2324</td>
<td>Financial Accounting II</td>
</tr>
<tr>
<td>BTE 1060</td>
<td>Introductory Typewriting</td>
</tr>
<tr>
<td>BTE 2061</td>
<td>Type Production</td>
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<tr>
<td>BTE 3062</td>
<td>Professional Type Production</td>
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<tr>
<td>BTE 3266</td>
<td>Office Technology</td>
</tr>
<tr>
<td>BTE 4154</td>
<td>Office Simulation</td>
</tr>
<tr>
<td>BTE 4366</td>
<td>Business Correspondence</td>
</tr>
<tr>
<td>BUL 3111</td>
<td>Legal Environment of Business</td>
</tr>
<tr>
<td>CAP 3001</td>
<td>Comp Funds — Bus I</td>
</tr>
<tr>
<td>EVT 3602</td>
<td>Professional role of Vocational Education Teachers</td>
</tr>
<tr>
<td>BTE 4392</td>
<td>Bus Instructional Analysis II</td>
</tr>
<tr>
<td>BTE 4392L</td>
<td>Shorthand Laboratory</td>
</tr>
<tr>
<td>BTE 4393</td>
<td>Bus Instructional Analysis III</td>
</tr>
<tr>
<td>BTE 4393L</td>
<td>Office Technology Laboratory</td>
</tr>
<tr>
<td></td>
<td>Total Quarter Hours Required</td>
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</table>

4. Restricted Electives (See specialization requirements listed below)  

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>EVT 3562</td>
<td>Special Needs of Vocational Students</td>
</tr>
<tr>
<td>BTE 4071</td>
<td>Professional Student Leadership Development</td>
</tr>
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</table>

5. Electives  

AREAS OF SPECIALIZATION (Select one)  

1. Comprehensive  

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BTE 2063</td>
<td>Principles of Shorthand I</td>
</tr>
<tr>
<td>BTE 2064</td>
<td>Principles of Shorthand II</td>
</tr>
<tr>
<td>BTE 3151</td>
<td>Advanced Shorthand</td>
</tr>
<tr>
<td>BTE 4152</td>
<td>Shorthand Dictation and Transcription</td>
</tr>
<tr>
<td>BTE 4265</td>
<td>Office Systems Procedures</td>
</tr>
<tr>
<td>BTE 4392</td>
<td>Bus Instructional Analysis II</td>
</tr>
<tr>
<td>BTE 4392L</td>
<td>Shorthand Laboratory</td>
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<tr>
<td>BTE 4393</td>
<td>Bus Instructional Analysis III</td>
</tr>
<tr>
<td>BTE 4393L</td>
<td>Office Technology Laboratory</td>
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</table>
### 2. Basic Business and Accounting

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<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>ACC 3301</td>
<td>Management Accountancy</td>
<td>3</td>
</tr>
<tr>
<td>ACC 3101</td>
<td>Intermediate Accy I</td>
<td>3</td>
</tr>
<tr>
<td>BTE 4393</td>
<td>Bus Instructional Analysis III-Accy</td>
<td>3</td>
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<tr>
<td>BTE 4393L</td>
<td>Office Technology Laboratory</td>
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<tr>
<td>ECO 2013</td>
<td>Macroeconomics</td>
<td>4</td>
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<td>CAP 3002</td>
<td>Computer Fund Bus Applications — Bus II</td>
<td>3</td>
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<tr>
<td>MAN 3010</td>
<td>Management and Organization Behavior</td>
<td>3</td>
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<tr>
<td>MAR 3023</td>
<td>Marketing</td>
<td>5</td>
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</table>

### BACHELOR OF ARTS:

#### ENGLISH LANGUAGE ARTS EDUCATION

#### Degree Requirements

1. University graduation requirements
   
   (See pages 42 and 60)

2. Special college and/or department requirements
   
   (See pages 78 and 84)

3. Required Courses

#### Professional Education

**Phase I**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tr>
<td>EDF 3603</td>
<td>Teaching Analysis</td>
<td>4</td>
</tr>
<tr>
<td>EDF 3255</td>
<td>Classroom Management &amp; Learning</td>
<td>4</td>
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**Phase II**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ESE 3321</td>
<td>Teaching Techniques</td>
<td>4</td>
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<tr>
<td>ESE 3322</td>
<td>Teaching Strategies</td>
<td>4</td>
</tr>
<tr>
<td>ESE 3940</td>
<td>Secondary School Student Teaching (A)</td>
<td>3</td>
</tr>
<tr>
<td>LAE 3335</td>
<td>English Instructional Analysis</td>
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**Phase III**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>EDG 4938</td>
<td>Student Teaching Seminar</td>
<td>3</td>
</tr>
<tr>
<td>ESE 4943</td>
<td>Secondary School Student Teaching (C)</td>
<td>9</td>
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#### Composition

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CRW 2020</td>
<td>Principles of Creative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENC 1103</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>ENC 1135</td>
<td>Exploring Literature through Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENC 3412</td>
<td>Writing Skills</td>
<td>4</td>
</tr>
<tr>
<td>LAE 4342</td>
<td>Teaching Language and Composition</td>
<td>3</td>
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</table>

#### Literature

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AML 3101</td>
<td>American Literature 1588-1865</td>
<td>3</td>
</tr>
<tr>
<td>AML 3107</td>
<td>American Literature 1865-1914</td>
<td>3</td>
</tr>
<tr>
<td>AML 3111</td>
<td>American Literature since 1914</td>
<td>3</td>
</tr>
<tr>
<td>ENL 2011</td>
<td>English Literature to 1625</td>
<td>3</td>
</tr>
<tr>
<td>ENL 2018</td>
<td>English Literature 1626-1798</td>
<td>3</td>
</tr>
<tr>
<td>ENL 2025</td>
<td>English Literature 1798-1914</td>
<td>3</td>
</tr>
<tr>
<td>ENL 3028</td>
<td>British Literature since 1914</td>
<td>3</td>
</tr>
<tr>
<td>ENL 4131</td>
<td>Reading in Shakespeare</td>
<td>3</td>
</tr>
<tr>
<td>LAE 4464</td>
<td>Literature for Adolescents</td>
<td>3</td>
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<tr>
<td>LIT 2020</td>
<td>Literary Analysis</td>
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#### Language

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENG 4550</td>
<td>Modern English Grammar or</td>
<td>4</td>
</tr>
<tr>
<td>LIN 4304</td>
<td>Transformational Grammar</td>
<td>3</td>
</tr>
<tr>
<td>LIN 3010</td>
<td>Principles of Linguistics</td>
<td>3</td>
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</table>

#### Speech

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 1014</td>
<td>Fundamentals of Oral Communications</td>
<td>3</td>
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</table>
BACHELOR OF ARTS:
FOREIGN LANGUAGE EDUCATION

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 78 and 84)

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 Techniques  4 hours
   - ESE 3322  Teaching Strategies  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
   Total Quarter Hours Required  180

AREAS OF SPECIALIZATION (Select one)

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 42 and 60)

2. Special college and/or department requirements
   (See pages 78 and 84)

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 Techniques 4 hours
   - **ESE 3322** Teaching Strategies 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 4212** Modern Geometrics I 4 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**

<table>
<thead>
<tr>
<th>Electives</th>
<th>Total Quarter Hours Required</th>
</tr>
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<tbody>
<tr>
<td><strong>BACHELOR OF ARTS:</strong> SCIENCE EDUCATION <strong>Degree Requirements</strong></td>
<td><strong>180</strong></td>
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</table>

1. **University graduation requirements**  
(See pages 42 and 60)

2. **Special college and/or department requirements**  
(See pages 78 and 84)

3. **Required Courses**

**Professional Education**

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<thead>
<tr>
<th>Phase I</th>
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<tbody>
<tr>
<td>EDF 3255</td>
<td>Classroom Management &amp; Learning</td>
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<tr>
<td>EDF 3603</td>
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<table>
<thead>
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<tbody>
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<td>ESE 3321</td>
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<td>4 hours</td>
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<tr>
<td>ESE 3322</td>
<td>Teaching Strategies</td>
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<tr>
<td>ESE 3940</td>
<td>Secondary School Student Teaching (A)</td>
<td>3 hours</td>
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<tr>
<td>SCE 3330</td>
<td>Science Instructional Analysis</td>
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<table>
<thead>
<tr>
<th>Phase III</th>
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</thead>
<tbody>
<tr>
<td>ESE 4943</td>
<td>Secondary School Student Teaching (C)</td>
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</tr>
<tr>
<td>EDG 4938</td>
<td>Student Teaching Seminar</td>
<td>3 hours</td>
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4. **Restricted Electives**

<table>
<thead>
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<th>Electives</th>
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<tbody>
<tr>
<td>RED 4333</td>
<td>Teaching Reading in the Content Areas</td>
</tr>
<tr>
<td>Science Electives 3000-4000 level</td>
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(See Areas of Specialization)

5. **Electives**

<table>
<thead>
<tr>
<th>Electives</th>
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</thead>
<tbody>
<tr>
<td><strong>AREAS OF SPECIALIZATION (Select one)</strong></td>
<td><strong>180</strong></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Biological Sciences</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>BOT 1010C</td>
<td>General Botany</td>
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<tr>
<td>BSC 1010C</td>
<td>Basic Biology</td>
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<tr>
<td>PCB 3043C</td>
<td>Principles of Ecology</td>
<td>4 hours</td>
</tr>
<tr>
<td>PCB 3063C</td>
<td>Genetics</td>
<td>4 hours</td>
</tr>
<tr>
<td>MCB 2013C</td>
<td>General Microbiology</td>
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<tr>
<td>SCE 4374</td>
<td>Science Laboratory Teaching</td>
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<tr>
<td>ZOO 1010C</td>
<td>General Zoology</td>
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<tr>
<td>ZOO 3733C</td>
<td>Human Anatomy</td>
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<table>
<thead>
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<tr>
<td>BCH 3313</td>
<td>Clinical Biochemistry</td>
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<tr>
<td>CHM 1034</td>
<td>General Chemistry</td>
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<tr>
<td>CHM 2200</td>
<td>Introductory Organic Chemistry</td>
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<td>CHM 2205L</td>
<td>Organic Biochem Lab</td>
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</tr>
<tr>
<td>CHM 2046L</td>
<td>Chemistry Fundamentals Laboratory</td>
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</tbody>
</table>

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 2041C General Physics II 5 hours
PHY 2042C General Physics III 5 hours
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 42 and 60)

2. Special college and/or department requirements
   (See pages 78 and 84)

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 Techniques 4 hours
- ESE 3322 Teaching Strategies 4 hours
- ESE 3940 Secondary School Student Teaching (A) 3 hours
- SSE 3333 Social 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 42 and 60)

2. Special college and/or department requirements
   (See pages 78 and 84)

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 Techniques 4 hours
- ESE 3322 Teaching Strategies 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 42 and 60)

2. Special college and/or department requirements
   (See pages 78 and 84)

3. Required Courses

Professional Education

Phase I
- EVT 3371 Essential Teaching Skills in VOED 4 hours
- EVT 3390 Classroom Management and Learning 4 hours

Phase II
- EVT 3365 Methods of Tchg. in VOED Subjects 4 hours
- EVT 3366 Instructional Materials for VOED 4 hours
- EVT 3367 Evaluation of Vocational Instruction 4 hours
- EVT 3815 Management of Vocational 3 hours
  or Classroom and Lab
- EVT 3311 Preparation for Clinical Teaching 3 hours
  in VOED
- 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 VOED 4 hours
- EVT 4368 Advanced Teaching Techniques for VOED 4 hours
Phase III
EDG 4941 Directed Field Experience 12 hours

4. Restricted Electives (None)
5. Electives

Total Quarter Hours Required 121

AREAS OF SPECIALIZATION

1. Health Occupations 45 hours
   Students may complete a specialization in a Health Occupations area by meeting the licensure requirements for teacher certification set forth in the Florida Accreditor Code. Prior to admission to the degree program, the student must submit evidence of two years work experience at the professional, technician, or trained employee level.

2. Industrial-Technical 45 hours
   Prior to admission to the degree program, the student must submit evidence of two years work experience at the journeyman, technician, or trained employee level.

   Students may complete a specialization in an industrial/technical area by successfully passing both the written and the performance portions of the National Occupation Competency Test. There is a $155 administration fee charged for the test and it is normally given in the Fall and Spring quarters.

   The National Occupation Competency Test must be successfully completed before the student is eligible for EDG 4941, Directed Field Experience.

   A sample of National Occupation Competency Tests available:

   Automotive
   Air Conditioning & Refrigeration
   Architectural Drafting
   Audio-Visual Communication
   Automotive Body
   Brick Masonry
   Cabinet Making & Millwork
   Carpentry
   Cosmetology
   Commercial Art
   Diesel Engine
   Electrical Installation
   Electronics Communications
   Industrial Electrician
   Machine Drafting
   Machine Trades
   Major Appliance
   Masonry
   Printing
   Plumbing
   Power Sewing
   Quantity Food Preparation
   Sheet Metal
   Small Engine
   Tool & Die Making
   Welding
DEPARTMENT OF TEACHING ANALYSIS

Acting Chairman: V. Barr-Johnson, ED 320, Phone, 275-2426

Teaching Analysis services 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 foundations requirements and EDF 3255, Sociological Classroom Management and Learning (4QH) meets psychological foundations requirements. Successful completion of these courses meets requirements of Phase I, Analysis of Teaching; which is a 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 Educational Media Specialist.

BACHELOR OF ARTS: EDUCATIONAL MEDIA SPECIALIST

Degree Requirements
1. University graduation requirements
   (See pages 42 and 60)
2. Special college and/or department requirements
   (See pages 78 and 94)
3. 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
LIS 4453 School Media Services 4 hours
LAE 3414 Literature for Children 4 hours

4. Restricted Electives
   Electives in supportive areas to be selected on advice of Educational Media counselor.

5. Electives
   Total Quarter Hours Required 180
## BACHELOR OF ARTS: VISUAL ARTS EDUCATION

### Degree Requirements

1. **University graduation requirements**  
   (See pages 42 and 60)

2. **Special college and/or department requirements**  
   (See pages 78 and 94)

3. **Required Courses**

   **Professional Education**

   **Phase I — Analysis**
   - 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
   - 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

   **Specialization**
   - 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  3 hours
   - ART 4166C  Metals, Woods  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 noneducation 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 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 31 and 54)

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
2. Prerequisites: None
3. Required Courses: EDF 6481, Research Methods; various other courses, practica 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.

<table>
<thead>
<tr>
<th>Total Quarter Hours Required</th>
<th>45-60 (varies with specialty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Option</td>
<td>None</td>
</tr>
<tr>
<td>Non-Thesis Option</td>
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</tr>
</tbody>
</table>

**AREAS OF SPECIALIZATION**

Administration & Supervision
Business Education (Comprehensive)
Elementary Education
English Language Arts Education
Exceptional Child
Foreign Language Education
Educational Media Specialist
Guidance
Mathematics Education
Music Education
Physical Education
Reading Specialist
Science Education
Social Science Education
Speech Education
Visual Arts Education
Vocational Education

**MASTER OF ARTS**

**ADMISSION REQUIREMENTS**

1. University Admission Requirements
   (See pages 31 and 54)

2. College or Program Admission Requirements

**Degree Requirements**


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.

<table>
<thead>
<tr>
<th>Total Quarter Hours Required</th>
<th>54-60 (varies with specialty)</th>
</tr>
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</tr>
<tr>
<td>Non-Thesis Option</td>
<td>None</td>
</tr>
</tbody>
</table>

**AREAS OF SPECIALIZATION**

Administration & Supervision
Business Education (Comprehensive)
Elementary Education
English Language Arts Education
Exceptional Child
Foreign Language Education  
Educational Media Specialist  
Guidance  
Mathematics Education  
Music Education  
Physical Education  
Reading Specialist  
Science Education  
Social Science Education  
Speech Education  
Visual Arts Education  
Vocational Education

MASTER OF SCIENCE
ADMISSION REQUIREMENTS

1. University Admission Requirements  
   (See pages 31 and 54)

2. College or Program Admission Requirements

Degree Requirements


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: 90
   Thesis Option: None
   Non-Thesis Option: None

AREA OF SPECIALIZATION

School Psychology

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, and Exceptional Child 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 (MSES M)

DOCTORAL PROGRAM

Electrical Engineering (Ph.D.)

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.
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 3½ 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 the 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 professional 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 in the basic phase 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 plus selected 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

The engineering core consists of basic and professional subject matter that 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.

### BASIC PHASE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>COP 3215</td>
<td>Programming and Numerical Methods</td>
<td>3</td>
</tr>
<tr>
<td>EGN 1111</td>
<td>Engineering Graphic</td>
<td>3</td>
</tr>
<tr>
<td>EGN 1380, 1381</td>
<td>Chemical Foundations of Engineering</td>
<td>6</td>
</tr>
<tr>
<td>EGN 1510</td>
<td>Creative Design</td>
<td>3</td>
</tr>
<tr>
<td>EGN 2382</td>
<td>Engineering Concepts</td>
<td>4</td>
</tr>
<tr>
<td>EGN 3311</td>
<td>Engineering Analysis-Statics</td>
<td>4</td>
</tr>
<tr>
<td>EGN 3363</td>
<td>Structure and Properties of Materials</td>
<td>4</td>
</tr>
<tr>
<td>EGN 3383</td>
<td>Electrical Science</td>
<td>4</td>
</tr>
<tr>
<td>EGN 3613</td>
<td>Engineering Economic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EGN 3704</td>
<td>Engineering and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENC 3355</td>
<td>Professional Report Writing</td>
<td>3</td>
</tr>
<tr>
<td>MAC 2154</td>
<td>Analytic Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MAC 3311, 3312, 3313</td>
<td>Calculus</td>
<td>12</td>
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<td>MAC 3314</td>
<td>Intermediate Calculus</td>
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<tr>
<td>Biological or Earth Science Elective</td>
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### PROFESSIONAL PHASE

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<th>Course</th>
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<tr>
<td>EGN 3321</td>
<td>Engineering Analysis-Dynamics</td>
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<tr>
<td>EGN 3331</td>
<td>Mechanics of Materials</td>
<td>5</td>
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<tr>
<td>EGN 3343</td>
<td>Thermodynamics</td>
<td>4</td>
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<tr>
<td>EGN 3353</td>
<td>Fluid Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>EGN 3373</td>
<td>Principles of Electrical Engineering</td>
<td>4</td>
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<td>EGN 3375</td>
<td>Electrical Devices and Systems</td>
<td>4</td>
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<tr>
<td>EGN 3703</td>
<td>Systems Analysis²</td>
<td>4</td>
</tr>
<tr>
<td>or EGN 4714</td>
<td>Linear Control Systems²</td>
<td>4</td>
</tr>
<tr>
<td>EGN 4624</td>
<td>Engineering Administration</td>
<td>3</td>
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<tr>
<td>EGN 4634</td>
<td>Operations Research</td>
<td>3</td>
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<tr>
<td>MAP 3302</td>
<td>Differential Equations</td>
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<td>PHY 3101</td>
<td>Modern Physics</td>
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<td>PHY 3421</td>
<td>Optics and Wave Motion</td>
<td>3</td>
</tr>
<tr>
<td>STA 3032</td>
<td>Probability and Statistics for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Includes scientific requirements and advanced program electives of the Environmental Studies Program.

2 Consult Department Chairman for specific courses required in option.

DEPARTMENT OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCES

Chairman: M. Wanielista, EN 410, Phone 275-2841
Faculty: Block, Brown, Carroll, Fagan, Hartman, Hayden, Jenkins, Kersten, McLellan, 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 Accreditation Board for Engineering and Technology (ABET).

**BACHELOR OF SCIENCE IN ENGINEERING**

**CIVIL ENGINEERING**

*Degree Requirements*

1. University graduation requirements
   (See page 42)

2. Environmental studies requirements
   (See page 60)

3. Engineering core requirements
   (See page 103)

4. Required Courses
   - CES 4124 Structural Engineering Analysis 4 hours
   - CES 4605 Structural Steel Design 4 hours
   - CES 4704 Structural Concrete Design 4 hours
   - ECI 4305 Geotechnical Engineering I 4 hours
   - ECI 4323 Civil Engineering Systems Design 3 hours
   - ENV 4404 Environmental Engineering — Water Supply 4 hours
   - ENV 4504 Environmental Engineering — Wastewater 4 hours
   - TTE 4004 Transportation Engineering 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. 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 42)

2. Environmental studies requirements
   (See page 60)
3. Engineering core requirements
   (See page 103)

4. Required Courses
   
   EES 4202  Chemical Process Control  3 hours
   EES 4204  Biological Process Control  3 hours
   ENV 4119  Air Pollution  3 hours
   ENV 4355  Solid and Hazardous Wastes  3 hours
   ENV 4404  Environmental Engineering — Water Supply  4 hours
   ENV 4434  Environmental Engineering — 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. Must include at least one design course.  16 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, Mathews, Miller, Patz, Petrasko, Phillips, 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 Accreditation Board for Engineering and Technology (ABET).

BACHELOR OF SCIENCE IN ENGINEERING:
ELECTRICAL ENGINEERING

Degree Requirements

1. University graduation requirements
   (See page 42)

2. Environmental studies program
   (See page 60)
3. Engineering core requirements  
(See page 103)

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 3552C 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, and must include one additional design course 19 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, Petrasko

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 Accreditation Board for Engineering and Technology (ABET).
BACHELOR OF SCIENCE IN ENGINEERING: ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS

Degree Requirements

1. University graduation requirements
   (See page 42)

2. Environmental studies program
   (See page 60)

3. Engineering core requirements
   (See page 103)

4. Required Courses
   ECM 4124  Engineering Mathematical Systems  3 hours
   ECM 4504  Mini-Computers in Engineering Systems  4 hours
   ECM 4814  Real Time Computer Systems  4 hours
   EEL 4342  Logical Component Design  4 hours
   EGN 4714  Linear Control Systems  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

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 Accreditation Board for Engineering and Technology (ABET).
BACHELOR OF SCIENCE IN ENGINEERING: INDUSTRIAL ENGINEERING

Degree Requirements

1. University graduation requirements
   (See page 31)

2. Environmental studies program
   (See page 60)

3. Engineering core requirements
   (See page 103)

4. Required Courses
   ACC 3812 Accounting for Engineers 4 hours
   EIN 3315 Work Measurement and Design 4 hours
   EIN 4116 Industrial Information Systems 3 hours
   EIN 4243 Human Engineering 3 hours
   EIN 4332 Production and Inventory Systems 3 hours
   EIN 4364 Industrial Facilities Planning and Design 4 hours
   ESI 4314 Operations Research Models 3 hours
   ESI 4234 Engineering Reliability in Quality Assurance 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

DEPARTMENT OF MECHANICAL ENGINEERING AND AEROSPACE SCIENCES

Chairman: B. Eno, EN 115, Phone 275-2416
Faculty: Beck, Bishop, Chang, Evans, Hagedoorn, Hosler, Minardi, Nuckolls, Smith, Ventre, 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 subdisciplines of aerospace sciences, measurement 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 Accreditation Board for Engineering and Technology (ABET).

BACHELOR OF SCIENCE IN ENGINEERING:
MECHANICAL ENGINEERING

Degree Requirements

1. University graduation requirements
   (See page 31)

2. Environmental studies program
   (See page 60)

3. Engineering core requirements
   (See page 103)

4. Required Courses
   EML 3106 Thermodynamics of Mechanical Systems 4 hours
   EML 3262 Kinematics of Mechanisms 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. 12 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, Hubler, Lewis, Osborne

The Engineering Technology Degree Program at UCF includes only the upper division (junior and senior years) and is designated 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 a 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, and all are accredited by the Accreditation Board for Engineering and Technology (ABET). 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 42)

2. Environmental studies requirement (See page 60)
   Basic (54 hours)
   Community College (39 hours)¹
   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 Specialty²   48 hours
   Environmental Studies (Includes Science & Math)   39 hours
   Related Studies   9 hours
   TOTAL (Maximum transfer)   96 hours

   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
   ECO 2000     Economics and Man   3 hours
   TOTAL   33 hours

¹Includes 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.

²Includes one course in Fortran computer programming.
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
TOTAL 32 hours

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)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETI 3611</td>
<td>Work Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ETI 3651</td>
<td>Computer Methods in Industry</td>
<td>3</td>
</tr>
<tr>
<td>ETI 3654</td>
<td>Cost Estimating and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ETI 4640</td>
<td>Process Planning and Scheduling</td>
<td>3</td>
</tr>
<tr>
<td>ETI 4700</td>
<td>Occupational Safety</td>
<td>3</td>
</tr>
<tr>
<td>MAP 3401</td>
<td>Problem Analysis</td>
<td>4</td>
</tr>
</tbody>
</table>

Electives (12 hours)
At least two courses must be selected from the courses below.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCN 3761</td>
<td>Contracts and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4220</td>
<td>Construction Methods</td>
<td>3</td>
</tr>
<tr>
<td>ETC 4410</td>
<td>Structural Design</td>
<td>4</td>
</tr>
<tr>
<td>ETI 3690</td>
<td>Technical Sales</td>
<td>3</td>
</tr>
<tr>
<td>ETI 3440</td>
<td>Product Design</td>
<td>4</td>
</tr>
<tr>
<td>ETI 4110</td>
<td>Industrial Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>ETI 4452</td>
<td>Plant Maintenance Operations</td>
<td>3</td>
</tr>
<tr>
<td>ETI 4661</td>
<td>Plant Layout &amp; Material Handling</td>
<td>3</td>
</tr>
<tr>
<td>ETM 4750</td>
<td>Applied Air Conditioning</td>
<td>4</td>
</tr>
</tbody>
</table>
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 MSESM). 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, interdepartmental, 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.

With the exception of the recently instituted Civil Engineering option, 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 31 and 54)
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 subdiscipline beyond B.S.E. requirements 19-26 hours
4. Restricted Electives: Additional subdiscipline-specialty courses
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)  3 hours
   or
   CES 6707  Concrete Design (3)  4 hours
   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)  4 hours
   or
   TTE 5720  Design Elements of Transportation Systems (4)  22 hours

2. ELECTRICAL ENGINEERING OPTION: At least one course from each of four 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
   or
   19 hours

4. ENVIRONMENTAL ENGINEERING OPTION: The student will take the following Environmental Engineering Core and Specialty Courses.

   ENV 5615  Environmental Impact Assessment  3 hours
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV 5625</td>
<td>Water Resources Engineering</td>
<td>4</td>
</tr>
<tr>
<td>ENV 6015</td>
<td>Physical/Chemical Treatment Systems</td>
<td>4</td>
</tr>
<tr>
<td>ENV 6016</td>
<td>Biological Treatment Systems</td>
<td>4</td>
</tr>
<tr>
<td>ENV 6017</td>
<td>Unit Operations and Processes Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>ENV 6106</td>
<td>Atmospheric Pollution Control</td>
<td>3</td>
</tr>
<tr>
<td>ENV 6518</td>
<td>Industrial Waste Treatment</td>
<td>4</td>
</tr>
</tbody>
</table>

**5. INDUSTRIAL ENGINEERING OPTION:** The core requirements for all students will be met by the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIN 5117</td>
<td>Management Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>EIN 6215</td>
<td>Systems Safety</td>
<td>3</td>
</tr>
<tr>
<td>EIN 6337</td>
<td>Production and Inventory Control</td>
<td>4</td>
</tr>
<tr>
<td>EIN 6357</td>
<td>Engineering Economic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STA 5156</td>
<td>Probability for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>ESI 5234</td>
<td>Engineering Reliability &amp; Qual. Assur.</td>
<td>3</td>
</tr>
<tr>
<td>ESI 6316</td>
<td>Operations Research I</td>
<td>3</td>
</tr>
<tr>
<td>STA 5326</td>
<td>Statistics for Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

**5. INDUSTRIAL ENGINEERING OPTION:** The core requirements for all students will be met by the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES 5102</td>
<td>Intermediate Mechanics of Materials</td>
<td>4</td>
</tr>
<tr>
<td>EML 5271</td>
<td>Intermediate Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>EML 5609</td>
<td>Environmental Thermodynamics</td>
<td>4</td>
</tr>
<tr>
<td>EML 6154</td>
<td>Conduction Heat Transfer</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EML 6155</td>
<td>Convection Heat Transfer</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
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<td></td>
</tr>
<tr>
<td>EML 6157</td>
<td>Radiation Heat Transfer</td>
<td>4</td>
</tr>
<tr>
<td>EML 6530</td>
<td>Principles of Design</td>
<td>3</td>
</tr>
<tr>
<td>EML 6710</td>
<td>Gas Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EML 6712</td>
<td>Mechanics of Viscous Flow</td>
<td>4</td>
</tr>
</tbody>
</table>

**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 31 and 54)

2. Program Admission Requirements
   (See page 114 for College 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: 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 31 and 54)
2. Program Admission Requirements
   (See page 114 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

UNDERGRADUATE PROGRAMS
Communicative Disorders (BA)  
Medical Record Administration (BS)  
Medical Technology (BS)  
Nursing (BS)  
Radiologic Sciences (BS)  
Respiratory Therapy (BS)

GRADUATE PROGRAM
Communicative Disorders (MA)

OTHER PROGRAMS
Pre-Occupational Therapy  
Pre-Physical Therapy

To meet the needs of students and the community the College of Health 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 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 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: Bradley, 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 42 and 60)

2. Special college and/or department requirements
   (See page 118)

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 5 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

PROGRAM IN HEALTH SCIENCES

Director: T. Mendenhall, BL 306, Phone 275-2741
Faculty: Bergner, Elder

The Health Sciences program provides several courses to broaden the student's understanding of health care and provide counseling in pre-physical and pre-occupational therapy.

MINOR

The Program of Health Sciences offers a minor consisting of a minimum of 24 quarter hours.

Required courses: HSC 3328, 3081, and 4101; a minimum of 14 hours of upper division courses in the College of Health (College of Health majors may not count courses presently required of a College program).

PROGRAM IN MEDICAL RECORD ADMINISTRATION

Director: M. Neill, BL 304, Phone 275-2741
Faculty: Kuyper

The Medical record administrator is a vital member of the health care team and is the professional responsible for (1) the acquisition and supervision of complete medical records on each patient, (2) design and management of health information systems which collect, process, store, retrieve, and release health information and statistics, and (3) assistance to hospital administration and medical staff in developing criteria for medical care evaluation studies by abstraction of medical data and preparation of statistical reports.
The curriculum of the Medical Record Administration program is approved by the Committee on Allied Health Education and Accreditation of the American Medical Association in collaboration with the Committee on Education and Registration of the American Medical Record Association.

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 and a course in data processing.

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.

Application and acceptance to the University does not constitute admission to the program. Separate application must be made directly to the MRA program prior to March 1 of the year in which prerequisites have been met, to be considered an applicant. A cumulative grade point average of 2.5 or better and a minimum grade of C in the major and prerequisite courses is required for admission and continuation in the upper division MRA program. A personal interview is also a requirement.

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.

BACHELOR OF SCIENCE: MEDICAL RECORD ADMINISTRATION

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See page 118) 7 hours

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 & II  Fundamentals of Medicine I & II  8 hours
   HSC 4512  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  2 hours

121
MRE 4304 Medical Record Department Management 3 hours
MRE 4312C Analysis of Medical Record Department Operations 3 hours
MRE 4400C Health Care Records 3 hours
MRE 4410 Medical Care Evaluation Procedures 5 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 Total Quarter Hours Required 9 hours 182

PROGRAM IN MEDICAL TECHNOLOGY
Director: M. Kangelos, BL 303, Phone 275-2741
Faculty: Heinson

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.

Admission to the University does not constitute admission to the upper division Medical Technology Program. Separate application must be made through the Medical Technology Office prior to March 1 of the year for which admission is sought. An applicant must meet the following requirements to be considered for this upper division program; (1) a minimum overall grade point average of 2.5, (2) a minimum grade of C in all major and prerequisite courses. A minimum grade of a C in all major courses is required for continuation in the program.

The degree in Medical Technology will be awarded upon completion of the University's didactic program and the clinical program in an affiliated hospital.

Upon receiving the degree in Medical Technology, the graduate will be eligible to write a national certification examination and the State of Florida licensure examination.
### BACHELOR OF SCIENCE: MEDICAL TECHNOLOGY

#### Degree Requirements

1. **University graduation requirements**  
   (See pages 42 and 60)

2. **Special college requirements**  
   (See page 118)

3. **Required Courses**

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<td>MCB 2013C</td>
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<td>Techniques in Clinical Microscopy</td>
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4. **Restricted electives**  
   none

5. **Electives**  
   Total Quarter Hours Required  
   none  
   193
NURSING PROGRAM
Program Director: L. Eldredge, BL 103, Phone 275-2744
Faculty: Gordon, Green, 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 42 and 60)
2. Special college requirements
   (See pages 118 and 124)
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 Introductory Organic Chemistry  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 3011 Human Nutrition  4 hours
   NUR 3725C Pathophysiology & Physical Assessment  6 hours
   NUR 3726C I and II  6 hours
   NUR 3618C Nursing During Alterations in Life Patterns  8 hours
   NUR 3134, Scientific Theories of Nursing I, II, III, and IV
   4207, 4411, NUU 4225  21 hours
   NUR 3134L, Nursing Intervention I, II, III and IV
   4207, 4411L, NUU 4225L  22 hours
4. Restricted Electives

SOW 3104  Human Growth and Development  4 hours
or
DEP 3004  Developmental Psychology
PCB 3703C  Human Physiology
ENC 3355  Professional Report Writing II
To be selected in consultation with faculty advisor

5. Electives

Total Quarter Hours Required  12 hours

PROGRAM IN RADIOLOGIC SCIENCES

Director: M. Jo Geren-Edwards, 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 Committees 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 42 and 60)

2. Special college requirements
(See pages 118 and 125)

3. Required Courses

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<td>RTE 4569</td>
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4. Restricted Electives

**Option I — Group A (all courses)**

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<td>RTE 4207</td>
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**Option II* — Group A (all courses)**

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<td>EVT 3062</td>
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*Required for Florida Teaching Certification

5. Electives

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</table>

Total Quarter Hours Required: 188
Respiratory Therapy is one of the newest and fastest growing of the health professions. The field over the past thirty years has grown 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 42 and 60)

2. Special college requirements
   (See pages 118 and 127)

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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC 1104</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>STA 3023</td>
<td>Fundamentals of Probability and Statistics</td>
<td>4</td>
</tr>
<tr>
<td>CAP 3001</td>
<td>Computer Fundamentals for Business Applications I</td>
<td>3</td>
</tr>
<tr>
<td>MAN 3006</td>
<td>Management and Organization Behavior</td>
<td>3</td>
</tr>
<tr>
<td>EVT 4006</td>
<td>Philosophy and Principles of Technical Education</td>
<td>4</td>
</tr>
<tr>
<td>GEB 3304</td>
<td>Management</td>
<td>3</td>
</tr>
<tr>
<td>EVT 3062</td>
<td>Professional Role of the Vocational Teacher</td>
<td>4</td>
</tr>
<tr>
<td>ENC 3355</td>
<td>Professional Report Writing II</td>
<td>3</td>
</tr>
<tr>
<td>HSC 4511</td>
<td>Fundamentals of Medicine I</td>
<td>3</td>
</tr>
<tr>
<td>RET 3031</td>
<td>Introduction to Clinical Practice</td>
<td>1</td>
</tr>
<tr>
<td>RET 3026</td>
<td>Introduction to Respiratory Equipment</td>
<td>3</td>
</tr>
<tr>
<td>RET 3027</td>
<td>Respiratory Equipment Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>APB 3263</td>
<td>Pulmonary Physiology</td>
<td>3</td>
</tr>
<tr>
<td>APB 3263L</td>
<td>Pulmonary Physiology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>RET 3264</td>
<td>Respiratory Equipment Function</td>
<td>3</td>
</tr>
<tr>
<td>RET 3265L</td>
<td>Respiratory Equipment Function Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>RET 3442</td>
<td>Cardiopulmonary Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>RET 3244</td>
<td>Life Support Systems</td>
<td>3</td>
</tr>
<tr>
<td>RET 3245L</td>
<td>Life Support Systems Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>APB 3600</td>
<td>Introduction to Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>RET 3483</td>
<td>Assessment of Respiratory Diseases</td>
<td>3</td>
</tr>
<tr>
<td>RET 4414</td>
<td>Pulmonary Function Studies</td>
<td>3</td>
</tr>
<tr>
<td>RET 4415L</td>
<td>Pulmonary Function Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>APB 4610</td>
<td>Medical Pharmacology I and II</td>
<td>6</td>
</tr>
<tr>
<td>APB 4650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RET 4435</td>
<td>Chest Medicine</td>
<td>3</td>
</tr>
<tr>
<td>RET 4034</td>
<td>Problems in Patient Management</td>
<td>2</td>
</tr>
<tr>
<td>RET 4714</td>
<td>Respiratory Pediatrics</td>
<td>3</td>
</tr>
<tr>
<td>RET 3874</td>
<td>Clinical Practice I</td>
<td>5</td>
</tr>
<tr>
<td>RET 3875</td>
<td>Clinical Practice II</td>
<td>5</td>
</tr>
<tr>
<td>RET 4876</td>
<td>Clinical Practice III</td>
<td>5</td>
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<tr>
<td>RET 4877</td>
<td>Clinical Practice IV</td>
<td>5</td>
</tr>
<tr>
<td>RET 4878</td>
<td>Clinical Practice V</td>
<td>5</td>
</tr>
<tr>
<td>RET 4284</td>
<td>Cardiopulmonary Diagnostics</td>
<td>3</td>
</tr>
<tr>
<td>RET 4285L</td>
<td>Cardiopulmonary Diagnostics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>RET 4616</td>
<td>Cardiopulmonary Services</td>
<td>3</td>
</tr>
<tr>
<td>EVT 4380</td>
<td>Methods of Teaching Technical Subjects</td>
<td>5</td>
</tr>
<tr>
<td>MCB 3203C</td>
<td>Pathogenic Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>PCB 3233</td>
<td>Immunology</td>
<td>3</td>
</tr>
<tr>
<td>RET 4262</td>
<td>Neonatal Mechanical Ventilation</td>
<td>3</td>
</tr>
<tr>
<td>RET 4104</td>
<td>Respiratory Therapy Educational Systems</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RET 4284</td>
<td>Cardiopulmonary Diagnostics</td>
<td>3</td>
</tr>
<tr>
<td>RET 4285L</td>
<td>Cardiopulmonary Diagnostics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>RET 4616</td>
<td>Cardiopulmonary Services</td>
<td>3</td>
</tr>
<tr>
<td>EVT 4380</td>
<td>Methods of Teaching Technical Subjects</td>
<td>5</td>
</tr>
<tr>
<td>MCB 3203C</td>
<td>Pathogenic Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>PCB 3233</td>
<td>Immunology</td>
<td>3</td>
</tr>
<tr>
<td>RET 4262</td>
<td>Neonatal Mechanical Ventilation</td>
<td>3</td>
</tr>
<tr>
<td>RET 4104</td>
<td>Respiratory Therapy Educational Systems</td>
<td>2</td>
</tr>
</tbody>
</table>

5. Electives

Total Quarter Hours Required: None

187
Professional education is offered in Communicative Disorders leading to the Master of Arts degree in either Speech/Language Pathology or Audiology. The program requires the equivalent of two years of full-time attendance to complete and is designed to meet the certification requirements of the American Speech/Language and Hearing Association for the Certificate of Clinical Competence.

The faculty is keenly aware of the need for combining clinical skills with theoretical foundations. Supervised student practica are offered in the Communicative Disorders Clinic on campus as well as in external settings. Selected outstanding professionals in Central Florida (physicians, speech/language pathologists, audiologists) make up the clinical faculty which supplement the clinical expertise of the regular faculty.

Admission Requirements
1. University Admission Requirements
   (See pages 31 and 54)

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.
   c. A personal interview is suggested when possible.

Degree Requirements
1. University Graduate Policies and Procedures
   See the current U.C.F. Graduate Procedures Manual, available in the Office of Graduate Studies.

2. Prerequisites: B.A. in Speech and Hearing (Communicative Disorders) or special prerequisite courses to be arranged with the program coordinator.
3. Required Courses: The following courses are required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA 5937</td>
<td>ST: Therapeutic Communication</td>
<td>4</td>
</tr>
<tr>
<td>SPC 6219</td>
<td>Modern Communication Theory</td>
<td>4</td>
</tr>
<tr>
<td>COM 6300</td>
<td>Intro to Grad Study in Communication</td>
<td>4</td>
</tr>
<tr>
<td>COM 6312</td>
<td>Research Methods</td>
<td>4</td>
</tr>
</tbody>
</table>

4. Restricted electives:

Students will select one course in the “Systems” sub-specialty (a) and one course in the “Legal” sub-specialty (b).

a. SPA 6938 ST: Advanced Clinical/Diagnostic Procedures 4 hours
 SPA 6345 Auditory Amplification 4 hours

b. SPA 5556 Communicative Disorders in Public Schools 4 hours
 SPA 6354 Industrial Audiology 4 hours

A grade of B or better must be obtained in each required course.

All advanced course work (30 quarter hours) and clinical experience needed in preparing the student to function as a professional practitioner are included in this section of the curriculum. Examples are courses that provide in-depth knowledge of communication processes, their development, and disorders associated with them. Evaluation procedures for specific disorders, clinical techniques for improving disorders, and knowledge of instrumentation are studied in advanced courses. Each student will select courses in this category with the approval of the advisor.

5. THESIS REQUIREMENTS: (6 quarter hours)

Each student will choose to complete a thesis or select the non-thesis option. The thesis students will complete a research study in the area of Speech/Language Pathology or Audiology for 6 quarter hours of credit. The non-thesis students will complete 2 quarter hours of directed independent research and a 4 quarter hour clinical project. The thesis students will work with a graduate committee composed of three faculty members while the non-thesis students may work with only one faculty member.

6. EXAMINATIONS:

An end-of-program (final) comprehensive examination on coursework is required. This examination must be passed before a student can be considered a degree candidate. An oral defense of the thesis is required for those students choosing the thesis option.

Total Quarter Hours Required 60
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)
History (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, to 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, 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:

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Program (basic ESP and electives or AA Degree)</td>
<td>90 hours</td>
</tr>
<tr>
<td>Main area</td>
<td>30 hours</td>
</tr>
<tr>
<td>Secondary area</td>
<td>24 hours</td>
</tr>
<tr>
<td>Secondary area</td>
<td>12 hours</td>
</tr>
<tr>
<td>Upper Division ESP</td>
<td>15 hours</td>
</tr>
<tr>
<td>Electives</td>
<td>9 hours</td>
</tr>
<tr>
<td>Total</td>
<td>180 hours</td>
</tr>
</tbody>
</table>

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 REQUIREMENTS

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.

DEPARTMENT OF ART
Acting Chairman: C. Wellman, FA 525, Phone 275-2676
Faculty: Chavda, Ehlbeck, Eyfells, Guadnek, Lotz, 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 42 and 60)
2. Special college and/or department requirements
   (See page 131)
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
11 Art History
   Required Courses
   ARH 2050, 2051, 2052 History of Art I, II, III 9 hours
   Restricted Electives
   a) Any Two:
      ART 2201C, 2202C, 2203C Design Fundamentals I, II, III
      ART 3630C or RTV 3310 6 hours
   b) Any one:
      ARH 4020 Developing Visual Creativity
      PHI 3800 Aesthetics
      THE 4072 Principles of Motion Picture Art 4 hours
   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:
ARH 4020 Developing Visual Creativity 4 hours
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 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 stu-
dent'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, Paint-
ing, Photography, Printmaking, Sculpture.

BACHELOR OF FINE ARTS: ART
The B.F.A. degree is recommended for those students who successfully peti-
tion 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 42 and 60)

2. Special college and/or department requirements
(See page 131)

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
ART 2301C
ART 3330C, 3331C, 3332C Intermediate Drawing I, II, III
ART 4965 Senior Studio and Exhibition*

4. Restricted Electives
   a) ART History and Theory
      Any 3000 and 4000 level Art History and Theory Courses
      14-15 hours
   b) Any one:
      PHI 3800 Aesthetics
      THE 4072 Principles of Motion Picture Art
      11-12 hours
   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


*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, 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 42 and 60)

2. Special college and/or department requirements
   (See page 131)

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 3011  Survey of English Literature to 1625  3 hours
ENL 3018  Survey of English Literature 1626-1798  3 hours
ENL 3025  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 3011  Survey of English Literature to 1625  3 hours
ENL 3018  Survey of English Literature 1626-1798  3 hours
ENL 3025  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
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)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIN 3010</td>
<td>Principles of Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>ENG 4550</td>
<td>Modern English Grammar</td>
<td>4</td>
</tr>
<tr>
<td>ENG 4512</td>
<td>History of the English Language</td>
<td>3</td>
</tr>
<tr>
<td>LIN 4304</td>
<td>Transformational Grammar</td>
<td>3</td>
</tr>
<tr>
<td>LIN 4474</td>
<td>Language and Meaning</td>
<td>3</td>
</tr>
</tbody>
</table>

**Literature (18 quarter hours to be selected from the following)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIT 2020</td>
<td>Literary Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ENL 3011</td>
<td>Survey of English Literature to 1625</td>
<td>3</td>
</tr>
<tr>
<td>ENL 3018</td>
<td>Survey of English Literature 1626-1798</td>
<td>3</td>
</tr>
<tr>
<td>ENL 3025</td>
<td>Survey of English Literature 1798-1914</td>
<td>3</td>
</tr>
<tr>
<td>AML 3101</td>
<td>Survey of American Literature 1588-1865</td>
<td>3</td>
</tr>
<tr>
<td>AML 3107</td>
<td>Survey of American Literature 1865-1914</td>
<td>3</td>
</tr>
<tr>
<td>AML 3111</td>
<td>Survey of American Literature Since 1914</td>
<td>3</td>
</tr>
<tr>
<td>ENL 3028</td>
<td>Survey of British Literature Since 1914</td>
<td>3</td>
</tr>
<tr>
<td>ENG 3220</td>
<td>Continental European Fiction Since 1900</td>
<td>3</td>
</tr>
<tr>
<td>LIT 3240</td>
<td>World Literature I</td>
<td>4</td>
</tr>
<tr>
<td>LIT 3257</td>
<td>World Literature II</td>
<td>4</td>
</tr>
</tbody>
</table>

**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**

**Acting Chairman:** A. Payas, FA 436, Phone 275-2641

**Faculty:** Barsch, Cervone, DiPierro, Micarelli, Payas, Taylor

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 sec-
ond 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 42 and 60)
2. Special college and/or department requirements
   (See pages 131 and 139)
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 42 and 60)
2. Special college and/or department requirements
   (See pages 131 and 139)
3. Required Courses for Combined Major in Foreign Languages

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3240</td>
<td>Conversation</td>
<td>4 hours</td>
</tr>
<tr>
<td>3420</td>
<td>Composition</td>
<td>4 hours</td>
</tr>
<tr>
<td>3100</td>
<td>Survey of Literature I</td>
<td>4 hours</td>
</tr>
<tr>
<td>3101</td>
<td>Survey of Literature II</td>
<td>4 hours</td>
</tr>
<tr>
<td>3102</td>
<td>Survey of Literature III</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

4. Restricted Electives

- 20 credits in first language
- 8 credits in second language

Students are required to choose two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIN 4906</td>
<td>Articulatory Phonetics</td>
<td>3-5 hours</td>
</tr>
<tr>
<td>ENG 4550</td>
<td>Modern English Grammar</td>
<td>4 hours</td>
</tr>
<tr>
<td>LIN 3010</td>
<td>Principles of Linguistics</td>
<td>3 hours</td>
</tr>
<tr>
<td>Other restricted electives</td>
<td></td>
<td>24 hours</td>
</tr>
</tbody>
</table>

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 1980. 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, 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: 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 42 and 60)

2. Special college and/or department requirements
   (See pages 131 and 142)

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

Acting Chairman: P. Riley, FA 416, Phone 275-2273
Faculty: Flick, Jones, Kassim, Levensohn, 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 42 and 60)

2. Special college and/or department requirements
   (See page 142)

   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
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 of 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 42 and 60)

2. Special college and/or department requirements
   (See pages 131 and 142)

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

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 electives courses in religion 12 hours
DEPARTMENT OF MUSIC

Chairman: G. Wolf, FA 105A, Phone 275-2867
Faculty: Eubank, Fote, Hotaling, Keltner, Norton, Palmer, Pickering, Stenberg, Szabo, Walker, Whisler, Wolf, Wrancher
Part-Time Faculty: Ault, Bond, Butsch, Curtis, Eshenaur, Farina, Hall, Hasse, Hinkle, Hopper, Hubis, Lesko, Mascaro, Micarelli, Petta, 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 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 reciprocal 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 and a Master of Arts in Teaching in Music Education are 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 Ensembles 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 42 and 60)

2. Special college and/or department requirements
   (See pages 131 and 146)

3. Required Courses

   MUS 1011 Music Forum (12 quarters) 0 hours
   MUT 2111, 2112, 2113 Music Theory 9 hours
   MVK/MVS Principal Performance I (3 quarters) 6 hours
   MVW/MVB
   MVP/MVV
   MUT 3116, 3117, 3118 Music Theory 9 hours
<table>
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<tr>
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<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVK/MVS/</td>
<td>Principal Performance II (3 quarters)</td>
<td>6</td>
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<tr>
<td>MVW/MVB/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVP/MVV</td>
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<td></td>
</tr>
<tr>
<td>MUG 3101</td>
<td>Basic Conducting</td>
<td>2</td>
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<tr>
<td>MUN 3120,</td>
<td>Major Ensemble</td>
<td>12</td>
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<tr>
<td>3310, 3280</td>
<td></td>
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<tr>
<td>MUT 4431,</td>
<td>Music Theory</td>
<td>6</td>
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<tr>
<td>MUT 4432</td>
<td></td>
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<tr>
<td>MUH 4211,</td>
<td>Music History</td>
<td>9</td>
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<td>4212, 4213</td>
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<tr>
<td>MVK/MVS/</td>
<td>Principal Performance III (3 quarters)</td>
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<td>MVW/MVB/</td>
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<td>MVP/MVV</td>
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<tr>
<td>*MUS 4905</td>
<td>Directed Experience</td>
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<td>MVK/MVS/</td>
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<td>MVP/MVV</td>
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<tr>
<td>PHS 3805</td>
<td>Physical Basis of Music</td>
<td>3</td>
</tr>
</tbody>
</table>

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.


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 42 and 60)

2. Special college and/or department requirements
   (See pages 131 and 146)

3. Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 1011</td>
<td>Music Forum (10 quarters)</td>
<td>0</td>
</tr>
<tr>
<td>MVP 1211</td>
<td>Secondary Performance in Percussion</td>
<td>1</td>
</tr>
<tr>
<td>MUT 2111,</td>
<td>Music Theory</td>
<td>9</td>
</tr>
<tr>
<td>2112, 2113</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MVK/MVS/ Principal Performance I (3 quarters) 6 hours
MVW/MVB/ Music Theory 9 hours
MVP/MVV Principal Performance II (3 quarters) 6 hours
MUT 3116, 3117, 3118 Music Theory 9 hours
MUT 4431, 4432 Music Theory 6 hours
MVK/MVS/ Principal Performance III (3 quarters) 6 hours
MVW/MVB/ MUG 3101 Basic Conducting 2 hours
MVP/MVV MUN 3120, 3310, 3280 Major Ensemble 11 hours
MUT 4314, 4330 Music History 9 hours
MUT 4431, 4432 Minor Ensemble 6 hours
MVT 4432 Music Theory 6 hours
MVP/MVV MUH 4211 Music History 9 hours
4212, 4213 4212, 4213
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 Utilizing Educational Media 4 hours
EDG 4938 Student Teaching Seminar 3 hours
EDG 4938 Music Education Instruction in Schools 2 hours
MUE 4314 Elementary School Music Instructional Analysis 2 hours
MUE 4330 Secondary School Music Instructional Analysis 2 hours
MUE 4350 Physical Basis of Music 3 hours
PHS 3805 Program A — Instrumental Music Education Specialization
MVV 1211 or Secondary Performance Voice (2
MVV 2221 voice classes) 0-2 hours
MVV 2221 Secondary Performance (individual
instruments) See Music Education Advisor 9 hours
MVK 1111- Class Piano (3 quarters) 0-4 hours
1141
MUT 4321 Seminar in Arranging & Transcription 2 hours
MUE 4480 Marching Band Techniques 2 hours
MUG 3301 Instrumental Conducting 4 hours
MVW/MVB/ Principal Performance IV (2 quarters) 4 hours
MVP/MVV
MVK/MVS/ Program B — Choral Music Education Specialization
MVV 1211 or Secondary Performance Voice (2
MVV 2221 voice classes) 0-2 hours
MVV 2221 Secondary Performance: voice 0-3 hours
MVW 1213 Secondary Performance: clarinet 1 hour
MVS 1211 Secondary Performance: violin 1 hour
MVW 1213 Secondary Performance: guitar 1 hour
MVG 3201 Choral Conducting 4 hours
MVG 3201
Program C — Elementary School Music Education Specialization

MVK 111-1141  Class Piano  0-6 hours
MVV 1211  Secondary Performance: voice  0-3 hours
MVB 1211  Secondary Performance: trumpet  1 hour
MVS 1211  Secondary Performance: violin  1 hour
MVS 1216  Secondary Performance: guitar  1 hour
MVW 1213  Secondary Performance: clarinet  1 hour
MVO 1214  Secondary Performance: recorder  1 hour

Special Topics in Elementary School  Music (2 quarters)  4 hours
   Instrumental or choral conducting  2 hours
   Additional Junior block student teaching  3 hours

4. Electives

Total Quarter Hours Required  187-189

Special Non-course requirements
1. Piano Proficiency Examination before admission to Principal Performance III.
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: Ippolito, 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 four
courses (14 hours) required of all theatre majors: THE 1020(4), THE 2071(4), THE
2925(2, 2, 2).

MINORS

The Department of Theatre offers minors consisting of a minimum of 24-25
quarter hours.

1. Acting/Directing.
   Required courses: THE 1020; TPP 2110; THE 3251; TPP 3700; TPA 2322; TPP
   3500, 3310.

2. Film.
   Required Courses: THE 2071, 3251, 4057, 4028; 8 quarter hours of independent
   study and/or special topics.

3. Technical Theatre and Design.
   Required courses: THE 1020, TPA 2210, 2211, 3060, 3220; THE 3925.

4. Theatre History and Criticism.
   Required courses: THE 1020, 3112, 3113, 3114, 3312, 3313, 3314.

BACHELOR OF ARTS: THEATRE

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 131 and 151)

3. Required Courses

   Program “A” Theatre History and Criticism

   THE 3251 History of the Motion Picture 4 hours
   THE 3112 History of Theatre 9 hours
   3113, 3114
   THE 3312 Development of Drama 12 hours
   3313, 3314
   THE 4375 Contemporary Theatre/Drama 3 hours
   THE 4530 Dramatic Criticism 3 hours
   THE 4201 American Drama 8 hours
   4202
   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
   TPA 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
TPA 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 31 and 54)

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


6. Examinations: A comprehensive examination is required.

   Total Quarter Hours 45

MASTER OF ARTS: HISTORY

Program Coordinator: P. Wehr, FA 554, Phone 275-2224

A Master of Arts in History will provide students with the opportunity to
enhance their knowledge of history, their understanding of the historian's craft
and responsibilities, and their recognition of the role history plays in today's
society. The program has two options: thesis or non-thesis, aimed at providing for
the academic growth of secondary school teachers, providing qualified teachers
for community colleges, and contributing to the professional or personal enrich-
ment of the students.

Admission Requirements
1. University Admission Requirements
   (See pages 31 and 54)

2. Program Admission Requirements:
   a. Hold an undergraduate major in history with a 3.0 or higher GPA in the
      major. Applicants without a history undergraduate major may be admitted
      upon demonstration of an equivalent background or by making up the
      deficiency, at the discretion of the department graduate committee.
   b. Score of 500 or higher on verbal portion of GRE.
   c. Transfer students from outside the history department must submit
      three letters of recommendation.
   d. Approval by the graduate committee of the Department of History.
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: No graduate credit will be given for any grade lower than "B."

3. Required Course: HIS 6159 Historiography 4 hours (Required of all students.)
   a. Students electing the professional track will be expected to earn a minimum of 52 quarter hours credit, with at least 24 quarter hours in a concentration (U.S. or European) and at least 12 additional hours in areas outside the concentration (U.S., European, British, Asian, Latin American); electives may be selected in history or course work outside the department with the approval of the student's graduate committee; complete a comprehensive thesis on a topic mutually suitable to the student and his directing professor (the student shall register for 8-12 thesis hours at his election); and, demonstrate a reading knowledge of a foreign language.
   b. Students electing the non-thesis track will be expected to earn a minimum of 52 quarter hours credit with at least 24 quarter hours in a concentration (U.S. or European) and at least 12 of which shall be in areas outside the concentration (U.S., European, British, Asian, Latin American); additional hours in history or course work outside the department shall be completed for a total of 48 hours; complete a 4 hour practicum in the teaching of history at the college level.

4. Restricted Electives: See 3A & 3B above.

5. Thesis: See options

6. Examinations: Each candidate for the Master of Arts in History must pass written and oral examinations during the term in which the degree is to be awarded. The examinations will test the candidate's knowledge of history. It will include a thesis defense when that option is chosen. Students electing the non-thesis track shall be expected to participate in several seminars, each of which will require a research paper. Since each paper will require that the student demonstrate knowledge of research techniques, of bibliographic methods, and effective writing style, the research and writing skills normally expected in a thesis will not be ignored in this program.
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
Preoptometry
Prepharmacy
Prepodiatry
Preveterinary
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 courses which will introduce the student to the three major scientific disciplines within the College; i.e., physical sciences, biological sciences, and mathematical and computer sciences. To satisfy this 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.

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, Ehnhart, Ellis, Gennaro, 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 42 and 60)

2. Special college and/or department requirements
   (See pages 156 and 157)

   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

   BOT 1010C  General Botany  4 hours
   BSC 1010C  Basic Biology  5 hours
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 2045, 2046, 2047</td>
<td>Chemistry Fundamentals I, II and III</td>
<td>10 hours</td>
</tr>
<tr>
<td>CHM 2046L</td>
<td>Chemistry Fundamentals Laboratory</td>
<td>1 hour</td>
</tr>
<tr>
<td>CHM 2120C</td>
<td>Analytic Fundamentals</td>
<td>2 hours</td>
</tr>
<tr>
<td>CHM 3210, 3211, 3212</td>
<td>Organic Chemistry I, II and III</td>
<td>10 hours</td>
</tr>
<tr>
<td>MCB 2013C</td>
<td>General Microbiology</td>
<td>4 hours</td>
</tr>
<tr>
<td>MCB 4404C</td>
<td>Microbial Physiology</td>
<td>4-5 hours</td>
</tr>
<tr>
<td>or PCB 3023C</td>
<td>Cell Physiology</td>
<td>4 hours</td>
</tr>
<tr>
<td>PCB 3043C</td>
<td>Principles of Ecology</td>
<td>4 hours</td>
</tr>
<tr>
<td>PCB 3063C</td>
<td>Genetics</td>
<td>4 hours</td>
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<tr>
<td>PHY 2050C, 2051C</td>
<td>College Physics I and II</td>
<td>8 hours</td>
</tr>
<tr>
<td>STA 3023</td>
<td>Fundamentals of Probability &amp; Statistics</td>
<td>4 hours</td>
</tr>
<tr>
<td>ZOO 1010C</td>
<td>General Zoology</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

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 187

**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
   **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. 17 hours

3. Limnology
   **BOT 4403C** Freshwater Algae 4 hours
   **COP 1110** Computer Programming 3 hours
4. Microbiology
   APB 3535C  Serology  3 hours
   APB 4763C  Microbiology of Water and Waste  4 hours
   or
   MCB 4603C  Microbial Ecology
   BCH 4053,  Biochemistry I, II  6 hours
   BCH 4054
   CHM 3121C,  Analytical Chemistry I, II  6 hours
   CHM 3122C
   MCB 3030C  Biology of Microorganisms  5 hours
   MCB 3203C  Pathogenic Microbiology  4 hours
   MCB 4404C  Microbial Physiology  4 hours
   MCB 4164C  Diagnostic Microbiology
   or
   MCB 4114C  Determinative Microbiology  4 hours
   PCB 3223  Immunology  3 hours

5. Zoology
   PCB 4647  Organic Evolution  3 hours
   PCB 4723C  Animal Physiology  5 hours
   ZOO 3303C  Vertebrate Zoology  4 hours
   ZOO 3713C,  Comparative Vertebrate Anatomy I, II  8 hours
   ZOO 3714C
   ZOO 4203C  Invertebrate Zoology  5 hours
   Restricted ZOO courses numbered 3000 or above approved by the
   Electives student's advisor  8 hours

DEPARTMENT OF CHEMISTRY
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.
MINOR
The Department of Chemistry offers a minor consisting of a minimum of 42 quarter hours.
Required courses (31 hours): CHM 2045, 2046, 2046L, 2047, 2120C, 3210, 3211, 3211L, 3212, 3212C, and 3122C.
Restricted electives (11 hours minimum): At least one course must be selected from group I and the remaining from group I and/or II:
Group I: CHM 3212L, 4130C, 4160C; BCH 4103L; CHS 3531
Group II: BCH 4053, 4054, 4055; CHM 3410, 3411, 4220, 4221; CHS 4110C, 4200.

BACHELOR OF SCIENCE: CHEMISTRY
Degree Requirements
1. University graduation requirements
(See pages 42 and 60)
2. Special college and/or department requirements
(See pages 156 and 159)
3. Required Courses
   CHM 2045, Chemistry Fundamentals I, II and III 10 hours
   2046, 2047
   CHM 2046L Chemistry Fundamentals Laboratory 1 hour
   CHM 2120C Analytical Fundamentals 2 hours
   CHM 3210, Organic Chemistry I, II and III 10 hours
   3211, 3212
   CHM 3211L, Organic Laboratory Techniques I 4 hours
   CHM 3212L and II
   CHM 3121C, Analytical Chemistry I and II 6 hours
   CHM 3122C
   CHM 3410, Physical Chemistry I, II and III 11 hours
   3411, 3412
   CHM 3411L, Physical Chemistry Laboratory I and II 4 hours
   CHM 3412L
   CHM 4610 Inorganic Chemistry 4 hours
   CHM 4130C Advanced Analytical Laboratory Technique 5 hours
   CHM 4912 Undergraduate Research 6 hours
   ENC 3355 Professional Report Writing II 3 hours
   MAC 2154 Analytic Geometry 3 hours
   MAC 3311, Calculus I, II and III 12 hours
   3312, 3313
   MAC 3314 Intermediate Calculus 4 hours
   PHY 2040, General Physics I, II, III 14 hours
   2041C, 2042C
   PHY 3752C Physics of Scientific Instruments 4 hours
   STA 3023 Fundamentals of Probability and Statistics 4 hours
4. Restricted Electives
   a. Biological Sciences 12-13 hours
      BSC 1010C Basic Biology 5 hours
      Approved electives restricted to those biological science courses not listed as designed for non-majors. 7-8 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
CHS 5250  Chemical Synthesis I  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 suspected 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 42 and 60)

2. Special college and/or department requirements
(See pages 156 and 159)

3. Required Courses

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BSC 1010C</td>
<td>Basic Biology</td>
<td>5</td>
</tr>
<tr>
<td>BOT 1010C</td>
<td>General Botany</td>
<td>4</td>
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<tr>
<td>CHM 2045,</td>
<td>Chemistry Fundamentals I, II and III</td>
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<tr>
<td>2046, 2047</td>
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<td>CHM 2046L</td>
<td>Chemistry Fundamentals Laboratory</td>
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<td>CHM 2120C</td>
<td>Analytical Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>CHM 3210,</td>
<td>Organic Chemistry I, II and III</td>
<td>10</td>
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<tr>
<td>3211, 3212</td>
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<td>CHM 3211L</td>
<td>Organic Laboratory Techniques I</td>
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<td>Analytical Chemistry I and II</td>
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<td>CHS 3511</td>
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<td>CHS 3531</td>
<td>Forensic Analysis Techniques</td>
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<td>CHS 4591</td>
<td>Forensic Science Internship</td>
<td>8</td>
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<tr>
<td>COP 1110</td>
<td>Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>ENC 3355</td>
<td>Professional Report Writing II</td>
<td>3</td>
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</table>
MAC 3253, Applied Calculus I, II 8 hours
MAC 3254
MCB 2013C General Microbiology 4 hours
PHY 2050C, College Physics I and II 8 hours
PHY 2051C
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 8 hours)
CCJ 3260 Criminal Law in Action 4 hours
LEA 3601 Criminal Law and the Paraprofessional 4 hours
CCJ 3020 Administration of Justice 4 hours
CCJ 3451 Justice of Manpower for Science and Technology 4 hours
LEA 3001 Law and the Paraprofessional 4 hours
LEA 3013 Legal Investigation 4 hours
CCJ 3430 The Criminal Justice Manager 4 hours
CCJ 3290 Prosecution and Adjudication 4 hours

Group B (4 hours)
for Criminalistics Option:
CHS 3512 Criminalistics II 4 hours
for Civilistics Option:
CHS 3521 Civilistics 4 hours

Group C (A minimum of 24 [Criminalistics] hours or [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: Brigham, Cottrell, Driscoll, Dutton, Gerber, Grau, Kinsley, Larsen, Mukhopadhyay, 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 two minors: (1) Computer Science for Business Majors, and (2) Computer Science.

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 four computer laboratories all designed for “hands on” use by students. The Department’s Microcomputer Laboratory contains a ZILOG Z-80 Developmental System, four Z-80 production machines, a CROMEMCO System 3 and eight Apple II Systems. The Minicomputer Lab houses a 32 terminal DIGITAL VAX 11/780. In addition, there are terminals to a Harris 135 Minicomputer. The large Scale Lab has batch and interactive access to IBM 370/165 AMDAHL V6, CDC Cyber and UNIVAC 1100 machines. Finally, the Graphics Research Lab contains a PLATO graphics terminal linked to the ZILOG and a TEKTRONIX 4052 with a hard copy unit interfaced to the HARRIS via a 9600 baud line.

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.

MINORS

The Department of Computer Science offers the following minors consisting of a minimum of 24 quarter hours in each minor.

1. Computer Science for Business Majors
   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.

2. Computer Science
   Required courses (17 hours): COP 2510, 2511, 3402, 3522, 4530.

   Restricted Electives (minimum 7 hours): CDA 3151, CIS 4112, CNM 4110, COP 3120, 3121, 4550, 4620, COT 4001.
BACHELOR OF SCIENCE: COMPUTER SCIENCE
Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 156 and 163)
   ENC 3355 (Professional Report Writing II) is required.

3. Required courses: Courses used to satisfy the requirements for the major can
   be counted only once in the major.
   COP 2510, Programing I, II 6 hours
   COP 2511
   COP 3522 Structured Programming 3 hours
   COP 3402 Assembly Language Programming 4 hours
   CDA 3151 Mincomputer Programming Laboratory 4 hours
   COP 4530 Data Structures 4 hours
   MAC 3311, Calculus I, II, III 12 hours
   3312, 3313
   PHY 2040, General Physics I, II 9 hours
   PHY 2041C
   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, COBOL I, II 3-6 hours
   COP 3121
MAS 3113, Matrices 4-8 hours
or
MAS 3103, Linear Algebra I, II
MAS 3104
MAP 3302 Ordinary Differential Equations I 4 hours
STA 4321, Mathematical Statistics I, II 8 hours
STA 4322
STA 4163, Statistical Methods I, II 8 hours
STA 4164

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, COBOL I, II 3-6 hours
   COP 3121
   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 4-8 hours
   or
   MAS 3103, Linear Algebra I, II 4-8 hours
   3014
   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 3113 Matrices 4-8 hours
   or
   MAS 3103, Linear Algebra I, II 4-8 hours
   3104
   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, Mathematical Statistics I, II 8 hours
STA 4322
STA 4163, Statistical Methods I, II 8 hours
STA 4164

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, COBOL I, II 6 hours
COP 3121
CIS 4323 Data Processing Systems Analysis and Design 3 hours
CIS 4112 Database Processing 3 hours
CIS 4324 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 3013, Linear Algebra I, II 4-8 hours
3104
STA 4321 Mathematical Statistics I, II 8 hours
STA 4322
STA 4163, Statistical Methods I, II 8 hours
STA 4164

[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.
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 180 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.

MINORS

The Department of Mathematics and Statistics offers the following minors.

1. Mathematics (minimum 29 hours)
   Required courses: MAC 3311, 3312, 3313, 3314; MAP 3302.
   (MAC 3311 and 3312 may be waived by the Department Standards Committee for a student with adequate high school preparation in calculus).
   Restricted Electives: A minimum of three 3000 level or above courses taught by the Department of Mathematics and Statistics selected from STA 4442, STA 6807, MAA courses, MAP courses, MAS courses, MTG courses. (Courses may be selected from MAA 4226, 4227, 4228 or MAA 5211, 5212 but not both; courses may be selected from MAS 3103, 3104 or MAS 3113 but not both.)

2. Statistics (minimum 24 hours)
   Required courses: 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 (Not including STA 3023, STA 3032, or equivalent.)

BACHELOR OF SCIENCE: MATHEMATICS

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 156 and 168)
   ENC 3355 (Professional Report Writing II) is required

3. Required Courses
   The courses listed, or departmentally approved equivalents, are required for the mathematics degree.
COP 2510 Programming I 3 hours
COP 2511 Programming II 3 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
MAP 3302 Differential Equations I 4 hours
MAP 4303 Differential Equations II 4 hours
MAS 3103 Linear Algebra I 4 hours
MAS 3104 Linear Algebra II 4 hours
MHF 2300 Logic and Proof in Mathematics 4 hours
PHY 2040 General Physics I 4 hours
PHY 2041C General Physics II 5 hours
PHY 2042C General Physics III 5 hours
STA 3023 Fundamentals of Probability and Statistics 4 hours
STA 4321 Statistical Theory I 4 hours

4. AREA OF SPECIALIZATION

a. Pure Mathematics
MAA 4226 Introduction to Analysis I 3 hours
MAA 4227 Introduction to Analysis II 3 hours
MAA 4228 Introduction to Analysis III 3 hours
MAS 4301 Algebraic Structures I 4 hours
or
MTG 4302 Topology I 4 hours
STA 4322 Statistical Theory II 4 hours
A minimum of 12 hours selected from any upper division or graduate mathematics or statistics courses taught by the Department of Mathematics and Statistics (except MAC 3233, 3253, 3254; MAE 3817, 4839, 4871) or from courses in the list CNM 4110, 5142; COT 4001; ECM 4134; EGN 4634, 4714.

b. Applied Mathematics
BSC 1010C Basic Biology 5 hours
CHM 2045 Chemistry Fundamentals I 4 hours
CHM 2046 Chemistry Fundamentals II 3 hours
CHM 2046L Chemistry Fundamentals Laboratory 1 hour
CNM 4110 Numerical Calculus 4 hours
MAP 4363 Applied Boundary Value Problems I 4 hours
MAP 4364 Applied Boundary Value Problems II 4 hours
MAS 4153 Vector and Tensor Analysis 4 hours
STA 4442 Probability Theory and Applications 3 hours
Two courses selected from any upper division or graduate mathematics or statistics courses taught by the Department of Mathematics and Statistics (except MAC 3233, 3253, 3254; MAE 3817, 4839, 4871; MHF 4404) or from courses in the list CNM 5142; COT 4001.
Three courses selected from an area of application of mathematics taught outside the Department of Mathematics and Statistics. These courses must be approved by the Department Standards Committee.

5. Electives
The number of hours depends on the courses chosen to satisfy university and college requirements and the area of specialization. A plan for use of electives must be approved by the Department Standards 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 42 and 60)

2. Special college and/or department requirements
   (See pages 156 and 168)
   - ENC 3355 (Professional Report Writing II) is required

3. Required courses
   The courses listed, or departmentally approved equivalents, are required for the statistics degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>STA 3023</td>
<td>Fundamentals of Probability and Statistics</td>
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<tr>
<td>STA 3664</td>
<td>Statistical Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>STA 4163</td>
<td>Statistical Methods I</td>
<td>4</td>
</tr>
<tr>
<td>STA 4164</td>
<td>Statistical Methods II</td>
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<tr>
<td>STA 4202</td>
<td>Experimental Design</td>
<td>3</td>
</tr>
<tr>
<td>STA 4203</td>
<td>Regression Analysis</td>
<td>4</td>
</tr>
<tr>
<td>STA 4222</td>
<td>Sample Survey Methods</td>
<td>3</td>
</tr>
<tr>
<td>STA 4321</td>
<td>Statistical Theory I</td>
<td>4</td>
</tr>
<tr>
<td>STA 4322</td>
<td>Statistical Theory II</td>
<td>4</td>
</tr>
<tr>
<td>STA 4323</td>
<td>Statistical Theory III</td>
<td>4</td>
</tr>
<tr>
<td>STA 4102</td>
<td>Computer Processing of Statistical Data</td>
<td>4</td>
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<tr>
<td>MHF 2300</td>
<td>Logic and Proof in Mathematics</td>
<td>4</td>
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<tr>
<td>MAC 2154</td>
<td>Analytic Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MAC 3311</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MAC 3312</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MAC 3313</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MAC 3314</td>
<td>Intermediate Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MAS 3313</td>
<td>Matrices</td>
<td>4</td>
</tr>
<tr>
<td>COP 2510</td>
<td>Programming I</td>
<td>3</td>
</tr>
<tr>
<td>COP 2511</td>
<td>Programming II</td>
<td>3</td>
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<td>CNM 4110</td>
<td>Numerical Calculus</td>
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<tr>
<td>COT 4001</td>
<td>Discrete Computational Structures</td>
<td>4</td>
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<tr>
<td>CNM 5142</td>
<td>Computational Methods/Linear Systems</td>
<td>4</td>
</tr>
<tr>
<td>ECM 4134</td>
<td>Optimum Seeking Methods</td>
<td>3</td>
</tr>
<tr>
<td>EGN 4634</td>
<td>Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>EGN 4714</td>
<td>Linear Control Systems</td>
<td>4</td>
</tr>
</tbody>
</table>

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
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 air sampling techniques, astrophysics, atmospheric electricity, 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 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 42 and 60)

2. Special college and/or department requirements
   (See pages 156 and 171)

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,  Chemistry Fundamentals I  10 hours
2046, 2047
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,  Calculus I, II, III  12 hours
3312, 3313
MAC 3314  Intermediate Calculus  4 hours
MAP 3302  Differential Equations I  4 hours
PHY 2040,  General Physics I, II, III  14 hours
2041C, 2042C
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
PHS 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 preprofessional 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 142).

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

173
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 **must** take
- Cell physiology, PCB 3203C
- Comparative anatomy, ZOO 3713C, 3714C
- Embryology, ZOO 4603C
- Histology, ZOO 3753C
- Microbiology, MCB 3030C, 3203C, and PCB 3233
- Analytical chemistry, CHM 3121C, 3122C, plus either (or both) Biochemistry, 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), Histology (ZOO 3753C), Embryology (ZOO 4603C) 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 3081, 3328, 4302, 4411; SPA 3301.

**Literature:** LIT 3240 and 3257.

**Management:** GEB 3004.

**Physics:** PHS 4250.

**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.

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;


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;


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 be considered 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 31 and 54)
2. Program Admission requirements
   Minimal requirements for admission normally are a grade point average (GPA) of at least 2.7 for the last 90 quarter hours of undergraduate study and a score of at least 1000 on the combined quantitative-verbal sections of the Graduate Record Examination (GRE). In addition, the Department requires letters of recommendation and a written statement of past experience and research, area of interest, and immediate and long-range goals. Personal interviews are helpful but not required.

   Applicants who fail to meet either the minimum program GPA or GRE requirement may occasionally be accepted if there is other convincing evidence of potential for high achievement and success. Applicants failing to satisfy minimum program criteria should submit an advanced Biological Sciences section GRE score at or above the 50th percentile. In no case will GRE scores (verbal, quantitative or advanced) older than seven years be accepted.

   Applicants need not have an undergraduate degree in a biological science but are expected to have the equivalent of 24 quarter hours credit in the biological sciences, including at least 4 credit hours each in botany, microbiology and zoology; plus 8 hours in organic chemistry; and basic college mathematics and statistics. Minor deficiencies can be remedied after acceptance by enrollment at the first opportunity in an appropriate course.

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
   - BSC 6407C Laboratory Methods for Biology 5 hours
   - PCB 6206 Molecular Biology 3 hours
4. Restricted Electives: Varies with option (see Area of Specialization).

5. Thesis/Research report: Varies with option (see Area of Specialization).

6. Examinations: Final oral exams covering (a) course work, general comprehension in biology and (b) thesis research and results.

<table>
<thead>
<tr>
<th>AREAS OF SPECIALIZATION (OPTIONS)</th>
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<tbody>
<tr>
<td>Students must select one of the following three options:</td>
</tr>
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1. Biological Sciences Thesis Option

<table>
<thead>
<tr>
<th>Required courses beyond core:</th>
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</thead>
<tbody>
<tr>
<td>Group A (5 hours — one course)</td>
</tr>
<tr>
<td>PCB 6585C Genetic Mechanisms 5 hours</td>
</tr>
<tr>
<td>PCB 6426C Population Ecology 5 hours</td>
</tr>
<tr>
<td>Group B (17 hours — All courses)</td>
</tr>
<tr>
<td>PCB 5675 Evolutionary Biology 3 hours</td>
</tr>
<tr>
<td>PCB 6746C Organismal Physiology 5 hours</td>
</tr>
<tr>
<td>PCB 6971 Biology Thesis 9 hours</td>
</tr>
<tr>
<td>Group C (Restricted Electives — minimum of 7 hours)</td>
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<tr>
<td>Additional coursework acceptable to the student's graduate committee.</td>
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2. Biological Sciences Nonthesis Option

<table>
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<tr>
<th>Required courses beyond core:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A (5 hours — one course)</td>
</tr>
<tr>
<td>PCB 6585C Genetic Mechanisms 5 hours</td>
</tr>
<tr>
<td>PCB 6426C Population Ecology 5 hours</td>
</tr>
<tr>
<td>Group B (14 hours — All courses)</td>
</tr>
<tr>
<td>PCB 5675 Evolutionary Biology 3 hours</td>
</tr>
<tr>
<td>PCB 6918 Biology Research Report 3 hours</td>
</tr>
<tr>
<td>BOT 5705C Plant Biosystematics 5 hours</td>
</tr>
<tr>
<td>MCB 5205 Infectious Process 3 hours</td>
</tr>
<tr>
<td>Group C (4-5 hours — one course)</td>
</tr>
<tr>
<td>ZOO 5206C Aquatic Invertebrates 5 hours</td>
</tr>
<tr>
<td>ZOO 5463C Herpetology 4 hours</td>
</tr>
<tr>
<td>ZOO 5475C Ornithology 4 hours</td>
</tr>
<tr>
<td>ZOO 5483C Mammalogy 4 hours</td>
</tr>
<tr>
<td>Group D (Restricted Electives — minimum of 14-17 hours)</td>
</tr>
<tr>
<td>Additional coursework acceptable to the student's graduate advisor with at least 6 hours of Biological Sciences graduate level courses.</td>
</tr>
</tbody>
</table>

3. Microbiology Thesis Option

<table>
<thead>
<tr>
<th>Required courses beyond core:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A (24 hours — All courses)</td>
</tr>
<tr>
<td>APB 5581C Applied Microbiology 4 hours</td>
</tr>
<tr>
<td>MCB 5205 Infectious Process 3 hours</td>
</tr>
<tr>
<td>MCB 5505C Virology 4 hours</td>
</tr>
</tbody>
</table>
MASTER OF SCIENCE: INDUSTRIAL CHEMISTRY

Program Coordinator: J. Gupton, SC 331, 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

1. University Admission Requirements
   (See pages 31 and 54)

2. Program Admission Requirements
   a. Baccalaureate degree from an accredited institution
   b. Departmental evaluation based upon
      (1) Transcripts
      (2) Letters of recommendation
      (3) 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

1. University Graduate Requirements
   See the current UCF Graduate Procedures Manual available in the Office of Graduate Studies.

2. Prerequisites: See admission requirements above.

3. 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

4. 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: A. Mukhopadhyay, 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 31 and 54)

2. Program Admission Requirements
   Admission to regular graduate student status in Computer Science must be approved by the Graduate Committee in Computer Science. Each student is required to submit a score on the Advanced Record Examination in Computer Science that is not more than two years old at the time of admission to regular graduate status. 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. A student may seek regular graduate status with only the knowledge of four of the listed courses. He will then be required to place the other two courses on his graduate plan of study. 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. Computer science majors are not required to have at least 24 quarter hours of course work at the 6000 level.

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. Examination:
   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

179
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 275-2585

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 31 and 54)
   If the applicant does not have a GPA of 3.0 (4.0 = A) for the last 90 quarter hours credited toward the earned Baccalaureate degree from an accredited institution, then a quantitative-variable GRE score of 1000 or higher must have been achieved within the last five years.

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAA 5211</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MAA 5212</td>
<td>Advanced Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MAA 5405</td>
<td>Techniques of Complex Variables</td>
<td>4</td>
</tr>
<tr>
<td>MAP 6406</td>
<td>Methods of Mathematical Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>MAP 6407</td>
<td>Methods of Mathematical Analysis II</td>
<td>4</td>
</tr>
</tbody>
</table>
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 hours

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

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.

<table>
<thead>
<tr>
<th>Total Quarter Hours Required</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Option</td>
<td>36 (Course requirements)</td>
</tr>
<tr>
<td>Non-Thesis Option</td>
<td>40 (Course requirements)</td>
</tr>
</tbody>
</table>
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

Applied Sociology (MA)
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 202, Phone 275-2292

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, Anthropology, 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.

**University Year for Action Director: R. Brannon, CB 327, Phone 275-2179**

The University Year for Action program provides internships through which Social Science majors may gain experience in their field, earn academic credit, and provide valuable community service.

**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 COURSES (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.

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 $386. 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 $613.

**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 1101, AFR 1111, AFR 1120, AFR 2130, AFR 2131, AFR 2104, AFR 3220, AFR 3230, AFR 3231, AFR 4201, AFR 4210, AFR 4211.
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. If you are in the Army National Guard of Army Reserve and continuing your education full time, then you may be eligible for the Army's new Simultaneous Membership Program (SMP). It lets you combine Reserve Forces duty with Army ROTC officer training courses on campus and earn about $5,000 in two years.

CURRICULUM

The Military Science curriculum is divided into three phases:

1. Basic Military Science
   The Basic Military Science courses are designed for four years 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.

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 ac­
tive, 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'Keefe, 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 intership 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 English proficiency 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.

   Required courses: JOU 3100, ADV 4000, ADV 4300, ADV 4101, ADV 4003, COM 3110.

   Required courses: JOU 3100, 3101, 3200, 4104, MMC 4200, and MMC 4602.

   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, 3051.

   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.

1 Prerequisite of Departmental English proficiency test required.
BACHELOR OF ARTS: COMMUNICATION

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 187)

3. Required Courses
   - COM 3311 Communication as a Behavioral Science
   - SPC 4330 Non-verbal Communication
   - SPC 4540 Attitudes and Communication

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

Total Quarter Hours Required

AREAS OF SPECIALIZATION

1. General Communication Requirements
   - COM 3301 Interpersonal Communication
   - SPC 3542 Persuasion
   - SPC 3425 Group Interaction
   - MMC 4200 Legal Responsibilities

   Select 4 hours from history:
   - RTV 3000 Foundations of Broadcasting
   - JOU 3003 History of American Journalism
   - MMC 4602 Social Responsibilities of Mass Media
   - SPC 4200 Evolution of Communication Theory
   - SPC 4633 Rhetoric of Soc and Pol Action

   Select 8 hours from motivation:
   - MMC 4610 Propaganda and Psychological Warfare
   - PUR 4000 Public Relations
   - ADV 4000 Principles of Advertising
   - RTV 4402 Broadcast Criticism
   - SPC 3250 Speech and Human Relations

   Select 8 hours from research:
   - MMC 4609 Opinion and the Mass Media
   - SPC 4440 Group Dynamics
   - SPC 4350 Studies in Listening
   - COM 4918 Research Planning

2. Organizational Communication Requirements
   - COM 3110 Business and Professional Communication
   - SPC 3445 Leadership
   - SPC 3425 Group Interaction
   - SPC 4440 Group Dynamics
   - SPC 4350 Studies in Listening
   - SPC 3301 Interpersonal Communication
   - COM 3120 Organizational Communication
   - PUR 4000 Public Relations

*Prerequisite of Departmental English proficiency test required.
BACHELOR OF ARTS: Film (RTV)
Degree Requirements
1. University graduation requirements
   (See pages 42 and 60)
2. Special college and/or department requirements
   (See pages 182 and 187)
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 42 and 60)
2. Special college and/or department requirements
   (See pages 182 and 187)
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, MMC, ADV, PUR or VIC courses.
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

*Prerequisite of Departmental English proficiency test required.
VIC 3001 Photocommunication 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
or
ADV 4103 Radio-Television Advertising 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
VIC 3001 Photocommunication 4 hours
PUR 4000 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 42 and 60)

2. Special college and/or department requirements
(See pages 182 and 187)

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 Continuity and Prog. I 4 hours

Sixteen (16) additional hours selected from Communication Department offerings.

5. Electives
Total Quarter Hours Required 180

Prerequisite of Departmental English proficiency test required.
BACHELOR OF ARTS: Speech
Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 187)

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 4633 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 5200 Evolution of Com. Theory 4 hours

   Eleven (11) additional hours from Communication Department offerings

5. Electives

Total Quarter Hours Required 180

1Prerequisite of Departmental English proficiency test required.
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 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 192)

3. Required courses
   - ECO 2023 Principles of Microeconomics
   - ECO 2013 Principles of Macroeconomics
   - ECO 3101 Intermediate Price Theory
   - ECO 3203 Intermediate Money, Income, and Employment Theory
   - ECO 3411 Quantitative Methods and Business Decision Analysis
   - ECO 4503 Public Finance in the American Economy
   - ENC 3352 Professional Report Writing I
   - FIN 3233 Money and Banking

4. Restricted Electives
   a. Select three
      - ECO 3702 International Economics
      - ECO 4225 Money: Theory and Policy
      - ECO 4503 Economics of the Public Sector
      - ECP 3203 Contemporary Labor Economics
      - ECP 4703 Managerial Economics
   b. Select three
      - ECO 3426 The Economics of Regulated Industries
      - ECO 4303 History of Economic Thought
      - ECO 4412 Economic Statistics and Econometrics
      - ECO 5403 Mathematical Economics
      - ECP 4403 Business Government and Regulated Organization
   c. 36 quarter hours beyond Environmental Studies requirements including completion of a minor from Behavioral Sciences, Mathematics, Statistics or Social Sciences.

5. Electives

Total Quarter Hours Required 180
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 24 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 42)

2. Environmental Studies Program
   (See page 60)

3. Required courses
   POS 2041 American National Government 4 hours
   POS 3703 Scope and Methods 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 an 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
   GEO 3470  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
CPO 4643  Government and Politics of the Soviet Union
CPO 4024  Non-Western Politics

5. Political Theory and Behavior
POT 3302  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 location.

**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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POS 2041</td>
<td>American National Government</td>
<td>4</td>
</tr>
<tr>
<td>POS 3703</td>
<td>Scope and Methods of Political Science</td>
<td>4</td>
</tr>
<tr>
<td>POS 4284</td>
<td>Judicial Behavior</td>
<td>4</td>
</tr>
<tr>
<td>POS 4603</td>
<td>American Constitutional Law I</td>
<td>4</td>
</tr>
<tr>
<td>POS 4604</td>
<td>American Constitutional Law II</td>
<td>4</td>
</tr>
<tr>
<td>INR 4401</td>
<td>International Law I</td>
<td>4</td>
</tr>
<tr>
<td>INR 4402</td>
<td>International Law II</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL** 16 hours

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 3003</td>
<td>Financial Accounting</td>
</tr>
<tr>
<td>BUL 3111</td>
<td>Legal Environment of Business</td>
</tr>
<tr>
<td>ENC 3352</td>
<td>Professional Reporting Writing I</td>
</tr>
<tr>
<td>EUH 2545</td>
<td>Introduction to Anglo-American Law</td>
</tr>
<tr>
<td>LEA 3013</td>
<td>Legal Investigation</td>
</tr>
</tbody>
</table>

**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.
The undergraduate program provides a general preparation in Psychology with the option to select specialization electives according to student interests. Successful completion of the specified program of at least 55 quarter hours 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 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 196)

3. Required Courses
   PSY 2013, General Psychology 8 hours
   PSY 2014
   EXP 3404 Basic Learning Process 5 hours
   PSB 3002 Physiological Psychology 4 hours
   PSY 3023 Careers in Psychology 2 hours
   PSY 4214¹ 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 3302¹ Psychological Measurement 4 hours
      PSY 4204¹,² 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

¹Has prerequisite of STA 2014 or equivalent
²Recommended for students planning to attend graduate school

AREAS OF SPECIALIZATION

The following areas of specialization are available in a Psychology B.A. pro-
gram. 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**

Chairman: G. Holten, CB 336, Phone 275-2603

Faculty: Ammons, Becker, Carter, Duffey, Jones, Korstad, Pyle, Slaughter, Stalnaker, Young

The Department of Public Service incorporates three related undergraduate degree programs: Allied Legal Services, Criminal Justice and Public Administration. It participates in the Masters of Public Policy Program.

**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.

**BACHELOR OF ARTS: ALLIED LEGAL SERVICES**

**Degree Requirements**

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 197)

3. Required Courses

   - LEA 3001 Law and the Legal System: 4 hours
   - LEA 3013 Legal Investigation: 4 hours
   - LEA 3101 Litigation and Trial Practice: 4 hours
   - LEA 3201 Property Law: 4 hours
   - LEA 3014 Legal Composition: 4 hours
   - LEA 4501 Domestic Relations: 4 hours
   - BUL 3111 Legal Environment of Business: 3 hours
   - BUL 3112 Business Law: 3 hours

4. Restricted Electives

   a. Ten (10) quarter hours of additional Allied Legal Services coursework.
   b. Twelve (12) quarter hours of restricted electives in allied fields, with advisor approval, which may include Accounting, Business, Economics, Criminal Justice, or Public Administration.

5. Electives

   Total Quarter Hours Required: 180
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 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 197)

3. Required courses (24 quarter hours)
   - CCJ 2020 Introduction to Criminal Justice 4 hours
   - CCJ 3010 Crime in America 4 hours
   - CCJ 3290 Prosecution and Adjudication 4 hours
   - CCJ 3300 The Correctional and Penal System 4 hours
   - PAD 3003 Public Administration 4 hours
   - PAD 4034 Public Policy Administration 4 hours
   - or
   - PAD 4104 Administrative Theory 4 hours

4. Restricted Electives
   a) 28 additional quarter hours of CCJ courses.
   b) 22 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 selecting careers in public service at the federal, state, regional or local level may choose to enroll in the Public Administration program.

BACHELOR OF ARTS: PUBLIC ADMINISTRATION

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 197)

3. Required Courses (32 hours)
   - PAD 3003 Introduction to Public Administration 4 hours
   - PAD 4034 Public Policy Administration 4 hours
   - PAD 4104 Administrative Theory 4 hours
   - PAD 4110 Intergovernmental Relations 4 hours
   - PAD 4427 Labor Relations in the Public Sector 4 hours
   - PAD 4835 Fiscal Management 4 hours
   - LEA 3801 Administrative Law 4 hours
   - STA 2014 Principles of Statistics or a course in Social Science Research utilizing statistical methods 4 hours
4. Restricted Electives (20-22 hours)
   a. A minimum of twelve (12) hours from:
      - PAD 4040 Ethics and Values in Public Administration 4 hours
      - PAD 4803 Metropolitan Administration 4 hours
      - PAD 4932 Special Topics in Public Administration 4 hours
      - PAD 5807 Administrative Practice in the Public Sector 4 hours
      - GEO 3602 Urban Geography 4 hours
   b. PAD 4941 Public Administration Internship or
      Any additional eight (8) hours of coursework, 3000 level or above, offered by
      the Department of Public Service Administration.
   c. Allied Public Service Field (16 hours)
      A minimum of sixteen (16) hours, 3000 level or above, in a field of concen-
      tration related to the public service. Such offerings may be chosen from
      a variety of fields, including, but not limited to, accounting, public works,
      public health, social work, economics, communication, sociology, political
      science, geography, statistics, computer science and management.
      Note: Any student transferring from another institution, seeking a degree
      from the Department of Public Service Administration, must complete
      a minimum of 32 quarter hours of upper division coursework from the course
      offerings of the department, in the student’s major field of study.

5. Electives

   Total Quarter Hours Required 180

DEPARTMENT OF SOCIOLOGY

Acting Chairman: W. R. Brown, LR 114G, Phone 275-2227
Faculty: Abel, Allen, Cook, Dees, Drake, Green, Hodgin, Jones, Kazmerski, Miller,
Stearman, Tropf, Unkovic, 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.

Students should consult with their advisors early in their academic career if
they plan to pursue graduate work or to select an area of specialization within the
Department.

MINORS

The Department of Sociology offers the following minors consisting of the
number of quarter hours indicated in each minor:

1. Anthropology
   Required courses: ANT 2003, SOC 2000, ANT 3000, ANT 3410, 3422, LIN 4020,
eight additional hours to be chosen in consultation with the student’s advisor.
   No more than two courses can be transferred from other Sociology/An-
thropology 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. Sociology
   Required courses: SOC 2000, 3201, and SOC 3640 or SOC 3600; and a minimum
   of 12 quarter hours of courses with SOC, MAF, or DHE prefixes. No more than
two Sociology courses may be transferred from another sociology department
and no more than ten quarter hours of 1000 or 2000 level Sociology courses
   can be applied. Minimum number of quarter hours required — 24.
BACHELOR OF ARTS: SOCIOLOGY

Degree Requirements

The Sociology curriculum is designed to give students the perspective, competencies, and experience needed to work effectively in the areas of human relations, organizational problems, and social research and evaluation in business, industry, governmental, planning, and social organizations.

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 199)

3. Required courses

   SOC 2000 General Sociology 4 hours
   SOC 3201 Social Institutions 4 hours
   SOC 3640 The Development of Social Thought 4 hours
   or
   SOC 3600 Modern Sociological Thought 4 hours
   ANT 3000 Physical Anthropology 4 hours
   or
   ANT 3410 Social Anthropology 4 hours
   or
   SOC 3521 Research Methods and Statistics 4 hours
   or
   STA 2014 Principles of Statistics 4 hours
   SOC 3500 Research Methods 4 hours
   SOC 4507 Data Analysis 4 hours
   SOC 4480 Applied Sociology 4 hours

4. Restricted Electives
   Twenty-four (24) hours of coursework from Sociology Department offerings, 16 of which must have SOC, MAF, or DHE prefixes.

5. Electives

   Total Quarter Hours Required 180

BACHELOR OF ARTS: Anthropology

The Anthropology Program offers undergraduate training in all four subfields of the discipline: Physical Anthropology, Archeology, Linguistics and Cultural Anthropology. In addition, area studies dealing with North American Indians and Latin American Culture are available to the student. In keeping with the holistic nature of the discipline, students are required to pursue a course of study which comprehends all four subfields of Anthropology.

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 199)

3. Required Courses (40 hours)

   ANT 2003 General Anthropology 4 hours
   SOC 2000 General Sociology 4 hours
   ANT 3000 Introduction Archeology/Physical 4 hours
   ANT 3410 Introduction Social Anthropology 4 hours
   ANT 3511 Physical Anthropology 4 hours
ANT 4086  Method and Theory  4 hours
ANT 3422  Comparative Social Organizations  4 hours
LIN 4020  Anthropological Linguistics  4 hours
ANT 4705  Applied Anthropology  4 hours
SOC 3500  Research Methods  4 hours

4. Restricted Electives (20 hours)
   Area Studies (Select two)
   ANT 3312  Ethnology of North American Indians  4 hours
   ANT 3313  Plains Indians of North America  4 hours
   ANT 3332  Peoples and Cultures of Latin America  4 hours

   Specialized Studies (Select three)
   ANT 3241  The Anthropology of Religion  4 hours
   ANT 3432  Culture and Personality  4 hours
   ANT 3424  Culture and Community  4 hours
   SOC 3320  Rural Sociology  4 hours
   SOC 3834  Sex Roles  4 hours
   ANT 3464  Human Microevolution  4 hours
   ANT 3512  Biobehavioral Anthropology  4 hours
   ANT 3553  Primatology  4 hours
   ANT 3142  Old World Prehistory  4 hours
   ANT 3144  New World Prehistory  4 hours
   ANT 3122  Archeological Methods  4 hours
   ANT 3141  Prehistory of Complex Societies  4 hours

5. Electives

Total Quarter Hours Required  180

BACHELOR OF ARTS: Social Work

This professional degree program is accredited by the Council on Social Work Education. Its primary focus is the preparation of students for entry-level professional social work practice within diverse human service organizations such as hospitals, schools, correctional settings, public welfare departments, child placement organizations, community centers and counseling agencies.

Before applying for the professional phase of the program, students are advised to have completed courses in biology, political science, psychology, sociology and statistics. Applications to this limited access program may be obtained at the Department of Sociology.

Degree Requirements

1. University graduation requirements
   (See pages 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 199)

3. Required courses (60 hours)
   SOW 3302  Introduction to Social Welfare and Social Work  4 hours
   SOW 3104  Human Growth and Development  4 hours
   SOW 3191  Assessing Human Systems  4 hours
   SOW 3232  Social Welfare Policy, Services and Issues  4 hours
   SOC 3500  Research Methods  4 hours
   SOW 4300  Generalist Practice in Social Work  4 hours
   SOW 4352  Interpersonal Skills in Social Work Practice  4 hours
   SOW 4341  Micro-Level Roles and Interventions in Social Work  4 hours
SOW 4343  Macro-Level Roles and Interventions in Social Work 4 hours
SOW 4431  Evaluating Social Work Practice and Service Programs 4 hours
SOW 4620  Social Work with Minorities 4 hours
SOW 4510  Field Experience 12 hours
SOW 4522  Field Experience Seminar 4 hours

4. Restricted Electives (15 hours)
These electives are to be courses consistent with the objectives of the Social Work Program and chosen with the approval of the student's faculty advisor. 15 hours

5. Electives

Total Quarter Hours Required 180

MAJOR IN SOCIAL SCIENCES

Contact Person: L. Tanzi, CB 202, Phone 275-2292

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 42 and 60)

2. Special college and/or department requirements
   (See pages 182 and 202)

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

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
Master of Arts: Applied Sociology

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: A. Pryor, FA 528A, 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 31 and 54)
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:
   
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 6219</td>
<td>Modern Communication Theory</td>
<td>4 hours</td>
</tr>
<tr>
<td>COM 6300</td>
<td>Introduction to Graduate Study</td>
<td>4 hours</td>
</tr>
<tr>
<td>COM 6312</td>
<td>Research Methods</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

   A GPA of no less than 3.0 in a specified program of study is required for graduation.
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 hours 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, outpatient 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 31 and 54)

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 BS from an accredited institution.

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
      - 2 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
   - 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. The qualifying Examination given after the completion of all coursework must be successfully completed as a prerequisite for the internship.

Total Quarter Hours Required 61

MASTER OF SCIENCE: INDUSTRIAL PSYCHOLOGY

The basic goal of the Industrial Psychology Graduate Program is to train individuals to apply psychological principles 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 31 and 54)

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 including at least one from an academic source.
c. Submission of all aforementioned documents no later than March 1 and May 1 for admission consideration for the following September. Admission is competitive for approximately 15 openings (See Department 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 or BS from an accredited institution.

3. Required Courses:
   Approximately 62 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:
   None


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 62

MASTER OF PUBLIC POLICY
Program Coordinator: D. Dees, CB 303, 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 31 and 54)

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 students graduate committee following the completion of the student's research report.

Total Quarter Hours Required

50
MASTER OF ARTS: APPLIED SOCIOLOGY

Program Coordinator: D. Dees, LR 117, Phone 275-2227

The purpose of the Applied Sociology graduate program is to train individuals to apply sociological principles and research skills in a variety of organizational settings. The program is designed to lead to a terminal Master's degree for those individuals seeking employment in non-academic settings. The program of study requires a minimum of 57 hours of course work and may be completed within 6 quarters.

Admission Requirements

1. University Admission Requirements
   (See pages 31 and 54)

2. Program Admission Requirements
   To be considered for admission, applicants must submit:
   a. a quantitative-verbal GRE score dating from no longer than seven years previous to application for admission
   b. complete transcripts of past university/college course work
   c. three letters of reference, including at least one from an academic source familiar with the applicant's abilities.

Degree Requirements

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

2. Prerequisites: Before a student can enroll in graduate courses in the program, the student must have a Bachelors degree in Sociology or have successfully completed undergraduate courses in sociological theory, social research methods, statistics, and SOC 5937, Proseminar in Sociology. SOC 5937 may be waived if the student has completed 36 or more hours of undergraduate Sociology courses.

3. Required Courses:
   SOC 6486 Principles of Applied Sociology 3 hours
   SOC 6825 Group Dynamics 3 hours
   SOC 6501 Social Research 3 hours
   SOC 6510 Research Analysis 3 hours
   SOC 6481 Social Systems Analysis and Evaluation 3 hours
   SOC 6426 Complex Organizations 3 hours
   SOC 6302 Community Development and Planned Change 3 hours

   A minimum of two Special Topics seminars covering substantive areas of sociology. Topics will vary according to student interest.
   Each seminar will be 3 hours credit 6 hours
   A practicum of actual field experience 12 hours

4. Restricted Electives: A minimum of two of the following courses:
   SOC 6872 Human Relations in the Applied Setting 3 hours
   SOC 6565 Grant Writing 3 hours
   SOC 6515 Advanced Social Research 3 hours
   SOC 6487 Program Design and Development 3 hours


6. Examinations: A comprehensive written and oral examination over required courses is required.

Total Quarter Hours Required 57
CLASSIFICATION OF COURSES
The University course numbering system is as follows:

1000-4999 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 postsecondary 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 number 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
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTE</td>
<td>Business Teacher Education</td>
</tr>
<tr>
<td>BUL</td>
<td>Business Law</td>
</tr>
<tr>
<td>CAP</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>CBH</td>
<td>Comparative Psychology &amp; Animal Behavior</td>
</tr>
<tr>
<td>CGJ</td>
<td>Criminology &amp; Criminal Justice</td>
</tr>
<tr>
<td>CDA</td>
<td>Computer Design/Architecture</td>
</tr>
<tr>
<td>CES</td>
<td>Civil Engineering Structures</td>
</tr>
<tr>
<td>CHM</td>
<td>Chemistry</td>
</tr>
<tr>
<td>CHS</td>
<td>Chemistry-Specialized</td>
</tr>
<tr>
<td>CIS</td>
<td>Computer &amp; Information Systems</td>
</tr>
<tr>
<td>CJT</td>
<td>Criminal Justice Technology</td>
</tr>
<tr>
<td>CLP</td>
<td>Clinical Psychology</td>
</tr>
<tr>
<td>CNM</td>
<td>Computational/Numerical Methods</td>
</tr>
<tr>
<td>COC</td>
<td>Computer Concepts</td>
</tr>
<tr>
<td>COM</td>
<td>Communication</td>
</tr>
<tr>
<td>COP</td>
<td>Computer Programming</td>
</tr>
<tr>
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<td>Computer Theory</td>
</tr>
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<td>CPO</td>
<td>Comparative Politics</td>
</tr>
<tr>
<td>CRM</td>
<td>Computer Resources/Management</td>
</tr>
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<td>CRW</td>
<td>Creative Writing</td>
</tr>
<tr>
<td>CYP</td>
<td>Community Psychology</td>
</tr>
<tr>
<td>DAA</td>
<td>Dance Activities</td>
</tr>
<tr>
<td>DAE</td>
<td>Dance Education</td>
</tr>
<tr>
<td>DEP</td>
<td>Development Psychology</td>
</tr>
<tr>
<td>DHE</td>
<td>Demography &amp; Human Ecology</td>
</tr>
<tr>
<td>EAB</td>
<td>Experimental Analysis of Behavior</td>
</tr>
<tr>
<td>EAS</td>
<td>Engineering: Aerospace</td>
</tr>
<tr>
<td>ECI</td>
<td>Engineering: Civil</td>
</tr>
<tr>
<td>ECM</td>
<td>Engineering: Computer Mathematics</td>
</tr>
<tr>
<td>ECO</td>
<td>Economics</td>
</tr>
<tr>
<td>ECP</td>
<td>Economic Problems &amp; Policy</td>
</tr>
<tr>
<td>ECS</td>
<td>Economic Systems &amp; Development</td>
</tr>
<tr>
<td>EDA</td>
<td>Education: Administration</td>
</tr>
<tr>
<td>EDE</td>
<td>Education: Elementary</td>
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<td>Education: Foundation</td>
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<td>EDH</td>
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<td>EDM</td>
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<td>Educational Psychology</td>
</tr>
<tr>
<td>EDS</td>
<td>Education: Supervision</td>
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<tr>
<td>EEC</td>
<td>Education: Early Childhood</td>
</tr>
<tr>
<td>EED</td>
<td>Education: Emotional Disorders</td>
</tr>
<tr>
<td>EEL</td>
<td>Engineering: Electrical</td>
</tr>
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<td>EES</td>
<td>Environmental Engineering Science</td>
</tr>
<tr>
<td>EEX</td>
<td>Educationalal: Exceptional Child-Care Competencies</td>
</tr>
<tr>
<td>EGC</td>
<td>Guidance &amp; Counseling</td>
</tr>
<tr>
<td>EGM</td>
<td>Engineering: Mechanical</td>
</tr>
<tr>
<td>EGN</td>
<td>Engineering: General</td>
</tr>
<tr>
<td>EIN</td>
<td>Engineering: Industrial</td>
</tr>
<tr>
<td>ELD</td>
<td>Education: Specific Learning Disabilities</td>
</tr>
<tr>
<td>EMA</td>
<td>Engineering: Material</td>
</tr>
<tr>
<td>EME</td>
<td>Education: Technology &amp; Media</td>
</tr>
<tr>
<td>EML</td>
<td>Engineering: Mechanical</td>
</tr>
<tr>
<td>EMR</td>
<td>Education: Mental Retardation</td>
</tr>
<tr>
<td>ENC</td>
<td>English Composition</td>
</tr>
<tr>
<td>ENG</td>
<td>English-General</td>
</tr>
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<td>Code</td>
<td>Field</td>
</tr>
<tr>
<td>------</td>
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</tr>
<tr>
<td>ENL</td>
<td>English Literature</td>
</tr>
<tr>
<td>ENU</td>
<td>Engineering: Nuclear</td>
</tr>
<tr>
<td>ENV</td>
<td>Engineering: Environmental</td>
</tr>
<tr>
<td>ENY</td>
<td>Entomology</td>
</tr>
<tr>
<td>ESE</td>
<td>Education: Secondary</td>
</tr>
<tr>
<td>ESI</td>
<td>Engineering Systems — Industrial</td>
</tr>
<tr>
<td>ESL</td>
<td>English as a Second Language</td>
</tr>
<tr>
<td>ETC</td>
<td>Engineering Tech: Civil</td>
</tr>
<tr>
<td>ETE</td>
<td>Engineering Tech: Electrical</td>
</tr>
<tr>
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<td>Engineering Tech: General</td>
</tr>
<tr>
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<td>Engineering Tech: Industrial</td>
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<td>Engineering Tech: Mechanical</td>
</tr>
<tr>
<td>EUH</td>
<td>European History</td>
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<tr>
<td>EVI</td>
<td>Education: Visually Impaired — Blind</td>
</tr>
<tr>
<td>EVS</td>
<td>Environmental Science</td>
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<tr>
<td>EVT</td>
<td>Education: Vocational/Technical</td>
</tr>
<tr>
<td>EXP</td>
<td>Experimental Psychology</td>
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<tr>
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<td>Film</td>
</tr>
<tr>
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<td>Finance</td>
</tr>
<tr>
<td>FOT</td>
<td>Foreign &amp; Biblical Languages in Translation</td>
</tr>
<tr>
<td>FRE</td>
<td>French Language</td>
</tr>
<tr>
<td>FRW</td>
<td>French Literature (Writings)</td>
</tr>
<tr>
<td>GEB</td>
<td>General Business</td>
</tr>
<tr>
<td>GEO</td>
<td>Geography</td>
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<tr>
<td>GER</td>
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</tr>
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<td>German Literature (Writings)</td>
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<tr>
<td>GEY</td>
<td>Gerontology</td>
</tr>
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<td>Industrial &amp; Applied Psychology</td>
</tr>
<tr>
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<td>International Relations</td>
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</tr>
<tr>
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<td>Journalism</td>
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<td>Language Arts &amp; English Education</td>
</tr>
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<td>Latin American History</td>
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<tr>
<td>LEA</td>
<td>Legal Assistant</td>
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<td>Linguistics</td>
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<td>Library Science</td>
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<tr>
<td>MAA</td>
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<td>MAC</td>
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</tr>
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<td>Mathematics — Discrete</td>
</tr>
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<td>Mathematics Education</td>
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<tr>
<td>MAF</td>
<td>Marriage &amp; Family</td>
</tr>
<tr>
<td>MAN</td>
<td>Management</td>
</tr>
<tr>
<td>MAP</td>
<td>Mathematics — Applied</td>
</tr>
<tr>
<td>MAR</td>
<td>Marketing</td>
</tr>
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<td>Mathematics: Algebraic Structures</td>
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<td>Description</td>
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<tr>
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<td>Medical Laboratory Science</td>
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<tr>
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<td>Medical Records</td>
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<td>MTG</td>
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<td>Music: Composition</td>
</tr>
<tr>
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<td>Music: Education</td>
</tr>
<tr>
<td>MUH</td>
<td>Music: History/Musicology</td>
</tr>
<tr>
<td>MUL</td>
<td>Music: Music Literature</td>
</tr>
<tr>
<td>MUN</td>
<td>Music: Musical Ensembles</td>
</tr>
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</tr>
<tr>
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<td>Music: Applied Brasses</td>
</tr>
<tr>
<td>MVK</td>
<td>Music: Applied — Keyboard</td>
</tr>
<tr>
<td>MVO</td>
<td>Music: Applied — Other Instruments</td>
</tr>
<tr>
<td>MVP</td>
<td>Music: Applied — Percussion</td>
</tr>
<tr>
<td>MVS</td>
<td>Music: Applied — Strings</td>
</tr>
<tr>
<td>MVV</td>
<td>Music: Applied — Voice</td>
</tr>
<tr>
<td>MVW</td>
<td>Music: Applied — Woodwinds</td>
</tr>
<tr>
<td>NUR</td>
<td>Nursing</td>
</tr>
<tr>
<td>NUU</td>
<td>Nursing Universals</td>
</tr>
<tr>
<td>OCE</td>
<td>Oceanography</td>
</tr>
<tr>
<td>ORI</td>
<td>Oral Interpretation</td>
</tr>
<tr>
<td>PAD</td>
<td>Public Administration</td>
</tr>
<tr>
<td>PCB</td>
<td>Process Cell Biology</td>
</tr>
<tr>
<td>PEL</td>
<td>Physical Education Acts (GEN) — Object Centrd., Land</td>
</tr>
<tr>
<td>PEM</td>
<td>Physical Education Acts (GEN) — Perform Centrd., Land</td>
</tr>
<tr>
<td>PEN</td>
<td>Physical Education Acts (GEN) — Water, Snow, Ice</td>
</tr>
<tr>
<td>PEO</td>
<td>Physical Education Acts (PROFNL) — Object Centrd., Land</td>
</tr>
<tr>
<td>PEP</td>
<td>Physical Education Acts (PROFNL) — Perfm. Centrd., Land</td>
</tr>
<tr>
<td>PEQ</td>
<td>Physical Education Acts (PROFNL) — Water, Snow, Ice</td>
</tr>
<tr>
<td>PET</td>
<td>Physical Education Theory</td>
</tr>
<tr>
<td>PHH</td>
<td>Philosophy, History of</td>
</tr>
<tr>
<td>PHI</td>
<td>Philosophy</td>
</tr>
<tr>
<td>PHM</td>
<td>Philosophy of Man &amp; Society</td>
</tr>
<tr>
<td>PHS</td>
<td>Physics — Specialized</td>
</tr>
<tr>
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<td>Physics</td>
</tr>
<tr>
<td>POS</td>
<td>Political Science</td>
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<td>POT</td>
<td>Political Theory</td>
</tr>
<tr>
<td>PPE</td>
<td>Psychology of Personality</td>
</tr>
<tr>
<td>PSB</td>
<td>Psychobiology</td>
</tr>
<tr>
<td>PSC</td>
<td>Physical Sciences</td>
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<tr>
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<td>Psychology</td>
</tr>
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<tr>
<td>QMB</td>
<td>Quantitative Methods in Business</td>
</tr>
<tr>
<td>REA</td>
<td>Reading</td>
</tr>
<tr>
<td>RED</td>
<td>Reading Education</td>
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<tr>
<td>REE</td>
<td>Real Estate</td>
</tr>
<tr>
<td>REL</td>
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<tr>
<td>RET</td>
<td>Respiratory Therapy</td>
</tr>
<tr>
<td>RMI</td>
<td>Risk Management &amp; Insurance</td>
</tr>
<tr>
<td>RTE</td>
<td>Radiological Sciences</td>
</tr>
<tr>
<td>RTV</td>
<td>Radio — Television</td>
</tr>
<tr>
<td>RUS</td>
<td>Russian Language</td>
</tr>
</tbody>
</table>
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.

**Directed Independent Studies**

<table>
<thead>
<tr>
<th>Undergraduates</th>
<th>Special Grad</th>
<th>Grad &amp; Prof</th>
</tr>
</thead>
<tbody>
<tr>
<td>3905 4906</td>
<td>5907 6908</td>
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<td>3930 4932</td>
<td>5917 6918</td>
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<td>3940 4941</td>
<td>5944 6946</td>
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<td>3955 4956</td>
<td>5957 6958</td>
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<tr>
<td>4970</td>
<td>6971</td>
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</tbody>
</table>

These courses may be assigned variable credit. Some may be repeated upon approval.

1The 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; HLTH = Health; 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

ACC 2324 BA 3 (3, 0) F, W, S, SU

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 4 (4, 0) F, W, S, Su
Intermediate Accounting I: PR: Junior standing and 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 4 (4, 0) F, W, S, Su
Intermediate Accounting II: PR: ACC 3101 with a grade of “C” or better. A continuation of ACC 3101.

ACC 3141 BA 4 (4, 0) F, W, S, Su

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 3812 BA 4 (4, 0)
Accounting for Engineers: General Accounting Principles and Practice, Cost Accounting, Budgeting and Control Techniques. Not usable for BSBA degree credit.

ACC 3861 BA 4 (4, 0) F, W, S, Su
Governmental Accounting: PR: ACC 2324 or ACC 3003. Budget accounting and reporting problems of state and national governments.

ACC 4201 BA 4 (4, 0) F, W, S, Su

ACC 4221 BA 4 (4, 0) F, W, S, Su
Consolidated Financial Statements: PR: ACC 3141 Accounting for home office and branch operations, business combinations, and multi-national entities.
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 4 (4, 0) F, W, S, Su

ACC 4521 BA 4 (4, 0) F, W, S, Su
Advanced Federal Income Tax: PR: ACC 4501 Federal income tax for partnerships and corporations, including their organization, distributions, reorganizations, and liquidations.

ACC 4601 BA 4 (4, 0)
Auditing: PR: ACC 3141. The principles, practices and procedures followed in the audit function. Preparation of related working papers and the audit report.

ACC 4621 BA 4 (4, 0) F, W, S, Su
Advanced Auditing: PR: ACC 4601, CAP 3001, STA 3023: Operational Auditing, computer audit techniques, statistical sampling techniques.

ACC 5004 BA 4 (4, 0)

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 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 Preparations: 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 Advertising Campaign: PR: ADV 4000, ADV 4101, ADV 4300. The planning and execution of an advertising campaign; coordination of campaign elements.

AFH 3341 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.

AFR 3404 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 1101 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 1111 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 1120 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 2130 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 2131 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 2140 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 3220 Air Force Communications and Management: PR: GMC or Two-Year Program selection and/or approval of Professor of Aerospace Studies. A review of basic communicative skills and a survey of Air Force communications instruments. Introductory study of Air Force management.

AFR 3230 Air Force Leadership and Management: PR: AFR 3220 or approval of Professor of Aerospace Studies. Introduction to Air Force leadership, traits and interactional approaches to leadership. A continuing study of Air Force management.

AFR 3231 Air Force Evaluation and Management: PR: AFR 3230 or approval of Professor of Aerospace Studies. Introduction to Air Force performance evaluation and a concluding study of Air Force management.

AFR 4201 Military Role in Contemporary Society: PR: AFR 3231 or approval of PAS. Examination of the military profession and its role in American Society.

AFR 4210 Defense Policy and Strategy: PR: AFR 4201 or approval of PAS. A study of the framework of defense policy and formation of defense strategy including political, economics and social constraints upon the national defense structure.

AFR 4211 Implementation of Defense Policy: PR: AFR 4210 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. An examination of the essential features of the military justice system.

AFR 4240 Introduction to Flight (Pilot): PR: AFR 3220, 3230, 3231 and/or permission of the Professor of Aerospace Studies. An academic, introductory study of weather, navigation, FAA regulations and flight radio procedures.
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Catalog Code</th>
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<tbody>
<tr>
<td>AMH 3310</td>
<td>American Social History.</td>
<td>HFA 4 (4, 0) F, W, S</td>
</tr>
<tr>
<td>AMH 3350</td>
<td>American Political History.</td>
<td>HFA 4 (4, 0) F, W, S</td>
</tr>
<tr>
<td>AMH 3370</td>
<td>American Economic History.</td>
<td>HFA 4 (4, 0) F, W, S</td>
</tr>
<tr>
<td>AMH 3402</td>
<td>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.</td>
<td>HFA 4 (4, 0) W</td>
</tr>
<tr>
<td>AMH 3403</td>
<td>History of the South Since 1865: Reconstruction, the &quot;solid South&quot; and the racial dilemma, progressivism for whites only, southern literature, 20th century economic, political, and social changes, and the new Reconstruction.</td>
<td>HFA 4 (4, 0) S</td>
</tr>
<tr>
<td>AMH 3421</td>
<td>History of Florida to 1845</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 3423</td>
<td>Florida History 1845 — Present</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 3441</td>
<td>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.</td>
<td>HFA 4 (4, 0) F</td>
</tr>
<tr>
<td>AMH 3442</td>
<td>History of the Frontier: Western America. The development of the trans-Mississippi West and its impact upon American history.</td>
<td>HFA 4 (4, 0) W</td>
</tr>
<tr>
<td>AMH 3445</td>
<td>Spanish Borderlands.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 3570</td>
<td>Black American History: History of Negroes from their African heritage through American Slavery to freedom and their role in 20th Century America.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 4110</td>
<td>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.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 4130</td>
<td>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.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 4140</td>
<td>Jeffersonian America: The Confederation era, the Federalists, Jeffersonian Democracy, and the War of 1812.</td>
<td>HFA 4 (4, 0) W</td>
</tr>
<tr>
<td>AMH 4160</td>
<td>Jacksonian America: The risk of American nationalism, Jacksonian Democracy, the Mexican War and sectional conflict.</td>
<td>HFA 4 (4, 0)</td>
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<tr>
<td>AMH 4170</td>
<td>Civil War and Reconstruction: Reconstruction, and impact of industrialism.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 4211</td>
<td>Robber Baron Era: The Agrarian Revolt, the Spanish-American War, and the Progressive Era.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 4231</td>
<td>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.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 4270</td>
<td>United States History: 1945-Present: Contemporary America from World War II.</td>
<td>HFA 4 (4, 0)</td>
</tr>
<tr>
<td>AMH 4311</td>
<td>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.</td>
<td>HFA 4 (4, 0)</td>
</tr>
</tbody>
</table>
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.

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.

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.

Colloquium in U.S. Colonial History: PR: Senior Standing of C.I. Reading and discussion of the literature on selected topics in U.S. History.

Colloquium in U.S. Revolutionary Period: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics of the Revolutionary Era, 1783-1789.

Colloquium in Early U.S. Hist., 1789-1815: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics of the early national period.

Colloquium Age of Jackson: PR: Senior Standing or C.I. Intensive reading and class discussion on selected topics of the Jacksonian age.

Colloquium in Civil War and Reconstruction: PR: Senior Standing or C.I. Intensive reading and class discussion on selected topics of the Civil War and Reconstruction era.

Colloquium in Late 19th Century U.S.: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics of late 19th century U.S.

Colloquium in 20th Century U.S. PR: Senior Standing or C.I. Reading and class discussion on selected topics in 20th century U.S.

Colloquium in U.S. Cultural History: PR: Senior Standing or C.I. Students will read and discuss a common or diverse body of the significant literature in the field.

Colloquium in American South. PR: Senior Standing or C.I. Intensive reading and class discussion on selected topics of Southern history from colonial origins to the present.

Colloquium in U.S. Frontier: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics of frontier history.

Colloquium in U.S. Diplomatic History: PR: Senior Standing or C.I. A survey of the historical literature of American foreign policy.

Seminar in Colonial U.S.: PR: C.I. Supervised research and writing of term papers on selected topics in American colonial history, 1492-1763.

Seminar in American Revolution: PR: Graduate status or C.I. Selected topics in American history, 1763-1789.

Seminar in Civil War and Reconstruction: PR: C.I. Supervised research and writing of term papers on selected topics of Civil War and Reconstruction era. Papers will be presented and defended in class.

Seminar in Late 19th Century U.S. PR: C.I. Supervised research and writing of term papers on selected topics on the farmer and labor movements and the growth of industrialization.
Seminar in U.S. Politics: PR: C.I. Supervised research and writing of term papers on selected topics in American political history.

Seminar in U.S. Cultural History: PR: C.I. Seminar papers will be written, presented and discussed dealing with selected themes in U.S. cultural history.

Seminar in American South: PR: C.I. Supervised research and writing of term papers on selected topics in Southern history. Papers will be presented and defended in class.

Seminar in U.S. Frontier: PR: C.I. Supervised research and writing of term papers on selected topics in the history of the American frontier.

Seminar in Local History: PR: C.I. Supervised research and writing of term papers on selected topics in city, county and regional history.

Seminar in U.S. Diplomatic Hist: PR: C.I. Supervised research and writing of papers on selected topics in the history of American foreign policy, 1776-present.

Survey of American Literature, 1588-1865

Survey of American Literature, 1865-1914

Survey of American Literature Since 1914

Literature of the South: PR: ENC 1135 or C.I. Development of Southern literature from its beginnings in the "Old South" through the post-Civil War and the Southern Renaissance to the present. Emphasizes readings from Poe, Ransom, Tate, Faulkner, Porter, Warren, O'Connor, Percy and Styron.

General Anthropology: An Introductory survey of the four major sub-fields of anthropology: Social Anthropology, Physical Anthropology, Linguistics and Archeology.


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.

Prehistory of Complex Societies: An analysis of prehistoric urban systems in Europe, Asia, Africa and the Americas, approached in an evolutionary perspective.

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.

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.

The Anthropology of Religion: Patterns in religious behavior in various societies with primary emphasis on myth, rite, taboo and festival as social phenomena.

Ethnology of North American Indians: A survey of the aboriginal cultures of North America with emphasis on the pre-contact cultural condition.

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: PR: ANT 2003 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: Theories of the variations in personality in relation to culture and group life.

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 (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)  Primatology: 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  HLTH 3 (3, 0) F  Pulmonary Physiology: PR: PCB 3703C. Normal ventilation, lung mechanics, pulmonary circulation, diffusion and blood gases.

APB 3263L  HLTH 1 (0, 3) W  Pulmonary Physiology Laboratory: CR: APB 3263. Experiments and demonstration concerning ventilation, mechanics, and gas transport.

APB 3293  HLTH 3 (3, 0) S  Respiratory Pathology: PR: NS ZOO 3733. Cellular pathology with emphasis on pathology of respiratory and cardiovascular systems.


APB 3535C  NS 3 (1, 6) S  Serology: PR: PCB 3233. Laboratory exercises in the production of antibodies, agglutination and precipitin reactions; quantitative techniques and isohemoagglutination.


APB 4650 Medical Pharmacology II: PR: APB 4610. Continuation of APB 4610.

APB 4783C 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 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 Art in the Elementary School: Basic principles, purposes, scope and sequence; organization for instruction; evaluation of activities; selected art experiences.

ARE 4344 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 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 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 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 4643 Continuing Art Progress in Schools: PR: ARE 4344 or C.I. Programs and innovations for visual arts in the Schools.

ARE 4894 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 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 5648 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 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  
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  
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  
The History of Art I: Painting, sculpture and architecture from the Prehistoric Era through the Medieval Period.

ARH 2051  
The History of Art II: Painting, sculpture, and architecture from the Renaissance to the 19th Century.

ARH 2052  
The History of Art III: Painting, sculpture, and architecture of the 19th and 20th Centuries.

ARH 3118  
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  
Aslan Art: History of visual arts of China, Japan, India and other Eastern cultures.

ARH 3710  
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  

ARH 4170  
Greek & Roman Art

ARH 4301  
Renaissance Art

ARH 4350  
Baroque Art

ARH 4430  
19th Century Art

ARH 4700  
Art and Technology: The impact of technological developments in the visual arts of the 20th Century.

ARH 4730  
Environmental Art: Analysis of aesthetic design factors, related to city planning, architecture, product design, and experimental environmental arts.

ARH 4800  
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  
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  
Design Fundamentals II: Emphasis on color theory.

ART 2203C  
Design Fundamentals III: Emphasis on three-dimensional design in the various sculptural media.

ART 2300C  
Drawing Fundamentals I: Drawing as a means of formal organization. Introduction to problems in drawing methods and media. Emphasis on description techniques.

ART 2301C  
Drawing Fundamentals II: Continuation of ART 2300. Emphasis on traditions of spatial organization.

ART 3110C  Ceramics: PR: ART 2203 or C.I. Basic concepts of ceramic design, experience in processes of forming, decorating, glazing, and firing pottery.


ART 3232C  Graphic Design II: PR: ART 3280 or C.I. Methods, materials, and processes related to perceptual studies in graphic design.

ART 3233C  Graphic Design III: PR: ART 3232, or C.I. Studio problems stressing balance between articulation and succinct presentation of information.

ART 3280C  Graphic Design I: PR: ART 2201, 2202 or C.I. Study of classical and historic type as graphic design elements.


ART 3400C  Printmaking: PR: Three quarter hours of Drawing Fundamentals or C.I.

ART 3510C  Painting: PR: Three quarter hours in Design Fundamentals and three quarter hours in Drawing Fundamentals or C.I.

ART 3600C  Photography: PR: ART 2201. Consideration of basic technical and aesthetic factors in using still photography as a vehicle for visual, artistic expression.

ART 3601C  Intermediate Photography: PR: ART 3600C. Investigation of limited formulas and materials as applied to students portfolio requirement.

ART 3701C  Sculpture: PR: Six quarter hours in Design Fundamentals, to include three quarter hours in three-dimensional work, or C.I.

ART 4108C  Advanced Three-Dimensional Design. PR: ART 3100. May be repeated for credit. Advanced problems in three-dimensional materials, processes, form.

ART 4111C  Advanced Ceramics: PR: ART 3110C. May be repeated for credit.

ART 4130C  Fibers, Fabrics, Textiles and Synthetics: Textile design and production, including non-loom weaving processes. May be repeated for credit.


ART 4235C  Advanced Graphic Design I: PR: ART 3233 or C.I. Large scale studio problems involving modern graphic design media.
ART 4237C  Advanced Graphic Design II: PR: ART 4235 or C.I. Problems initiating search for formulae in graphic design photography.

ART 4239C  Special Problems in Graphic Design: PR: ART 4237 or C.I. May be repeated for credit.

ART 4320C  Advanced Drawing: PR: ART 3330. May be repeated for credit.

ART 4402C  Advanced Printmaking: PR: ART 3400. May be repeated for credit.

ART 4530C  Advanced Painting: PR: ART 3510. May be repeated for credit.

ART 4604C  Advanced Photography: PR: ART 3600. May be repeated for credit.

ART 4608C  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 4634C  Special Problems in Film Design: A series of exercises in craft, technique, and design for film production, including animation.

ART 4703C  Advanced Sculpture: PR: ART 3701. May be repeated for credit.

ART 4965  Senior Studio and Exhibition: PR: By petition (See page 136). Required for all B.F.A. degree candidates. Not open to B.A. degree candidates.

ASH 3223  Modern Middle East

ASH 3300  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  China in 19th and 20th Centuries: The Mongols in China; coming of the Europeans; social structure; Communist movement; Japanese aggression.

ASH 4442  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  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  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 4054  Biochemistry II: PR: BCH 4053. Continuation of BCH 4053.


BCH 4103L  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**
Contracts and Specifications: Basic legal principles involved in contractual provisions and interrelationships of specifications and the application of such principles.

**BCN 4220**
Construction Methods: Construction principles and the details of the uses of construction materials and the methods utilized for obtaining good construction details.

**BES 3512**
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**
General Botany: Introduction to botany; plant structure and function with emphasis on forms and applications important to man.

**BOT 3223C**
Plant Anatomy: PR: BOT 1010. A study of development, structure and function of the principal organs and tissue of vascular plants.

**BOT 3303C**
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**

**BOT 3800**
Plants and Man — Ethnobotany: Man's historical and modern uses of plants economically important in various cultures. Design for non-majors.

**BOT 3820**
Plants and the Urban Environment: The selection, placement, propagation and care of ornamental plants in residential and industrial areas. For non-majors.

**BOT 4154**
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**
Freshwater Algae: PR: BOT 1010 or C.I. A lecture-laboratory course to survey the physiology, diversity and ecology of the freshwater algae.

**BOT 4503C**
Plant Physiology: PR: PCB 3023, or C.I. A study of mechanisms used by plants to cope with the environment.

**BOT 4623**
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**
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**
Plant Biosystematics: PR: BOT 3713. Evolutionary relationships, plant taxa and populations utilizing cytological, morphological, and biochemical techniques.

**BOT 6146C**
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 source reviewed.

**BSC 1010C**
Basic Biology: Basic principles, unifying concepts and facts of modern biology. Introduction to quantitative biological experimentation. For Biological Sciences, Allied Health Sciences and preprofessional majors.

**BSC 1020C**
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
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
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
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

BSC 6406C
Field Methods for Biology: PR: Two years of biology. Experimental techniques and design in field biological research.

BSC 6407C
Laboratory Methods for Biology: PR: PCB 3023 or MCB 4404. Experimental techniques and design in laboratory biological research.

BTE 1060
Introductory Typewriting: Instruction in touch control of the typewriter keyboard. Introduction to typing letters, tables, manuscripts, and typing composition.

BTE 2061
Typewriting Production: Extend speed and accuracy in touch typewriting. Develop skills for advanced letters, tables, and manuscripts.

BTE 2063
Principles of Shorthand I: Introduction to basic theory of Gregg shorthand, vocabulary development, and speed building.

BTE 2064
Principles of Shorthand II: CR: BTE 1060, PR: BTE 2063 or equivalents. A continuation of Gregg shorthand theory, vocabulary development, and speed building.

BTE 3151
Advanced Shorthand: CR: 2061. PR: BTE 2064 or equivalents. Extend and refine Gregg shorthand dictation, speed and vocabulary; introductory typewritten communication production skills.

BTE 3391
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 3391L
Typewriting Laboratory for Instructional Development: CR: BTE 3391. Practical application of typewriting theory in the competency-based and traditional classroom. For Business Education Majors only.

BTE 4071
Professional Student Leadership Development: Knowledge and application of objectives for vocational student organizations. Participation in local, state and national business education organization functions. (May be repeated once.)

BTE 4152
Shorthand Dictation and Transcription: CR: BTE 3062 and BTE 3151. Professional level shorthand dictation for transcription and refinement of typewritten communications production skills.

BTE 4154
Office Simulation: PR: BTE 4265 and Senior standing. A study of performance in the tasks of the contemporary office, its structure, concepts and dynamics.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit Hours</th>
<th>Days</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTE 4366</td>
<td>BA 4 (4, 0) F, W, S, Su</td>
<td></td>
<td>Business Correspondence: Originating written business correspondence to include letters, memoranda, and business forms. (Typewriting skill recommended.)</td>
</tr>
<tr>
<td>BTE 4392</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>BTE 4392L</td>
<td>BA 1 (0, 4) F, W, S, Su</td>
<td></td>
<td>Shorthand Laboratory for Instructional Development: CR: BTE 4392. Practical application of shorthand theory in the competency-based and traditional classroom. For Business Education majors only.</td>
</tr>
<tr>
<td>BTE 4393</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>BTE 4393L</td>
<td>BA 1 (0, 4) F, W, S, Su</td>
<td></td>
<td>Office Technology Laboratory for Instructional Development.</td>
</tr>
<tr>
<td>BTE 6172</td>
<td>ED 4 (4, 0)</td>
<td></td>
<td>Business Education Curriculum: PR: Rank III Certificate or C.I. Curriculum planning and development; objectives; innovations, problems and issues in contemporary Business programs.</td>
</tr>
<tr>
<td>BTE 6374</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>BTE 6771</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>Evaluation and Research In Business Education: Rank III Certificate or C.I. A study of standardized and prognostic tests; functions, construction, administration, and evaluation of measurement instruments; research techniques for business education.</td>
</tr>
<tr>
<td>BTE 6772</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>BTE 6773</td>
<td>ED 4 (3, 4)</td>
<td></td>
<td>Office Simulation Techniques: PR: Rank III Certificate or C.I. Methods of office simulation for teachers at the developmental and performance levels.</td>
</tr>
<tr>
<td>BTE 6774</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>BTE 6946</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>BTE 6947</td>
<td>ED 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>BUL 3111</td>
<td>BA 3 (3, 0) F, W, S, Su</td>
<td></td>
<td>Legal Environment of Business: The presentation of law as an expanding social and political institution in the environment of the business enterprise.</td>
</tr>
<tr>
<td>BUL 3112</td>
<td>BA 3 (3, 0)</td>
<td></td>
<td>Business Law I: PR: BUL 3111. Recognized commercial organizations and their functions in the business world.</td>
</tr>
<tr>
<td>BUL 3121</td>
<td>BA 3 (3, 0)</td>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>
BUl3301

BUl5125

CAP 3001
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
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

CAP 3007
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

CAP 5101
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 counselling, simulation and games.

CAP 5612
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
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, robotics, machine and human learning.

CAP 5722
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
Simulation/Performance of Computer Systems: PR: CDA 5106 and COP 5613. Performance measurement of hardware and software systems, simulation techniques, monitoring programs.

CAP 6723
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
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

CCJ 2020
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.
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.

Criminal Justice System: Examination of the system of criminal justice; its goals, processing of cases and persons, and conflicts between components.

Criminal Law in Action: Basic concepts of criminal law, their origin and development, constitutional and procedural rules; and Federal and State relations.

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.

The Correctional and Penal Systems: Theories, structures and methods of institutional and non-institutional services in the rehabilitation of criminal offenders.

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.

Municipal Police Administration: PR: CCJ 2020. Study of contemporary operational concepts of administration with an emphasis on function, rather than structure.

The Criminal Justice Manager: PR: C.J. Elements of first-line supervision and executive development. Administrative leadership; its nature; methods and traits.

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.

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.

Justice Policy and Social Conflict: The effects of social conflicts and political decisions on the administration of justice, stressing the law enforcement role.

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.

Delinquency Control: Examination of programs and institutions including juvenile court process, intake services, and remedial procedures and practices.

Comparative Justice Systems: A survey of contemporary foreign criminal justice systems, differences emerging from various cultural and legal systems.

Criminal Justice Internship: PR: C.J. Internship in municipal, county, state or federal criminal justice agency. Includes assignments in police, courts, corrections components.

Minicomputer Programming/Laboratory: PR: COP 3402. System and user defined macros, debugging techniques, introduction to an operating system, files, bootstrap leaders, tasks, diagnostic routines, introduction to microprogramming. Uses Varian 73 minicomputer.

Computer Interfacing for Scientists: PR: CHM 2047, or PHY 2041, or PHY 2052, or equivalent, or C.J. Hands-on laboratory embracing simple gate, flip flop, decoding and counting circuits, digital logic. Interfacing to a microcomputer for data logging and experimental control.

Introduction to Computer Architecture: PR: CDA 3151; and CDA 4012 or EEL 3341. Survey of machine instructions, processor characteristics, and microprogramming concepts.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDA 4142</td>
<td>Microcomputer Organization</td>
<td>PR: CDA 3151. An analysis of a microcomputer's organization, and chip set with emphasis on a system programming.</td>
</tr>
<tr>
<td>CDA 4143</td>
<td>Microcomputer Interfacing/Software</td>
<td>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.</td>
</tr>
<tr>
<td>CDA 4144</td>
<td>Microcomputer Applications</td>
<td>PR: CDA 4143. A case study investigation into several commercial available microprocessor based systems.</td>
</tr>
<tr>
<td>CDA 5106</td>
<td>Advanced Computer Architecture I</td>
<td>PR: 4102. Evolution of computer architecture; memory organization; cache; virtual memory; highspeed processor design; pipeline multi-functional and array machines; special architecture case studies; overview of channel architecture.</td>
</tr>
<tr>
<td>CDA 6107</td>
<td>Advanced Computer Architecture II</td>
<td>PR: CDA 5106. Multiprocess systems; interconnection network; stack architectures; high-level language architecture; design languages; performance evaluation.</td>
</tr>
<tr>
<td>CDA 6108</td>
<td>Current Topics in Computer Architecture</td>
<td>PR: CDA 6107. Associative machine architectures; nonnumeric and database machines, data flow architecture; fault, tolerant architecture.</td>
</tr>
<tr>
<td>CDA 6166</td>
<td>Computer-Based Communications Networks</td>
<td>PR: CDA 5106 and COP 5813. Functions of communications systems, communication system hardware, communication system organization and structure, examples.</td>
</tr>
<tr>
<td>CES 4124</td>
<td>Structural Engineering Analysis</td>
<td>PR: EGN 3331. Topics in structural mechanics, energy methods, indeterminate structures by flexibility, stiffness method, analysis of columns.</td>
</tr>
<tr>
<td>CES 4144</td>
<td>Matrix Methods of Structural Analysis</td>
<td>PR: EGN 3331. Structural analysis of beams, frames, and plates by matrix methods.</td>
</tr>
<tr>
<td>CES 4605</td>
<td>Structural Steel Design</td>
<td>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.</td>
</tr>
<tr>
<td>CES 4704</td>
<td>Structural Concrete Design</td>
<td>PR: CES 4124 or C.I. Principles of designing reinforced concrete members. Selected topics in concrete mixes, beams, columns, and ultimate analysis.</td>
</tr>
<tr>
<td>CES 5102</td>
<td>Intermediate Mechanics of Materials</td>
<td>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.</td>
</tr>
<tr>
<td>CES 5107</td>
<td>Matrix Structural Analysis</td>
<td>PR: CES 4144 or equivalent. Optimization and matrix methods applied to the design of real structures.</td>
</tr>
</tbody>
</table>
Steel Design: PR: CES 4605 or equivalent. Design of complete steel structures to include economics, plastic design and real building examples.

Concrete Design: PR: CES 4704 or equivalent. Design of concrete structures to include economics, slabs, prestressed concrete, and real building examples.

General Chemistry: An introductory study of the fundamental concepts of chemistry, oriented toward AHS and Biology Education majors.

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.

Chemistry Fundamentals II: PR: CHM 2045. Continuation of CHM 2045.

Chemistry Fundamentals Laboratory: PR: CHM 2045 or CR: CHM 2046. Illustration chemical principles and introduction to the techniques of inorganic and physical chemistry.


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.


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.


Organic Laboratory Techniques II: PR: CHM 3211 and CHM 3211L. Open-end laboratory to develop synthesis, techniques and structure elucidation skills.

Physical Chemistry I: PR: CHM 2047, PHY 2041, and MAC 3312. Rigorous treatment of atomic and molecular structure, thermodynamics, kinetics, and chemical bonding.

Physical Chemistry II: PR: CHM 3410. Continuation of CHM 3410.
Physical Chemistry Laboratory I: PR: CHM 3121C, CHM 3410 and COP 1110 or COP 3215. Classical as well as modern instrumental techniques coupled with computer data processing to measure physical properties and determine atomic and molecular parameters.

Physical Chemistry III: PR: CHM 3411. Continuation of CHM 3411.

Physical Chemistry Laboratory II: PR: CHM 3411 and CHM 3411L. Continuation of CHM 3411.

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.

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.

Analytical Methods Development: PR: CHM 3122C. A lecture-laboratory course in which students propose and evaluate procedures for inorganic and organic analyses.


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.


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.

Chemical Structure II: PR: CHM 5710. Continuation of CHM 5710.

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.

Criminalistics I: PR: CHM 2047 or C.I. Examination and evaluation of evidence obtained from suspect criminal actions, including the microscopy of trace evidence.

Criminalistics II: PR: CHS 3511. Continuation of CHS 3511.

Criminalistics: PR: CHS 3511. Examination and evaluation of evidence from civil actions involving water and air pollution, public safety, and product design.

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.

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.

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.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS 4591</td>
<td>Forensic Science Internship: PR: C.I.</td>
<td>Credit for full-time work (10-12 Weeks) in a professional forensic laboratory. This course may be repeated for credit.</td>
</tr>
<tr>
<td>CHS 5240</td>
<td>Chemical Dynamics I: PR: CHM 3412 or equivalent.</td>
<td>Dynamics of chemical reactions and physical processes including equilibrium systems catalysis, transport processes and physical phenomena at interfaces.</td>
</tr>
<tr>
<td>CHS 5241</td>
<td>Chemical Dynamics II: PR: CHS 5240.</td>
<td>Continuation of CHS 5240.</td>
</tr>
<tr>
<td>CHS 5250</td>
<td>Chemical Synthesis I: PR: CHM 3212, 3211, and 3412; or equivalent.</td>
<td>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.</td>
</tr>
<tr>
<td>CHS 5251</td>
<td>Chemical Synthesis II: PR: CHS 5250.</td>
<td>Continuation of CHS 5250.</td>
</tr>
<tr>
<td>CHS 6260C</td>
<td>Separation Process: PR: CHM 3211 and CHM 3412; or equivalent.</td>
<td>A study of the basic operations utilized in separation processes. Topics will include distillation, azeotropic distillation, solvent extraction, absorption, crystallization, filtration and ion exchange.</td>
</tr>
<tr>
<td>CHS 6261</td>
<td>Chemical Processes: PR: CHS 6260 or equivalent.</td>
<td>Case study approach which reviews strategy in the development of selected chemical processes.</td>
</tr>
<tr>
<td>CHS 6262C</td>
<td>Process Kinetics and Control: PR: CHM 3122 and CHS 6261; or equivalent.</td>
<td>A case study approach analyzing kinetic data and techniques used in the design of reactors and process control systems.</td>
</tr>
<tr>
<td>CHS 6263</td>
<td>Chemical Process Economics: PR: C.I.</td>
<td>Consideration of the various cost factors involved in economics of a chemical process and methods used in evaluating relative economics of various processes.</td>
</tr>
<tr>
<td>CIS 4112</td>
<td>Database Processing: PR: COP 4530.</td>
<td>Commercial database system user views; theoretic user views. Students use a database system to design and store a database.</td>
</tr>
<tr>
<td>CIS 4323</td>
<td>Data Processing Systems Analysis and Design: PR: COP 4530.</td>
<td>Data organization; physical storage; database system architecture. Student design a database management system.</td>
</tr>
<tr>
<td>CIS 4324</td>
<td>Data Processing Systems Implementation: PR: CIS 4323, 4112</td>
<td>System implementation project. Selected topics of interest.</td>
</tr>
<tr>
<td>CIS 5012</td>
<td>Information and File Systems Analysis: PR: COP 4530 or equivalent.</td>
<td>Logical and physical information system design. Analysis of file systems. Introduction to data management systems.</td>
</tr>
<tr>
<td>CIS 6124</td>
<td>Data Base Management Systems Theory: PR: CIS 6122.</td>
<td>Theory of data models, data languages and data base management systems.</td>
</tr>
<tr>
<td>CLP 3003</td>
<td>Psychology of Adjustment: Psychological principles of adjustment; application of psychology to problems in living.</td>
<td></td>
</tr>
</tbody>
</table>
Clinical Psychology: PR: PPE 3003 or CLP 3143. An overview of approaches to psychopathology, methods of clinical assessment, and various approaches to individual and group counseling.


Psychological Assessment II: PR: CLP 6441, graduate admission and C.I. CR: PSY 6946. Theories and techniques of psychological assessment with primary emphasis on objective and projective techniques of personality assessment, interviewing skills and report writing.


Clinical Intervention III: PR: Grad Admission and C.I. Introduction to the principles and procedures of behavior modification as a clinical intervention technique.


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.


Computational Methods/Linear Systems: PR: CNM 4110 and MAS 3113. Mathematical models for linear systems, linear programming the simplex method, integer and mixed-integer programming, introduction to nonlinear optimization and linearization.


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.

Personal Computing: Survey of personal computers available on the market; applications for education, entertainment and clerical work; programming in Basic with exercises.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 1000</td>
<td>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.</td>
<td>SS 4 (4, 0)</td>
<td>F, W, S, Su</td>
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<tr>
<td>COM 3110</td>
<td>Business and Professional Communication: PR: SPC 1014 or C.I. Theoretical and practical training in effective presentational speaking for business and professions.</td>
<td>SS 4 (4, 0)</td>
<td>F, W, S, Su</td>
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<tr>
<td>COM 3120</td>
<td>Organizational Communication: A study of communication functions and problems within the contexts of hierarchies.</td>
<td>SS 4 (0, 0)</td>
<td>F, S</td>
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<tr>
<td>COM 3311</td>
<td>Communication as a Behavioral Science: Basic principles of the behavioral science approach to the study of contemporary communication.</td>
<td>SS 4 (4, 0)</td>
<td>F, W, S, Su</td>
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<tr>
<td>COM 4020</td>
<td>Informational Communication: An examination of available communication systems (non-technical) and their utilization within business, educational, entertainment, industrial, medical, and military organizations.</td>
<td>SS 4 (4, 0)</td>
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<tr>
<td>COM 6121</td>
<td>Communications Management: PR: C.I. Analysis and development, with reference to particular media. Organizational theory, structure and behavior. Management principles and operations.</td>
<td>SS 4 (4, 0)</td>
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<tr>
<td>COM 6300</td>
<td>Introduction to Graduate Study in Communication: This course is designed to introduce the student to practical and theoretical considerations for independent research in communication.</td>
<td>SS 4 W</td>
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<tr>
<td>COM 6312</td>
<td>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.</td>
<td>SS 4 S</td>
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<tr>
<td>COM 6314</td>
<td>Audience Measurement: PR: C.I. Examination and review of audience measurement techniques. Individuals assignments for compilation and analysis of measurement data.</td>
<td>SS 4 (4, 0)</td>
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<tr>
<td>COP 1110</td>
<td>Computer Programming: PR: College Algebra and Trigonometry or equivalent. Problem definitions, algorithms, flow charts, digital computer programming using a higher level language (FORTRAN).</td>
<td>NS 3 (3, 0)</td>
<td>F, W, S</td>
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<tr>
<td>COP 2510</td>
<td>Programming I: PR: College Algebra and College Trigonometry or equivalent. Algorithm concepts; basic programming concepts and techniques, flow of control; character strings; I/O techniques; programming style; computer experience in a procedure-oriented language.</td>
<td>NS 3 (3, 0)</td>
<td>F, W, S</td>
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<tr>
<td>COP 2511</td>
<td>Programming II: PR: COP 2510. Continuation of COP 2510. Arrays; procedures; structures; recursion; sorting and searching algorithms. Computer experience in a procedure-oriented language.</td>
<td>NS 3 (3, 0)</td>
<td>F, W, S</td>
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<tr>
<td>COP 3120</td>
<td>Cobol I: PR: At least one programming course or equivalent experience. Basic COBOL programming, preparation of business reports, laboratory projects.</td>
<td>NS 3 (3, 0)</td>
<td>F, S</td>
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<tr>
<td>COP 3121</td>
<td>Cobol II: PR: COP 3120. Processing sequential, indexed and random files; advanced topics system utility programs and laboratory projects.</td>
<td>NS 3 (3, 0)</td>
<td>W</td>
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<tr>
<td>COP 3215</td>
<td>Programming and Numerical Methods: CR: MAC 3312. Problem definitions, algorithms, flow charts, digital computer programming using FORTRAN for numerical applications.</td>
<td>NS 3 (3, 0)</td>
<td></td>
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<tr>
<td>COP 3402</td>
<td>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.</td>
<td>NS 4 (3, 3)</td>
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<td>Course</td>
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<tr>
<td>COP 3522</td>
<td>Structured Programming: PR: COP 2511 or equivalent. Concepts of structured programming; files manipulation; programming in an interactive mode. A major program project is assigned.</td>
<td>NS 3 (3, 0)</td>
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<tr>
<td>COP 4530</td>
<td>Data Structures: PR: COP 3402 and COP 3522. Basic concepts of data; linear lists, strings, arrays, and orthogonal lists; ordering or sorting techniques; recursion; string and list processing languages.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 4550</td>
<td>Programming Languages I: PR: COP 4530. Features of high-level programming languages; introduction to compiling and interpreting techniques; SNOBOL and LISP.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 4620</td>
<td>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.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 5554</td>
<td>Programming Languages II: PR: COP 4550 and COP 4001. A formal study of programming language design and specification, BNF grammars models of semantics, compilers and interpreters.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 5613</td>
<td>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.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 6555</td>
<td>Philosophy of Programming/Languages: PR: COP 5554 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.</td>
<td>NS 3 (3, 0)</td>
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<tr>
<td>COP 6614</td>
<td>Operating Systems: PR: COP 5613. Scheduling theory, queuing theory deadlock prevention algorithms, multiprocessor systems, paging algorithms.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 6615</td>
<td>Operating Systems Theory: PR: COP 6614. Theory of operating systems for computer systems including multiprocessor systems and computer networks.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 6642</td>
<td>Introduction to the Theory of Translation: PR: COP 5554. Language theory, the theory of translation and parsing, finite automata and pushdown acceptors.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 6643</td>
<td>Compiler Construction: PR: COP 6642. Techniques in the design and implementation of compilers. A project is required.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COT 4001</td>
<td>Discrete Computational Structures: PR: COP 2511, MAC 3313. Finite and discrete mathematical structures related to the theory of computing, algorithms, graphs, finite state machines, Turing machines, monoids, and combinatorics.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COT 5314</td>
<td>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.</td>
<td>NS 4 (4, 0)</td>
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<tr>
<td>COP 3034</td>
<td>Politics of Developing Areas: An analysis of non-Western political systems with emphasis upon the problems of political, socio-economic, and cultural development.</td>
<td>SS 4 (4, 0)</td>
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<tr>
<td>COP 3103</td>
<td>Comparative Politics: An analytical and comparative study of politics in other nations with emphasis upon the relationships of social environments and political systems.</td>
<td>SS 4 (4, 0)</td>
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<tr>
<td>COP 3502</td>
<td>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.</td>
<td>SS 4 (4, 0)</td>
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<tr>
<td>COP 4024</td>
<td>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.</td>
<td>SS 4 (4, 0)</td>
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</table>

CPO 4133: Government & Politics of Canada: Examines the origins & development of Canadian government. Focuses on the functioning of institutions of government and process of politics, includes U.S.-Canada relations.

CPO 4643: 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: 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: 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: 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: Introduction to Fiction Writing: Practice in writing the short story; group analysis and criticism of work produced by individual students.

CRW 2321: Introduction to Verse Writing: Practice in writing poetry; group analysis and criticism of work produced by Individual students.

CRW 3132: Creative Writing Workshop I: PR: C.I. Practice in established forms: essay, short story, and poetry.

CRW 3140: 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: Creative Writing Workshop III: PR: CRW 3140 or C.I. Individualized practice in writing in one of the established forms: analytic study of the work of pertinent authors.

CRW 3530: Writing for Children: Practice in writing publishable literature for pre-school and elementary level children.

CRW 4940: Writing Practicum I: PR: C.I. Intensive writing practice in fiction, non-fiction, or verse.

CRW 4941: Writing Practicum II: PR: CRW 4940. Continuation of CRW 4940.

CRW 4942: Writing Practicum III: PR: CRW 4941. Continuation of CRW 4941.

CYP 6948: Community Psychology Internship: PR: Graduate admission, 2nd year status and C.I. Supervised placement in community setting. (May be repeated for credit).

DAA 3180: Movement as an Art Form: Analysis of creative movement techniques which increase body awareness and enhance the communicative potential of the instrument of dance.

DAA 3220: Theatre Dance I: Fundamentals of Classical Ballet, includes practical class work as well as Dance History lectures.

DAA 3510: Theatre Dance II: Specific focus on American musical theatre dance forms. May be repeated for credit.
DAA 3700
Choreography of Contemporary Dance: PR: Sophomore standing. Dance production as an art form.

DAA 6050
Rhythms: PR: Rhythm III Certificate or C.L. Instructional analysis in classical and modern rhythms.

DAE 3301
Instructional Analysis of Rhythms: PR: Sophomore standing. Analysis of rhythm and rhythmic activities as they relate to teaching physical education.

DEP 3004

DEP 3202
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
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 5057
Developmental Psychology: PR: Graduate admission or C.L. Psychological aspects of development including intellectual, social and personality factors.

DHE 4101
Population: Concerned with the study of human population, its distribution, composition and change.

EAB 3703
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

EAB 5765
Applied Behavior Analysis with Children and Youth: PR: DEP 5057 and EXP 5444 or C.L. Advanced survey of principles, procedures and techniques of applied behavior analysis, with special attention to applications with children and youth.

EAS 4101
Introductory Aerodynamics: PR: EML 4709. Basic aerodynamic analysis of wings and bodies in incompressible and compressible flows including airplane performance, stability and control.

EAS 4300

EAS 5114
Potential Flow Aerodynamics: PR: EML 4709 or equivalent. Theoretical aerodynamic concepts involving potential flow about wings and bodies, i.e. vortices, thin airfoil theory, finite wing theory, etc.

EAS 6123
Advanced 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

ECI 3404
Civil Engineering Materials: PR: C.L. The characterization of materials used in civil engineering works to include concrete, soils, bituminous, polymers and composite materials.
ECI 3603  
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  
Construction Engineering: PR: C.I. Project specifications, negotiations, contracts, unions, planning, insurance and safety with methods and equipment related to Civil Engineering.

ECI 4305  

ECI 4305L  
Geotechnical Engineering Laboratory: PR: ECI 4305 or C.I. Fundamental geotechnical engineering experiments, classification, grain size, atterberg limits, compaction, etc.

ECI 4323  
Civil Engineering Systems Design: PR: CES 4605 or 4704, ECI 4305, TTE 4004 and ENV 4504. Project course on design of foundations, structures, transportation and environmental projects using engineering science and civil engineering design methodologies.

ECI 5147  
Construction Management: PR: C.I. Planning and Management of construction projects: CPM and PERT analysis with preparation of estimates and contact documents. Selection and economics of heavy construction equipment.

ECI 5215C  
Hydraulic Engineering: PR: EGN 3353. Environmental and civil engineering hydraulics applications. Pipe and open channel flow, fittings, flow measurements, etc.

ECI 5306  
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 6045  
Mathematical Modeling in Civil Engineering: Development of modeling techniques applied to the analysis of contemporary Civil Engineering problems including transportation, fluid flow, and two-dimensional continuum analysis.

ECI 6197  
Public Works Engineering: PR: C.I. Principles and practices, operation and maintenance, equipment, utilities, planning and design, etc.

ECI 6198  
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  
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  
Foundation Analysis and Design I: Analysis and design of fundamental foundation units including spread footings, combined footings, mats, and retaining walls.

ECI 6608  
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  
Groundwater Hydrology: PR: C.I. Theories of groundwater movement, geological factors, analysis and design technique, etc. Emphasis on practical considerations.

ECM 4114  
Engineering Mathematical Analysis: PR: MAC 3314 and MAP 3302. The application of mathematical methods to engineering problems including vector and tensor fields, state space techniques, orthogonal curvilinear coordinates and orthogonal functions.

ECM 4304 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 Mini-Computers in Engineering Systems: PR: COP 3215 or equivalent. 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 5135 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 5505C 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 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 6416 Discrete Systems Simulation: PR: STA 3032, COP 3215. Methods for performing discrete systems simulation, including network modeling, will be treated.

ECM 6426 Continuous System Simulation: PR: EGN 3703 or equivalent. Use of state-space techniques, numerical integration, and CSSL programs. Laboratory assignments.

ECM 6436 Automata Theory: PR: EEL 4342 or equivalent. Structural theory and performance characteristics of the finite-state machines.

ECM 6706 Engineering Data Reduction: Digital analysis of multidimensional data. Applications of multidimensional orthogonal transforms.

ECM 6805C 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 2023 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 Intermediate Price Theory: PR: ECO 2023 and 2013. Theoretical analysis of the determination of product and factor prices under different market structures.


ECO 4225 Money: 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 4504 Economics of the Public Sector: PR: ECO 2013. The role & activities of the public sector in the American economy; budget; expenditures; taxation; debt; and issues of economic stabilization.

ECO 5055 Economic Concepts: PR: Acceptance into the graduate program. Introduction to micro and macro economic analysis.


ECO 5413 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 6111 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 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 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 Seminar in Money, Banking and Monetary Policy: 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 6305 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)
Seminar in 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 3203  BA 4 (4, 0) F, S
Contemporary Labor Economics: PR: ECO 2013 and ECO 2023. Study of the fundamental forces at work in the labor market, including recent manpower policies, trade unionism and collective bargaining.

ECP 3424  BA 4 (4, 0)

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 4 (4, 0)

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 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 4 (4, 0)

ECS 6006 Seminar in Comparative Economic Systems: PR: Graduate standing. An examination of factors that influence economic systems, the nature and operation of systems; patterns of resource allocation and income distribution in differing economic environments.

ECS 6015 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 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 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 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 6502 Organization and Administration of Instructional Programs: PR: Certificate or C.I. Purpose and functions of school learning centers, curricula, and establishment of educational priorities, review and analysis of various grouping patterns for individualizing instruction.

EDE 3201 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 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 3942 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 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 4943 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 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.
EDF 6205
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 3255
Classroom Management and Learning: PR: One psychology course or C.I. Analysis of techniques and skills for effective classroom management and discipline.

EDF 3603
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
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

EDF 6136
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
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

EDF 6401

EDF 6432
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 nonstandardized tests in the classroom.

EDF 6481
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
History of Education: Evolution of education practices from the Greeks to the moderns, including both Eastern and Western cultural variables.

EDF 6557
Philosophical Foundations of Classroom Learning: PR: Certificate or C.I. A systematic aproach to the philosophical bases of learning and the effect such philosophies have on school programs and curriculum.

EDF 6608
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
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
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
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
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 6940
Internship: PR: Approval of Professional Laboratory. Internship in an appropriate educational setting under the direction of a qualified supervisor.

EDP 3004

EDS 5356
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
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
Education 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

EEC 5205
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 curriculum. Concurrent laboratory experiences.

EEC 5206
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
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
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
Behavior Disorders in Schools: PR: Rank III Certificate or C.I. Assessment/analysis of behavior disorders, cause and effects, identification, and theories.

EED 6215
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
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

EEL 3307C
Electronic Engineering: PR: EGN 3375 and MAP 3302. Electronic devices and circuits design including small signal amplifiers, and switching circuits.
EEL 3341C 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 Electromagnetic Fields: PR: EGN 3373L and MAP 3302. Introduction to electric and magnetic fields and electromagnetic waves.


EEL 4342C Introduction to Digital Circuits and Systems: PR: EGN 3383 or C.I. Switching theory and devices. Combinational and sequential logic. Logic design using standard components such as ROM, arithmetic units, multiplexers, registers and counters.

EEL 4343C Sequential Circuits and Systems: PR: EEL 4342C or C.I. Synchronous and asynchronous circuits, compatible states, hazards, races, and state equivalence and minimization techniques. Applications to design of synchronous sequential systems.

EEL 4340C Microwaves: PR: EEL 3470. Microwave devices and systems and measurement techniques.

EEL 4512C Communication Systems: PR: STA 3032, EEL 3552 and EEL 3307C. Information transmission, modulation, and noise; design and comparison of communication systems in the presence of noise.


EEL 4702C Digital Systems Design: PR: EEL 4701C or C.I. Continuation of EEL 4701C. Microprocessor and LSI based approaches to the design of digital systems. Current topics in the design of control communications, and display systems.


EEL 5173 Signal and System Analysis: PR: EEL 3122. Difference equations, transform techniques, state variables applied to continuous and discrete systems.

EEL 5260 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 Introduction to Digital Systems: PR: EEL 4342 or equivalent. Analysis and synthesis of combinational, synchronous and asynchronous sequential logic circuits. Introduction to controller design using a digital design language.

EEL 5441 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 Digital Signal Processing I: 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  

EEL 5630  
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  
Synthesis of Electric Filters: Analysis and design of electric filters.

EEL 6349  

EEL 6371  
Amplifier Design: Small-signal device models; analysis and synthesis of electronic amplifier circuits in frequency and time domains.

EEL 6372  
Operational Amplifiers: The design of the differential amplifier stage, multi-staging, linear circuit applications, uses in non-linear circuits, active filters.

EEL 6488  

EEL 6502  
Digital Processing of Signals II: PR: EEL 5505 or C.I. Continuation of digital filter synthesis, multidimensional processing, processor hardware implementations, applications of digital filtering and FFT processors.

EEL 6504  
Communication Systems Design: PR: EEL 6530 or C.I. Signal detection, linear estimation (including Weiner-Kalman Filtering); and application topics such as Spread Spectrum and diversity techniques, computer communication, data communication via fading channels.

EEL 6530  
Communication Theory: PR: EEL 5542 or C.I. Communication in the presence of noise, modulation and demodulation; use of phase lock loop; digital data transmission, optimum receivers, introduction to information theory.

EEL 6560  
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  

EEL 6612  
Modern Control Theory: State space method of analysis and design for discrete and continuous control, phase plane, Lyapunov stability.

EEL 6621  

EEL 6671  

EEL 6717  
Digital Computer Systems: PR: EEL 6349 or C.I. Analysis of special purpose computer elements, computers, and computer systems. Micro-processor based systems, systems with one or more control or I/O processors, networks of computers.

EES 3031  
Environmental Instrumentation: PR: EGN 1380, 1381. Applications of the basic laboratory techniques and instrumentation required for environmental engineering practice.
EES 3104: 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: Chemical Process Control; PR: EGN 3703. Engineering design, measurements, and analysis of chemical systems in environmental engineering to control treatment processes such as softening, coagulation, disinfection, scrubbing, neutralization and others.

EES 4204: Biological Process Control; PR: EGN 3703. Engineering designs, measurements and analysis of biological systems in environmental engineering for water management, bio-energy products, wastewater treatment and others.

EES 4404: 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.

EES 5210: Potable Water Treatment; PR: EES 4202 and 4204. Engineering application of potable water chemistry involving coagulation, softening, filtration, corrosion, disinfection quality, and drinking water.

EEX 6863: 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.

EGC 5033: Guiding Human Relationships in the Classroom; PR: Senior standing or C.I. A course to teach human relationship skills which will enhance intra-and inter-personal relating skills in classrooms.


EGC 6235: 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: Vocational and Career Development Procedures; PR: Certificate. Forces which affect career choice and shape personal development; vocational counseling, career education, and parent-student-school inter-relationships.
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.

Techniques of Counseling: PR: EGC-5005, EGC-6435, or C.I. The nature of the counseling relationships to theoretical concepts.

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.

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.

Man Made World: Introduction to engineering and its role in the understanding of the man made world.


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.

Engineering Concepts: PR: 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.

Engineering Analysis — Statics: PR: EGN 2382 and MAC 3312. Fundamental concepts of mechanics including resultant of force systems, free-body diagrams, equilibrium of rigid bodies, and analyses of structures.

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 3373C

EGN 3375C
Electrical Devices and Systems: PR: EGN 3373C. Electromagnetic energy conversion devices, feedback amplifiers, and instrumentation.

EGN 3383
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

EGN 3703

EGN 3704
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 4032
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
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 4624
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

EGN 4714
Linear Control Systems: PR: MAP 3302 and EGN 3375C. 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
Science in History: Examination of the reciprocal relations of science and society from ancient to recent times.

EGN 4814
Engineering & Technology in History: Important developments in engineering and technology and their effect on society and our socio-economic processes.

EGN 4815
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
Topics in Urban Development: Production, distribution, and consumption of various commodities. Engineering relationships to distribution, internal structure, function of urban developments. Interrelationships of engineering, social, economic, and cultural phenomena.

EGN 4824
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  
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  
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  
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  
Man and Machine: The influence and interrelationship of invention and technical progress on the evolution of social forms and institutions.

EGN 5034  
Engineering and Public Works: PR: C.I. The purposes, function, and role of engineering within public works.

EGN 5035  
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  

EIN 3106  
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 3315C  

EIN 4116  
Industrial Information Systems: PR: COP 3215, EIN 4332. Study of computerized information systems applied in industrial environment. Emphasis on development of automated information systems for control of men, materials and equipment.

EIN 4214  
Safety Engineering and Administration: Analysis of accidents in the industrial operating environment. Application of fault trees, OHSA requirements. Consideration of accident costs and organizational aspects of accident prevention.

EIN 4243  
Human Engineering: PR: Senior standing. Man-machine systems; design and conduct of human engineering studies.

EIN 4251C  
Automation: PR: Senior Standing in Engineering. Introduction to automation through mechanization, numerical control, and computer assisted manufacturing.

EIN 4264  

EIN 4332  
Production and Inventory 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 4364C  
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.

253
EIN 4383  EN 3 (2, 2) Su

EIN 4391C  EN 3 (2, 2) W
Manufacturing Engineering: PR: EGN 3363, EGN 3331. Introduction to manufacturing engineering materials and processes emphasis on broad spectrum of processes including casting, forming, joining, machining of metals, and non-metals and the design to manufacture relationship.

EIN 5117  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 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 6248  EN 4 (4, 0) W
Human Engineering II. A continuation of EIN 4243 with emphasis on special projects and physiological factors appropriate to the industrial setting.

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 6305  EN 3 (3, 0) S
Engineering Administration II: PR: EGN 4624. A continuation of EGN 4624 with emphasis on the manufacturing and industrial enterprise.

EIN 6316  EN 4 (4, 0) W

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 6351  EN 3 (3, 0) W
Mathematical Programming Models for Engineering Economic Analysis: PR: EIN 6357; ESI 6316. Extension of EIN 8357 to explore the development and application of mathematical programming in the related area of capital and resource allocation.

EIN 6357  EN 3 (3, 0) F
Advanced Engineering Economic Analysis: PR: EGN 3613; STA 3032, or Equivalent. Topics include measuring economic worth, economic optimization under constraints. Analysis of economic risk and uncertainty, foundations of utility functions.

EIN 6361  EN 4 (4, 0) S

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.
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 (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

ELD 6235  ED 3 (3, 0) S
Individualized and Prescriptive Instruction for the Learning Disabled Child: PR: Rank III Certificate or C.I. Study or program innovations and prescriptive programming for pupils with learning disabilities.

EMA 4413  EN 3 (3, 0) W

EMA 5826  EN 3 (3, 0)
Mechanical Metallurgy: PR: EML 3234 or C.I. Recent advances in the microscopic understanding of the mechanisms in strengthening, fracture, fatigue, and creep of metals and alloys.

EMA 6126  EN 3 (3, 0)
Physical Metallurgy: PR: EML 3234 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.

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.

EME 6613  ED 4 (4, 0) F
Instructional Systems Design: Systematic design of instruction including task analysis, learner analysis, needs assessment, content analysis, specification of objectives, media selection, evaluation and revision. Analysis of ID models.

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 3234  EN 3 (3, 0)

EML 3236  EN 3 (3, 0)

EML 3238  EN 3 (3, 0)

EML 3262  EN 3 (2, 3)
Kinematics of Mechanisms: PR: EGN 3321. Graphical, mathematical, and computer-aided kinematics, analysis, and synthesis of basic mechanisms.

EML 3303  EN 3 (3, 0)

EML 3502  EN 4 (3, 3)
EML 4142 EN 4 (4, 0)

EML 4222 EN 4 (4, 0)

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 4411 EN 4 (4, 0)
Mechanical Power Systems: PR: EML 3106. Analysis and design of large power generating systems and components with emphasis on steam plants utilizing both chemical and nuclear fuels.

EML 4412L EN 2 (1, 3)
Mechanical Engineering Laboratory: PR: EML 3303; CR: EML 4142. Experimental studies of phenomena and performance of fluid flow, heat transfer, thermodynamic and mechanical power systems.

EML 4505 EN 3 (2, 3)
Engineering Design: PR: EML 3106, 3502. Application of the design process in the solution of a state of the art problem. Fluid, thermal or mechanical problems are considered.

EML 4535 EN 3 (2, 3)
Computer-Aided Design: PR: EML 3106, 3502. Introduction to computational methods in mechanical and thermal systems design.

EML 4709 EN 3 (3, 0)

EML 5105 EN 3 (3, 0) W

EML 5228 EN 4 (4, 0)
Acoustics: PR: MAP 3302, PHY 3421. Elements of vibration theory and wave motion; radiation, reflection, absorption, and transmission of acoustic waves; architectural acoustics; control and abatement of environmental noise pollution; transducers.

EML 5271 EN 3 (3, 0)

EML 5416 EN 4 (4, 0)

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 and magnethydrodynamics.

EML 5453 EN 4 (4, 0)
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 5609 EN 4 (4, 0)
Environmental Thermodynamics: PR: EML 3106. Thermodynamics of the environment emphasizing analysis and design of thermal systems. Building heating and cooling load calculations and energy conservation technologies analyzed.

EML 6104 EN 3 (3, 0)

EML 6124 EN 3 (3, 0)

EML 6154 EN 4 (4, 0) Conduction Heat Transfer: PR: EML 4142. Classical and numerical techniques applied to the solution of steady and transient conduction problems. Applications to the design of thermal systems.

EML 6155 EN 4 (4, 0) Convection Heat Transfer: PR: EML 4142. Convection heat, mass and momentum transfer in laminar and turbulent flows. Applications to the design of thermal systems.

EML 6157 EN 4 (4, 0) Radiation Heat Transfer: PR: EML 4142. Radiation properties and analysis of radiation heat transfer problems. Applications to the design of thermal systems.


EML 6306 EN 3 (3, 0) Advanced Engineering Instrumentation: PR: EML 3303 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 of 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 6506 EN 3 (2, 3) Experimental Mechanics: PR: EML 3303. 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) 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 6532 EN 3 (3, 0) 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 6710 EN 4 (4, 0) Advanced Gas Dynamics: PR: EML 4709 or C.I. Analysis of steady and unsteady subsonic, supersonic and hypersonic flows. Aerodynamic applications to the design of nozzles, diffusers, and high speed wind tunnels.

EML 6712 EN 4 (4, 0) Mechanics of Viscous Flow: PR: EGN 3353, 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 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.
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.

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.

Homemaking and Social Learning 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.


Composition I: Expository writing with emphasis on effective communication. Writing topics to be based on selected readings.

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.

Writing and Research: PR: ENC 1103. A writing course designed to focus on effective written argument and thorough preparation of library research papers.

Professional Reporting Writing I: Emphasis on clear expository writing of memoranda, reports and articles in the student's particular field.

Professional Report Writing II: Instruction and practice in scientific writing including preparation of scientific reports in the student's particular field.

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.

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.

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.

Grammar Review: A systematic review of basic English grammar to improve clarity and accuracy of writing.

Continental European Fiction Since 1900: A selection of significant works of fiction written in various languages during the present century, read in translation.

Structure of Verse: Intensive study of the structural characteristics of English, poetry, metrical systems, rhyme, scansion, and poetic rhetoric devices.
ENG 3716 Exploring Poetry: 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.

ENG 3810 Practical Criticism: Student evaluation of selected fiction, poetry, and drama through practical exercises in literary criticism.

ENG 4226 British and American Fiction Since 1900

ENG 4324 The British Novel in the 19th Century

ENG 4344 The American Novel in the 19th Century

ENG 4452 British and American Drama Since 1900

ENG 4512 History of the English Language: Study of the English language and its development from Anglo-Saxon to Modern.

ENG 4550 Modern English Grammar: Emphasis upon the analysis and comparison of traditional, structural, and transformational grammar.


ENG 4743 British and American Poetry Since 1900

ENG 5215 Studies in Contemporary Fiction: Fiction of the last 20 years in the United States and Britain.

ENG 5431 Restoration and 18th Century English Drama

ENG 6108 Literary Genres: Provenance, structure and critical problems in a specific genre such as tragedy, the epic, the novel, or the lyric.

ENG 6155 Media and Popular Literature: Study of the literary content of contemporary media; popular fictions, such as science fiction, detective fiction, and historical fiction. Application to classroom teaching.

ENL 3011 Survey of English Literature to 1625

ENL 3018 Survey of English Literature, 1626-1798

ENL 3025 Survey of English Literature, 1798-1914

ENL 3028 Survey of British Literature Since 1914

ENL 4110 Chaucer: The Canterbury Tales, Troilus and Criseyde, and other works.

ENL 4120 Milton: Paradise Lost, Paradise Regained, Samson Agonistes, shorter poems and selected prose.

ENL 4131 Readings in Shakespeare: Reading and analysis of a selected group of comedies, histories, and tragedies for English Education majors.

ENL 4132 Shakespeare Studies: Reading, analysis, and discussion of Shakespeare's plays. May be repeated for credit.
ENL 4353  HFA 3 (3, 0) odd years
18th Century Studies: Reading, analysis, and discussion of literature in English: 1680-1800. May be repeated for credit.

ENL 4521  HFA 3 (3, 0) even years
19th Century Studies: Reading, analysis, and discussion of literature in English: 1800-1914. May be repeated for credit.

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)

ENU 4005  EN 4 (4, 0)

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, heat physics, radiation shielding and applications of nuclear energy.

ENV 4119  EN 3 (3, 0)

ENV 4355  EN 3 (3, 0) W
Solid and Hazardous Wastes: PR: EGN 3704 or C.I. Engineering design, planning, and analysis problems associated with storage, collection, processing, and disposal of solid and hazardous wastes.

ENV 4404  EN 4 (4, 0) F

ENV 4434  EN 3 (3, 0) S
Environmental Engineering Systems Design: PR: ENV 4404 and 4505 or C.I. Planning capacity and design of water distribution systems, sanitary sewerage, storm drainage systems, water and wastewater treatment plants, solid waste and atmospheric controls.

ENV 4504  EN 4 (4, 0) W

ENV 4651  EN 3 (3, 0)
Urban Systems Engineering: PR: C.I. Theories and history of city development with administrative, planning, management and maintenance of municipal services.

ENV 5615  EN 3 (3, 0) Su
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) F
Physical/Chemical Treatment Systems in Environmental Engineering: PR: ENV 4404. Theory and design of physical and chemical operations and processes in environmental engineering using latest technologies.

ENV 6016  EN 4 (4, 0) W
Biological Treatment Systems in Environmental Engineering: PR: ENV 4504. Theory and design of biological operations and processes in environmental engineering using the latest technologies.
ENV 6017L
Unit Operations and Processes Laboratory: PR: EES 5206 or C.I. Laboratory exercises in physical, chemical, and biological processes applicable to design.

ENV 6106
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
Solid Wastes Management: Study of the extent and characteristics of the solid waste problem, collection and disposal systems, environmental modeling and selected designs.

ENV 6436
Water and Wastewater Systems Design: PR: ENV 4404 and 4504 or C.I. Project course on design of water and wastewater systems.

ENV 6518
Industrial Waste Treatment: PR: ENV 4404 and 4504 or C.I. Theories and methods of management, treatment, and case studies of major industrial waste problems will be studied.

ENV 4004
General Entomology: PR: ZOO 1010. Introduction to insects; their identification, biology and ecology.

ESE 3321
Teaching Techniques: PR: EDF 3603, CR: ESE 3940. A series of modules on the use and evaluation of selected technical teaching skills.

ESE 3322

ESE 3940

ESE 4943
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

ESE 5335
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
Patterns of Curriculum and Instruction: PR: Rank III Certificate or C.I. An analysis of exemplary secondary school programs and instructional procedures.

ESE 6218
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

ESE 6935

ESI 4144
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 4234
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 4524 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 6316 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 6416 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 Non-linear Programming: PR: ESI 6316. Study of non-linear programming, separate programming, and geometric programming.


ESI 6525 Systems Dynamics: PR: COP 3215 or equivalent. Study of Industrial Dynamics and Use of Computerized Dynamo Models. Urban Dynamics Models will also be addressed.

ESL 1141 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.


ETE 3208 Electronics in the Health Professions: To provide students in the health professions with basic knowledge of electronic equipment associated with hospitals and laboratory use.

ETE 3632 Digital Circuits: PR: 10 hours solid state electronics. Design of digital circuits using integrated circuits. Laboratory.

ETE 3863C Microprocessor Electronics: PR: ETE 4111 or Equiv. Introduction to the Electronics of Basic Microprocessing.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETE 4111</td>
<td>Electricity and Electronics</td>
<td>Basic principles of electric circuits and electronic amplifiers. Introduction to integrated circuits.</td>
</tr>
<tr>
<td>ETE 4161L</td>
<td>Senior Systems Laboratory</td>
<td>PR: Senior Standing and C.I. Experiments covering topics in electronics module. Use of latest integrated circuit function blocks.</td>
</tr>
<tr>
<td>ETE 4210C</td>
<td>Servomechanisms</td>
<td>PR: ETE 4111. Analysis and design of servo devices and systems.</td>
</tr>
<tr>
<td>ETE 4226</td>
<td>Feedback Control</td>
<td>PR: EE 3122 and MAC 3254. Feedback control system analysis and design techniques, control system components, and applications to practical control systems.</td>
</tr>
<tr>
<td>ETE 4422</td>
<td>Communications Systems</td>
<td>The study of modulation/demodulation systems.</td>
</tr>
<tr>
<td>ETE 4423C</td>
<td>Communication Systems II</td>
<td>PR: ETE 4422 or equivalent. Analysis and design of advanced electronic communication systems.</td>
</tr>
<tr>
<td>ETE 4432</td>
<td>Antennas and Propagation</td>
<td>PR: ETE 3122. Basic theory and technology used in high frequency transmission lines and waveguides, propagation and radiation, antennas.</td>
</tr>
<tr>
<td>ETE 4541</td>
<td>Power Transmission</td>
<td>PR: C.I. Analysis of transmission systems and components. Control, stability, fault and protection in power systems.</td>
</tr>
<tr>
<td>ETE 4650</td>
<td>Microcomputer Electronics</td>
<td>PR: ETE 3632 and a programming course. Hardware analysis and design of solid state electronic Microcomputers. Applications.</td>
</tr>
<tr>
<td>ETE 4735C</td>
<td>Electro-Mechanical Design</td>
<td>PR: ETE 4111 and ETG 4510. Introduction to mechanical and electromechanical devices and their applications in industry.</td>
</tr>
<tr>
<td>ETG 3502</td>
<td>Applied Statics</td>
<td>PR: MAC 1132 or Equivalent. Coplanar parallel, concurrent and noncurrent force systems. Noncoplanar concurrent and noncurrent force systems. Centroids, centers of gravity and moments of inertia of areas.</td>
</tr>
<tr>
<td>ETG 4530</td>
<td>Strength of Materials</td>
<td>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.</td>
</tr>
<tr>
<td>ETI 3421C</td>
<td>Materials and Processes</td>
<td>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.</td>
</tr>
<tr>
<td>ETI 3440</td>
<td>Product Design</td>
<td>Principles of layout and dimensions for production. Considerations of design factors, standards, specifications and codes with emphasis on productibility.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Department</td>
<td>Credits</td>
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<tr>
<td>ETI 3651</td>
<td>Computer Methods in Industry</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETI 3654</td>
<td>Cost Estimation and Analysis</td>
<td>EN 3 (2, 2)</td>
</tr>
<tr>
<td>ETI 3671</td>
<td>Technical Economic Analysis</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETI 3690</td>
<td>Technical Sales</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETI 4452</td>
<td>Plant Maintenance Operation</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETI 4640</td>
<td>Process Planning and Scheduling</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETI 4661</td>
<td>Plant Layout and Material Handling</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETI 4700</td>
<td>Occupational Safety</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETM 3310</td>
<td>Applied Fluid Mechanics</td>
<td>EN 4 (4, 0)</td>
</tr>
<tr>
<td>ETM 3314</td>
<td>Hydraulics and Hydrology</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETM 4201</td>
<td>Applied Thermodynamics</td>
<td>EN 4 (4, 0)</td>
</tr>
<tr>
<td>ETM 4403C</td>
<td>Applied Kinematics</td>
<td>EN 4 (3, 2)</td>
</tr>
<tr>
<td>ETM 4512C</td>
<td>Applied Design of Machine Elements</td>
<td>EN 4 (3, 2)</td>
</tr>
<tr>
<td>ETM 4590</td>
<td>Design Integration</td>
<td>EN 3 (3, 0)</td>
</tr>
<tr>
<td>ETM 4750</td>
<td>Applied Air Conditioning</td>
<td>EN 4 (4, 0)</td>
</tr>
<tr>
<td>EUH 2000</td>
<td>Ancient and medieval Civilization</td>
<td>HFA 4 (4, 0)</td>
</tr>
</tbody>
</table>
EUH 2001
European Civilization from the Renaissance to the French Revolution: Europe from its fuedalmanorial state through the Napoleonic era.

EUH 2002
Modern European Civilization: The Romantic era, the influence and liberalism, nationalism, and modern industrialism upon political, social, economic, and intellectual life.

EUH 2545
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
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
Medieval Society and Civilization.

EUH 3142
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
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
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
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
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
The Classical World: Greece: History and culture of Greece from the Minoan-Mycenaen to the Hellenistic age, with emphasis on contributions in art, literature and philosophy. (Same as HUM 3431).

EUH 3411
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
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
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 4456
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 4464
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
English History: 1485-1815

EUH 4502
British History: 1815-Present
European History

EUH 4503
English History to 1485

EUH 4511
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
British Empire and Commonwealth: Development of the British Empire and Commonwealth since the American Revolution.

EUH 4571
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
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
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
Soviet Foreign Policy: 1917-Present.

EUH 4620
European Great Powers: 1815-1914: 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
War and International Politics in Europe, 1914 to Present: The relationship of the European Great Power from the outbreak of WW I to the present.

EUH 5237
Colloquium Europe from 1815-1848: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics in European history from 1815-1848.

EUH 5238
Colloquium Europe from 1848-1914: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics in European history from 1848-1914.

EUH 5247
Colloquium in Europe, 1919-1939: PR: Senior Standing or C.I. Selected topics in the historical literature of Europe from the Paris Peace Conference to the outbreak of the Second World War.

EUH 5285
Colloquium in Europe Since WW II: PR: Senior Standing or C.I. Selected topics in the historical literature of Europe from the end of WW II and the beginning of the Cold War to the present.

EUH 5517
Colloquium in Tudor-Stuart England: PR: Senior Standing or C.I. Intensive reading and class discussion on selected topics during the Tudor-Stuart era.

EUH 5527
Colloquium in 18th Century England: PR: Senior Standing or C.I. An examination of the literature of selected topics in Hanoverian Britain.

EUH 5579
Colloquium in Soviet Russia: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics if Russian history, 1911-present.

EUH 5595
Colloquium in Czarist Russia: PR: Senior or graduate status. Selected topics on the literature of Russia under the Czars prior to 1917.

EUH 5608
Colloquium European Intellectual History: PR: Senior Standing or C.I. Reading and class discussion of the literature on selected topics of European Intellectual history.
EUH 6248
Seminar in Fascist Dictators: PR: C.I. A seminar comparing the causes, characteristics and failures of fascist movements and dictators in Germany, Italy, Austria, and other European countries from 1918 to 1945.

EUH 6288
Seminar in Europe After World War II: PR: C.I. Seminar on topics in the evolution of Europe from the end of WW II and the beginning of the Cold War to the present.

EVS 3220
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
Water Supply Systems: Techniques applicable to technical projects dealing with resources, hydrology, treatment, transmission and distribution.

EVS 4101
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
Treatment Plant Analyses and Control: Basic techniques applicable to lab analyses, control measures, and overall operation of water and wastewater treatment plants.

EVS 4362
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
Solid Waste Management: Techniques applicable to solid waste composition, collection and disposal. Solid wastes programs, laws, rules and regulations.

EVT 3062
Professional Role of the Vocational Teacher: PR: EVT 3371 or C.I.

EVT 3311
Preparation For Clinical Teaching in Vocational Education: PR: EVT 3063 or C.I. Teacher competencies in planning for clinical instruction, preparing self, students, and agency for clinical instructional activities.

EVT 3365
Methods of Teaching in Vocational Subjects: PR: EVT 3371 or C.I. Study, practice and achievement of basic teaching techniques specifically applicable to vocational education.

EVT 3368
Instructional Materials for Vocational Education: PR: 3371 or C.I. Study, practice, and achievement of skills in the use of instructional materials, equipment, and related vocational teaching techniques.

EVT 3367
Evaluation of Vocational Instruction: PR: EVT 3371 or C.I. Study, practice and achievement of competency in assessing student cognitive, affective, and psychomotor performance in vocational education.

EVT 3371
Essential Teaching Skills in Vocational Education: Study, practice, and achievement of selected essential teaching skills for beginning vocational instructors.

EVT 3562
Special Needs of Vocational Students: PR: EVT 3371 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
Management of the Vocational Classroom and Laboratory: PR: EVT 3371 C.I. Organization and management of school facilities for instructional purposes and skill in providing for student health and safety.

EVT 4066
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.

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.

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.

Applied Clinical Teaching Techniques in Vocational Education: PR: Rank III Certificate or C.I. Study and practice of clinical teaching methods, development of student performance assessment instruments, planning clinical learning experiences, and record keeping.

Clinical Coordination for the Health Occupations Teacher: PR: Rank III Certificate or C.I. Development or clinical guidelines, resources, student schedules, and risk-management programs. Includes negotiating clinical contractual agreements and planning field supervision.

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.

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.

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.

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.

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.

Philosophical Foundations of Vocational Education: An in-depth study of principles and philosophy for vocational education.

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.

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 3513C

EXP 5445
Psychology of Learning and Motivation: PR: DEP 5057 or C.I. Examination of theories and research concerning the acquisition and retention of behavior as well as motivational factors which influence learning and behavior.

FIL 3200
Film Production: Major topics are pre-production planning, shooting, and editing of film.

FIL 3300
Film Documentary: Major topics: The uses and analysis of the non-fiction film.

FIL 3400
History of the Motion Picture: Development of the film industry, its social and economic impact. Same as THE 3251.

FIL 4201
Film Production II: PR: FIL 3200 or C.I. Major topics: Advanced pre-and-post production techniques including sound mixing and dubbing.

FIN 3100

FIN 3233

FIN 3303
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
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
Finance: PR: Junior standing, ACC 2324, and STA 3023 or equivalent. This course, using the balance sheet as a reference point, provides an overview of various aspects of financial management confronting the contemporary business firm.

FIN 3453
Financial Models: PR: FIN 3403, ECO 3411. Mathematical models applied specifically to financial problems, including those models suitable for representation and manipulation of computers.

FINE 3502
Investments: PR: Junior standing. A survey of the investments area including an introduction to security markets, investment vehicles, the investment environment, economic and security analysis, and portfolio management.

FIN 4414
Financial Management: PR: FIN 3403. Analysis of financial management problems and current issues supplemented by simulation games and cases.

FIN 4514
Security Analysis: PR: FIN 3403 and FIN 3502. An investigation into the techniques of stock selection utilizing fundamental and technical analysis. Course covers the basic areas of investment environment, industry analysis, and company analysis.

FIN 4524
Portfolio Management: PR: FIN 3403 and FIN 3502. From the viewpoint of the individual investor and with capital market theory as the centerpiece, the course examines the construction of efficient portfolios and management of risk.

FIN 5405
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 3 (3, 0)
Capital Management and Analysis: PR: Graduate standing and FIN 5405 or equivalent. Financial planning, valuation, sources of long-term capital, concepts 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

FRE 2201  HFA 4 (4, 1) W

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
French Phonetics and Diction: PR: FRE 3420 or equivalent. French phonology with emphasis on phonetic groupings.

FRW 3100
Survey of French Literature I: PR: FRE 2202 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance.

FRW 3101
Survey of French Literature II: PR: FRE 2202 or equivalent. Main literary current and works of the seventeenth and eighteenth centuries.

FRW 3102
Survey of French Literature III: PR: FRE 2202 or equivalent. Main literary currents and works of the nineteenth and twentieth centuries.

FRW 3370
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
Seventeenth Century French Theatre: PR: FRW 3101. Corneille, Racine, and Moliere. A study of the lives and principal works of the authors.

FRW 4440

FRW 4460

FRW 4462

FRW 4481

FRW 4820
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
Management: PR: Junior standing. The interdisciplinary application of the managerial functions of planning, organizing, staffing, directing, and controlling. For Non-Business Majors ONLY.

GEO 1200
Physical Geography: Basic physical elements of geography including climate, landforms, soils, natural vegetation, minerals and their integrated patterns of world distribution.

GEO 3370
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
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
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
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
Elementary German Language and Civilization: Designed to initiate the student to the major language skills: listening, speaking, reading, and writing.

GER 1101
Elementary German Language and Civilization: PR: GER 1100 or equivalent. Continuation of GER 1100.
Elementary German Language and Civilization: PR: GER 1101 or equivalent. Continuation of GER 1101.

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.

Intermediate German Language and Civilization: PR: GER 2200 or equivalent. Continuation of GER 2200.

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.

German Conversation: PR: GER 2202 or equivalent. Development of skills in conversation and comprehension through practice.

German Composition: PR: GER 2202 or equivalent. Development of skills in composition.

Survey of German Literature I: PR: GER 2202 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance and Baroque.

Survey of German Literature II: PR: GER 2202 or equivalent. Main literary currents and works of the 17th and 18th centuries.

Survey of German Literature III: PR: GER 2202 or equivalent. Main literary currents and works of the 19th and 20th centuries.

Short Story: PR: GER 2202 or equivalent. German short prose works of the 19th and 20th centuries.

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.

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.

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.

Rocks and Minerals: Their identification and significance as indicators of geologic processes. Meets advanced ESP requirements: designed for non-majors.

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.

History and Historians: PR: C.I. A study of European and/or American historiography. May be repeated once for credit.

Senior Thesis: Original research paper available to advanced history majors, topics to be selected in consultation with a directing professor.

Seminar in Historiography: PR: C.I. Selected topics in the study of history. May be repeated for credit on consent of instructor.
HIS 6946
Teaching Practicum: PR: C.I. Student observation, participation, direction, and leadership in a college survey course.

HIS 6971
Thesis: PR: C.I. May be repeated twice.

HLP 4460
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
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
Health Law: Principles of law as applied to the health field with special reference to health practices.

HSC 3328
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
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
Medical Terminology: A study of the language of medicine and allied health specialties, including work construction, definitions and application of terms.

HSC 4101
Organization and Management for Health Agencies: PR: Health Related Professions major or C.I. Analysis of health agency organizations and management procedures.

HSC 4302
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
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
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
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
Fundamentals of Medicine II: PR: HSC 4511 or C.I. A continuation of HSC 4511.

HUM 2200
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
The Classical World: Greece: History and culture of Greece from the Minoan-Mycenaean to the Hellenistic age, with emphasis on contribution in art, literature and philosophy. (Same as EUH 3400).

HUM 3432
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
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
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
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
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 3011
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

INP 3102
Applied Psychology: Applications of principles of psychology to personal adjustment, industry, and education.

INP 6215
Assessment Centers: PR: Graduate Admission and C.I. Survey of assessment center methodology and application.

INP 6317

INP 6605
Training and Performance Appraisal: PR: Graduate admission and C.I. Survey of theories, research and practice in the areas of industrial/organizational training and performance appraisal.

INP 6939
Current Topics and Applied Problems in Industrial/Organizational Psychology: PR: Graduate admission and C.I. Survey of current topics in Industrial/Organizational Psychology with emphasis on applied problems.

INP 6946
Industrial Psychology Practicum I and Professional Problems: PR: Graduate admission and C.I. Supervised placement in an organizational setting and survey of ethical issues pertaining to the industrial/organizational psychologist.

INR 4224
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
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
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
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
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
International Law I: An introduction to the nature, evolution and sources of international law and its role in interstate relations.

INR 4402
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
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
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
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
Elementary Italian Language and Civilization: PR: ITA 1100 or equivalent. Continuation of ITA 1100.

ITA 1102
Elementary Italian Language and Civilization: PR: ITA 1101 or equivalent. Continuation of ITA 1101.

ITA 2200
Intermediate Italian Language and Civilization: Designed to continue development of language skills at intermediate level, plus a review of grammar and study of syntax, idiomatic expression, extensive readings and further study of Italian culture.

ITA 2201
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
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
History of American Journalism: Development of newspapers and magazines, the press associations and the growth of the electronic media.

JOU 3100
Basic Reporting: Development of skills in gathering and writing for the mass media. Student must have minimum ability to type.

JOU 3101
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
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**
Advanced Editing: PR: A minimum grade of C in JOU 3200 or equivalent. Planning content and format of newspaper and other periodicals; layout; dummying, departmental editing, copy desk management.

**JOU 3309 SS**
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**
Photojournalism I: PR: VIC 3001 or RTV 3310. Learning the use of the still cameras, darkroom procedures, review at least one film a week during the course. Communication majors only.

**JOU 3601 SS**
Photojournalism II: PR: JOU 3600. Advanced photojournalism, including photo essays and special effects photography in black and white.

**JOU 4104 SS**
Public Affairs Reporting: PR: A minimum of C in JOU 3100 and JOU 3101. Study of community news sources, reporting courts, city and county government.

**JOU 4300 SS**
Feature Writing: PR: A minimum grade of C in JOU 3100. Writing of feature articles for newspapers and magazines.

**JOU 4302 SS**
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**
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**
Critical Writing: PR: A minimum grade of C in JOU 3100. Practice in writing reviews of plays, concerts and books.

**JOU 4310 SS**
Freelance Writing: PR: Evidence of satisfactory writing skills. A study of the techniques and procedures of freelance writing, including the preparation of several manuscripts.

**JOU 4602 SS**
Color Photography for the Mass Media: Taking pictures in color; developing and printing via the Cibachrome process; PR: JOU 3600.

**JOU 4802 SS**
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.

**LAE 3335 ED**
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**
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**
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**
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**
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)

LAE 6637 ED 3 (3, 0)

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

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 Languages 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

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-à-vis planning and environmental protection.

LEA 4211 SS 4 (4, 0)
Estates and Trusts: 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 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)

LEA 5937 SS 4 (1, 3)

LEA 5957 SS 4 (1, 3)

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 HLTH 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)

LIN 3710 HLTH 4 (4, 0) F
Foundations of Language: This Course is designed to explore contributions to language from disciplines of Biology, Neurology, Psychology & Sociology.

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 4712  HLTH 4 (4, 0) W
Normal Language Development: Students will study language development and develop skill in eliciting language samples, describing language use, and analyzing language samples through demonstrations and problem solving experience.

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  HLTH 4 (4, 2) S

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)

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 inservice techniques. Lab TBA.

LIS 4510  ED 4 (4, 0)

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 5262
Computer Applications in Instructional Technology: Emphasis on the applications of the computer for the media specialist and instructional technologist.

LIS 5312
Advanced Production Techniques: PR: LIS 4310 and 4428. Advanced skills in graphic, photographic, and audio production. Integration of media into instructional packages.

LIS 5453

LIS 6313
Multi-Media Message Design: Principles of communication, learning theory, and research in instructional technology applied to the design of mediated instructional messages.

LIS 6509

LIS 6945
Practicum in Educational Media: Supervised work experience in educational media. May be taken twice for credit. Application must be made during preceding quarter.

LIT 2020
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
Literature of Modern Man: Reading and discussion of types and forms of modern literature. Satisfies the requirements (II) of the cultural and historical foundation in the Environmental Studies Program.

LIT 3240
World Literature I: Poetry, prose, and drama selected from ancient Hebrew, Greek, and Oriental literature and from that of Renaissance Europe.

LIT 3257
World Literature II: Readings from Molier, Voltaire, Goethe, Pushkin, Balzac, Tolstoy, Ibsen, Mann, Kafka, Camus, and others.

LIT 3411

LIT 3443
Science Fiction: An Investigation of science fiction as a literary form, together with selected readings.

LIT 4324
Ethnic Literature in America: Contributions of linguistic and ethnic groups of non-English origin to the literature of the United States.

LIT 6235
World Literature: The study of the influence on British and American literature of selected foreign works read in translation.

LIT 6535
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
Movements in Literature: Study of a movement such as naturalism, romanticism, or classicism, or a pervasive idea such as the absurd.

MAA 4226
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
Introduction to Analysis II: PR: MAA 4226. Continuation of MAA 4226.
MAA 4228  
*Introduction to Analysis III*: PR: MAA 4227. Continuation of MAA 4227.  

MAA 5211  
*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 5212  
*Advanced Calculus II*: PR: MAA 5211. Continuation of MAA 5211. Two and three-dimensional theory of vector integral calculus with application; Infinite series.  

MAA 5405  
*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.  

MAC 1104  
*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  
*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  
*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  
*Analytic Geometry*: CR: MAC 1132 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  
*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  
*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  
*Applied Calculus II*: PR: MAC 3253. Continuation of MAC 3253.  

MAC 3311  
*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  
*Calculus II*: PR: MAC 3311. Continuation of MAC 3311.  

MAC 3313  
*Calculus III*: PR: MAC 3312. Continuation of MAC 3312.  

MAC 3314  
*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  

MAE 2811  
*Mathematics for Elementary School Teachers II*: PR: MAE 1810. Number systems. Functions. Selected topics from geometry, probability, statistics and number theory. Open only to majors in elementary education.
MAE 3310
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
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
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 3817
Mathematics Topics for Elementary School Teachers: PR: One college mathematics course. Algorithms for arithmetic operations. Number systems. Functions selected topics from geometry, probability, statistics and number theory. Open only to majors in elementary education.

MAE 4636C
Mathematics Laboratory Methods: PR: EDF 3255 and EDF 3603. Mathematics topics with special applications in classroom laboratory situations.

MAE 5125

MAE 5395
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
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

MAE 6318

MAE 6517
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
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
Practicum in Diagnosis and Remediation of Difficulties in Mathematics, K-12: PR: or CR: MAE 6517, MAE 6518.

MAE 6899
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
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
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 Human Behavior and Interpersonal Relations: PR: MAN 3010 or C.I. Human behavior and its effect upon the operation of formal organizations.

MAN 3301 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 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 4004 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 Human Relations in Management: PR: MAN 3010. The individual, interpersonal and group relations and intergroup and organizational problems in business.

MAN 4201 Organization Theory: PR: MAN 3010. Elements in organizations and the processes by which they develop and influence behavior are considered.

MAN 4310 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 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 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 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 4724 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 5051 Management of Organizations: PR: Acceptance into the graduate program. Introduction to management and organizational behavior including management fundamentals, organization theory, interpersonal relations and organizational communication.

MAN 5501 Introduction to Production/Operations Management: PR: Acceptance into the graduate program and ECO 5413 or equivalent. Introduction to the fundamental concepts, processes and institutions involved in the production of goods and services required by modern society.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAN 5830</td>
<td>Introduction to Management Information Systems</td>
<td>PR: Acceptance into the graduate program. Introductory study of techniques &amp; applications of computer in both problem solving &amp; data processing (with language) for business.</td>
<td>BA 2 (2, 0)</td>
</tr>
<tr>
<td>MAN 6055</td>
<td>Planning and Control Analysis</td>
<td>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.</td>
<td>BA 3 (3, 0)</td>
</tr>
<tr>
<td>MAN 6075</td>
<td>Evolution of Administrative Management</td>
<td>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.</td>
<td>BA 3 (3, 0)</td>
</tr>
<tr>
<td>MAN 6121</td>
<td>Group Decisions and Analysis</td>
<td>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.</td>
<td>BA 3 (3, 0)</td>
</tr>
<tr>
<td>MAN 6206</td>
<td>Analysis of Organizational Behavior</td>
<td>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.</td>
<td>BA 3 (3, 0)</td>
</tr>
<tr>
<td>MAN 6721</td>
<td>Business Policy and Responsibility</td>
<td>PR: Graduate standing and all foundation courses or equivalent. Functions and responsibilities of management, motivation of the businessman and factors governing business decisions.</td>
<td>BA 3 (3, 0) W, Su</td>
</tr>
<tr>
<td>MAN 6814</td>
<td>Operations Research Models for Business</td>
<td>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.</td>
<td>BA 3 (3, 0) F, S</td>
</tr>
<tr>
<td>MAN 6840</td>
<td>Research and Development Management</td>
<td>PR: 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.</td>
<td>BA 3 (3, 0)</td>
</tr>
<tr>
<td>MAN 6896</td>
<td>Systems Analysis for Business Problem Solving</td>
<td>PR: Graduate standing and MAN 5051 or equivalent. A conceptual framework of systems approach for analyzing business problems.</td>
<td>BA 3 (3, 0) F, S</td>
</tr>
<tr>
<td>MAP 3302</td>
<td>Differential Equations I</td>
<td>PR: MAC 3313 or C.I. Methods of solutions for first order equations; Linear equations; Laplace transforms; Series solutions; Selected applications.</td>
<td>NS 4 (4, 0) F, W, S, Su</td>
</tr>
<tr>
<td>MAP 3401</td>
<td>Problem Analysis</td>
<td>PR: MAC 1104 &amp; MAC 1114 or equivalent. Applications of computational techniques to selected problems in the practice of engineering technology. Problems relating to specific option areas.</td>
<td>EN 4 (4, 0)</td>
</tr>
<tr>
<td>MAP 4303</td>
<td>Differential Equations II</td>
<td>PR: MAP 3302 or C.I. Systems of linear equations; Numerical methods; Non-linear equations; Sturm-Liouville techniques; Selected applications.</td>
<td>NS 4 (4, 0)</td>
</tr>
<tr>
<td>MAP 4383</td>
<td>Applied Boundary Value Problems I</td>
<td>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.</td>
<td>NS 4 (4, 0)</td>
</tr>
<tr>
<td>MAP 4384</td>
<td>Applied Boundary Value Problems II</td>
<td>PR: MAP 4363 or C.I. Separation of variables; applications involving the wave equation, heat equation and equation of Laplace.</td>
<td>NS 4 (4, 0) S</td>
</tr>
<tr>
<td>MAP 4411</td>
<td>Laplace Transforms</td>
<td>PR: MAP 3302 or C.I. Laplace and Z transforms; solutions of ordinary and partial differential equations; application to circuit analysis and difference equations.</td>
<td>NS 4 (4, 0) S odd years</td>
</tr>
<tr>
<td>MAP 5405</td>
<td>Engineering Mathematical Analysis</td>
<td>PR: ECM 4114 or C.I. The application of mathematical methods to engineering problems including linear analysis and transformations and matrix manipulation.</td>
<td>EN 3 (3, 0)</td>
</tr>
</tbody>
</table>
### Special Functions
**MAP 5426**
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.

### Methods of Mathematical Analysis I
**MAP 6406**
Methods of Mathematical Analysis I: PR: MAA 5212 or C.I. Calculus of variations, Hamilton's principle and Fourier series.

### Methods of Mathematical Analysis II
**MAP 6407**

### Transform Methods
**MAP 6424**
Transform Methods: PR: MAA 5405. Laplace, Fourier, Hankel and other integral transforms, inversion theorems; the Z transform; applications to physical problems.

### Approximation Techniques
**MAP 6445**
Approximation Techniques: PR: MAA 4228 or MAA 5212. Normed linear spaces; Weierstrass approximation theorem; Tchebycheff approximation by polynomials; trigonometric approximation; orthogonal expansions and least squares approximations.

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### Marketing
**MAR 3023**
Marketing: PR: Junior standing. Study of functions, institutions and basic problems in marketing of goods and services in our economy.

**MAR 3303**
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**
Sales Management: PR: MAR 3023. Emphasis on sales techniques; sales objectives and policies; organization; administration of sales force.

**MAR 3503**
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 3613**
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 4123**
Product Management: PR: 3023. Components of product management including analysis, strategy formulation and implementation are examined.

**MAR 4153**
Retailing Management: PR: MAR 3023. Analysis of the field of retailing. Lecture and emphasis on planning for profit outside project through merchandise management, inventory control, etc.

**MAR 4203**
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**
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**
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**
Marketing Policies and Strategies: PR: Senior standing and Marketing courses completed or C.I. Marketing problems and policies explored with emphasis placed on the decision-making process.
MAR 4722  BA 4 (4, 0) F, W, S
Marketing Management: PR: MAR 3023 and any one additional MAR courses or C.I. Operational framework exploring the analysis, planning and control activities of marketing.

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 5941  BA 3 (3, 0) F, W, S, Su
Small Business Institute: PR: ACC 2304, 2324, ECO 2023, 2013, FIN 3403, MAN 3010, MAR 3023, or graduate status. Provides students opportunity to apply knowledge learned in classroom to real business situations.

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  BA 3 (3, 0) W, Su
Research Methods: PR: 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)

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 3205  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 6325  NS 4 (4, 0) A
Modern Applied Algebra: 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 2013C  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 3030C

MCB 3203C
Pathogenic Microbiology: PR: MCB 3030C or C.I. Microorganisms producing disease in man and other animals; means of transmission; protection against disease.

MCB 4114C
Determinative Microbiology: PR: MCB 3030C. Microbial classification, rules of nomenclature, bacterial code and identification of species.

MCB 4164C
Diagnostic Microbiology: PR: MCB 3030C. Techniques used in identifying bacteria which are pathogenic to man.

MCB 4404C
Microbial Physiology: PR: MCB 3030C and BCH 4054. Relationship between structure and function in microorganisms.

MCB 4603C
Microbial Ecology: PR: PCB 3043 and MCB 3030C. Roles of microbes in the environment.

MCB 4814C
Medical Mycology: PR: MCB 3030C or C.I. Etiology, mycology and clinical aspects of fungal induced human diseases.

MET 3002
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
Meteorology for Engineers: PR: MAC 3313. Studies of the atmospheric processes from physical thermodynamics and synoptic viewpoints.

MGF 1124
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 College of Business Administration, Engineering, or Natural Sciences.

MHF 2300
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
Boolean Algebra: PR: MAC 3313 or C.I. Axiomatic development of Boolean algebra; the algebras of sets, logic and circuits as Boolean algebras.

MHF 3201
History of Mathematics: PR: MAC 3311 or MAC 3233 or MAC 3253 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 in mathematics.

MIS 1031
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 1400 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 1601 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 2120 The Threat: Comparison of United States Army with selected foreign armies. To include current threat. Communication procedures and equipment will be introduced with emphasis on practical application.

MIS 2300 Small Unit Tactics: Small unit tactics with emphasis on patrolling.

MIS 2602 Advanced Map Reading: Includes military geography, land navigation and use of the compass and Military symbols.

MIS 3300 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 3410 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 3610 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.

MIS 4421 Military Law: Advanced military science study of military law, its roots, relation to and application in the military society of today.

MIS 4430 Advanced Military Science: Decision making processes used by the military and the private sector; staff organization, estimating process and staff studies with emphasis on the coordination planning and communication.

MIS 4503 Administration Personnel and Supply: Analysis of the Army Administrative personnel and management systems.

MLS 3220 Techniques in Clinical Microscopy: Analysis of human urine and other body specimens, chemically and microscopically; interpretation of abnormal results and their correlation to disease included.

MLS 3305 Hematology: PR: PCB 3703, CHM 2047 or C.I. Diagnostic procedures and morphologic interpretation; correlation of this data to disease.

MLS 3599C Immunohematology: PR: C.I. Clinical blood banking; antigen-antibody identification, interpretation, correlation of abnormal results to disease.

MLS 3549C Coagulation-Immunopathology Fundamentals: PR: C.I. Diagnostic procedures and theory to coagulation and immunopathology and the correlation of this data to disease.

MLS 4213C Body Fluids: PR: Admission to professional phase of the MLS program. Analysis of body fluids, chemically and microscopically.

MLS 4320C 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.
Clinical Pathogenic Microbiology: PR or CR: MCB 3203C and admission to the professional phase of the MLS program. Isolation & pathogenic bacteria & serological methods; interpretation of abnormal results, their correlation to disease.

Clinical Mycology: PR: Admission to the professional phase of the MLS program or C.I. Instruction and laboratory practice in the isolation and identification of fungi associated with mycotic infections of man.

Clinical Parasitology: PR: Admission to the professional phase of the MLS program or C.I. Instruction and laboratory practice in the examination and study of clinical material for the detection and identification of animal parasites.

Clinical Serology: PR: Admission to the professional phase of the MLS program or C.I. Clinical laboratory instruction in serologic procedures including syphilis, mononucleosis, febrile agglutinins, rheumatoid arthritis, hepatitis.


Advanced Clinical Chemistry I: PR or CR: BCH 3313 and admission to the professional phase of the MLS program. Theory and practice in clinical chemistry techniques; carbohydrates, protein, electrophoresis, enzymes.

Advanced Clinical Chemistry II: PR: MLS 4625C. Continuation of MLS 4625C. Autoanalyzer, flame photometry, blood gases, RIA.

Advanced Clinical Chemistry III: PR: MLS 4630C. Continuation of MLS 4630C; endocrine & liver function, osmolality, amniocentesis, chromatography, toxicology.

Clinical Practice I: PR: Admission to the professional phase of the MLS program or rotation in one or more of the following areas: Hematology, Chemistry, Microbiology, Blood Bank, Serology-Coagulation, Clinical Microscopy, Nuclear Medicine.

Clinical Practice II: PR: Admission to the professional phase of the MLS program or C.I. Continuation of MLS 4830C.

Clinical Practice III: PR: Admission to the professional phase of the MLS program or C.I. Continuation of MLS 4831C.

Clinical Practice IV: PR: Admission to the professional phase of the MLS program or C.I. Continuation of MLS 4832C.

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.

Writing for the Mass Media: PR: Minimum grades of C in JOU 3100. Students write for a certain segment of the mass media of their own choosing. May be repeated for credit.

Communication Law: Legal rights of and restrictions on the mass media, including Constitutional guarantees, libel, invasion of privacy, and contempt of court.


Contemporary Media Issues: Relationships between the mass media and society; examination of social and ethical responsibilities of the media.
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.

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.

Propaganda and Psychological Warfare: Propaganda and psychological warfare principles with a study of the activities engaged by nations.

Mass Media and Popular Culture: An impact of mass media upon American culture past to present.

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.

Communication Internship: PR: C.J. Internship in radio, television, film, journalism, public relations, advertising and speech involving practicum at selected communications organizations for one quarter.

Comparative International Communication Organizations: A study of the principal mass communication organizations of the world.

Communication and Society: The importance of communications in societal stress situations, with emphasis on current problems.

Persuasion in the Media: Study of persuasive campaign with focus upon ethics, methodology, and strategies toward accomplishing the communication end.

Effects of Advertising on Society: An in-depth study of advertising's effects on consumer behavior, societal mores and media economics.


Medical Record Administration I: An introduction to the profession.

Medical Record Administration II: PR: MRE 3000C or C.J. Problems oriented medical record; accreditation and certification; release of information, medical staff committees; record analysis.


Health Information Retrieval Systems: PR: MRE 3000 or C.J. The development of health statistics, registers and indices and their application for quality assurance, research and management.

Directed Clinical Experience I: PR: MRE 3000C. Interdepartmental experience in selected health care facilities. Quantitative and qualitative record analysis numbering and filing, etc. will be performed in medical record administration laboratory.

Directed Clinical Experience II: PR: MRE 3600. Application in a health record facility of the principles of numbering and filing; quantitative, qualitative record analysis; correspondence; microfilming; coding and indexing procedures.

Medical Record Department Management: Analysis and Problem Solving, Management functions in Medical Record Department.

Analysis of Medical Record Department Operations: PR: HSC 4162. Forms analysis and control; work distribution and simplification; other evaluation techniques.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRE 4400C</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>MRE 4410C</td>
<td>Medical Care Evaluation Procedures: PR: MRE 4312C. Development and use of criteria in medical care evaluation and quality assurance in the medical record department.</td>
<td></td>
</tr>
<tr>
<td>MRE 4831</td>
<td>Directed Clinical Experience IV: Supervised clinical experience and continuation of MRE 4830. Professional management of previous areas covered. Sixteen hours in skilled nursing facility.</td>
<td></td>
</tr>
<tr>
<td>MRE 4835</td>
<td>Management Affiliation: Four weeks at a selected health facility serving in an administrative capacity under the direction of a Registered Record Administrator.</td>
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</tr>
<tr>
<td>MTG 4212</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>MTG 4213</td>
<td>Modern Geometries II: PR: MTG 4212. Constructible numbers, constructions and impossibility proofs, geometry of inversion, basic projective geometry, duality, harmonic sets, conics, hyperbolic and elliptic geometries.</td>
<td></td>
</tr>
<tr>
<td>MTG 4302</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>MTG 4303</td>
<td>Topology II: PR: MTG 4302. Continuation of MTG 4302.</td>
<td></td>
</tr>
<tr>
<td>MUC 1101</td>
<td>Composition I: Private and/or class instruction. Creative work in small forms. Open to non-music majors. May be repeated for credit.</td>
<td></td>
</tr>
<tr>
<td>MUC 3203</td>
<td>Composition II: 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.</td>
<td></td>
</tr>
<tr>
<td>MUE 3401</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>MUE 4314</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>MUE 4330</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>MUE 4350</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>MUE 4480</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Title</td>
<td>Pre-Requisites</td>
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<tr>
<td>MUE 5611</td>
<td>Trends in Elementary School Music Education</td>
<td>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.</td>
</tr>
<tr>
<td>MUE 6080</td>
<td>Foundations of Contemporary Music Education</td>
<td>PR: Rank III Certificate or C.I. Examination of historical, philosophical and psychological foundations of Music Education.</td>
</tr>
<tr>
<td>MUE 6155</td>
<td>Teaching Performing Organizations</td>
<td>PR: Rank III Certificate or C.I. Techniques and skills for the planning, administrating, and directing of performing music organizations.</td>
</tr>
<tr>
<td>MUE 6946</td>
<td>Practicum in Music Education</td>
<td>PR: Rank III Certificate, MUE 6080, MUE 6349 and MUE 6155, MUE 6610, and MUE 6630, or C.I. Field experience in teaching music.</td>
</tr>
<tr>
<td>MUG 3101</td>
<td>Basic Conducting</td>
<td>HFA 2 (1, 1) F</td>
</tr>
<tr>
<td>MUG 3201</td>
<td>Choral Conducting</td>
<td>PR: C.I. Fundamental principles of choral conducting and rehearsal techniques. May be repeated for credit.</td>
</tr>
<tr>
<td>MUG 3301</td>
<td>Instrumental Conducting</td>
<td>PR: C.I. Fundamental principles of instrumental conducting and rehearsal techniques. May be repeated for credit.</td>
</tr>
<tr>
<td>MUG 4102</td>
<td>Advanced Conducting</td>
<td>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.</td>
</tr>
<tr>
<td>MUH 4211</td>
<td>History and Literature</td>
<td>PR: MUT 2113. Required of music majors. In depth study of the development of Western musical styles from antiquity to the present.</td>
</tr>
<tr>
<td>MUH 4212</td>
<td>History and Literature</td>
<td>PR: MUT 3116. Continuation of MUH 4211.</td>
</tr>
<tr>
<td>MUH 4213</td>
<td>History and Literature</td>
<td>PR: MTT 3117. Continuation of MUH 4212.</td>
</tr>
<tr>
<td>MUH 4218</td>
<td>Review of Music History</td>
<td>A review of music history from Ancient Greece to the present.</td>
</tr>
<tr>
<td>MUH 4340</td>
<td>Renaissance and Baroque Music</td>
<td>PR: Satisfactory music history placement exam. Study of selected music from Dunstable through Bach and Handel. Emphasis on stylistic development and performance practices.</td>
</tr>
<tr>
<td>MUH 4361</td>
<td>Era of the Sonata</td>
<td>PR: Satisfactory music history placement exam. Selected topics from the origins of Classicism through the nineteenth century. Emphasis on stylistic development and formal analysis.</td>
</tr>
<tr>
<td>MUH 4372</td>
<td>Music of the Twentieth Century</td>
<td>PR: Satisfactory music history placement exam. In-depth study of selected masterpieces of the twentieth century. Analysis of a variety of twentieth-century techniques.</td>
</tr>
<tr>
<td>MUL 3011</td>
<td>Enjoyment of Music</td>
<td>Only non-music majors. Designed to develop an understanding of musical principles and techniques for listening to music.</td>
</tr>
<tr>
<td>MUL 3401</td>
<td>Piano Literature</td>
<td>PR: C.I. Survey of stringed keyboard literature from the sixteenth century to the present with emphasis on technical, formal and performance problems.</td>
</tr>
<tr>
<td>MUL 3402</td>
<td>Piano Literature</td>
<td>PR: MUL 3401. Continuation of MUL 3401.</td>
</tr>
</tbody>
</table>
MUL 3403  

MUL 3622  
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  
Song Literature: PR: MUL 3622. Continuation of MUL 3622.

MUL 3625  
Song Literature: PR: MUL 3624. Continuation of MUL 3624.

MUL 3670  

MUN 3120  
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  
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  
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  
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  
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  
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  
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  
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  
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  
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  
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  
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  
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  
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
Ear Training I: PR: MUT 2111 or C.I. Aural comprehension of elements of music-rhythm, melody, harmony, form. May be repeated for credit.

MUT 1211 HFA 1 (1, 1) F, W, S, Su
Ear Training II: PR: MUT 1210 or C.I. Continuation of MUT 1210. May be repeated for credit.

MUT 1212 HFA 1 (1, 1) F, W, S, Su
Ear Training III: PR: MUT 211 or C.I. Continuation of MUT 1211. May be repeated for credit.

MUT 1221 HFA 1 (1, 1) F, W, S, Su
Sight Singing I: PR: MUT 2111 or C.I. Visual/oral comprehension of elements of music-rhythm, melody, harmony, form. May be repeated for credit.

MUT 1222 HFA 1 (1, 1) F, W, S, Su
Sight Singing II: PR: MUT 1221 or C.I. Continuation of MUT 1221. May be repeated for credit.

MUT 1226 HFA 1 (1, 1) F, W, S, Su
Sight Singing III: PR: MUT 1222 or C.I. Continuation of MUT 1222. May be repeated for credit.

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

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. or MUT 3117. Scoring for band, orchestral and choral groups. May be repeated for credit.

MUT 4431 HFA 3 (3, 0) F
Music Theory: PR: MUT 3118. Required of music majors; continuation of MUT 3118; writing, performance, and analysis of music of various stylistic periods.

MUT 4432 HFA 3 (3, 0) W
Music Theory: Continuation of MUT 4431.

MUT 5325 HFA 3 (3, 0) W, Su
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.

MVB 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 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 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 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 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 Principal Performance IV — Brasses (Trumpet): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVB 4342 Principal Performance IV — Brasses (Horn): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVB 4343 Principal Performance IV — Brasses (Trombone): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVB 4344 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 Principal Performance IV — Brasses (Tuba): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVB 5251 Secondary Graduate Performance — Brasses (Trumpet): PR: C.I.

MVB 5252 Secondary Graduate Performance — Brasses (Horn): PR: C.I.

MVB 5253 Secondary Graduate Performance — Brasses (Trombone): PR: C.I.

MVB 5254 Secondary Graduate Performance — Brasses (Baritone Horn): PR: C.I.

MVB 5255 Secondary Graduate Performance — Brasses (Tuba): PR: C.I.

MVB 5351 Principal Graduate Performance — Brasses (Trumpet): PR: C.I.

MVB 5352 Principal Graduate Performance — Brasses (Horn): PR: C.I.

MVB 5353 Principal Graduate Performance — Brasses (Trombone): PR: C.I.

MVB 5354 Principal Graduate Performance — Brasses (Baritone Horn): PR: C.I.

MVB 5355 Principal Graduate Performance — Brasses (Tuba): PR: C.I.

MVB 1111 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  
Class Plano II: PR: MVK 1111 or C.I. Not open to music majors whose major performing medium is piano. May be repeated for credit.

MVK 1131  
Class Plano III: PR: MVK 1121 or C.I. Preparation for the piano proficiency examination. May be repeated for credit.

MVK 1141  
Class Plano IV: PR: Satisfactory piano proficiency examination and 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  
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  
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  
Principal Performance I — Piano: PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

MVK 2313  
Principal Performance I — Organ: PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

MVK 3321  
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  
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  
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  
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  
Principal Performance IV — Piano: PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVK 4343  
Principal Performance IV — Organ: PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVK 4640  
Plano 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.

MVK 4641  
Plano Pedagogy II: PR: C.I. Continuation of MVK 4640. Emphasis on intermediate through advanced levels. May be repeated for credit.

MVK 5251  
Secondary Graduate Performance — Piano: PR: C.I.

MVK 5253  
Secondary Graduate Performance — Organ: PR: C.I.
MVK 5351
Principal Graduate Performance — Piano: PR: C.I.

MVK 5353
Principal Graduate Performance — Organ: PR: C.I.

MVO 1214
Secondary Performance — Recorder: 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.

MVO 3114
Recorder I: Open to non music majors. Class instruction in beginning recorder playing.

MVO 3124
Recorder II: 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.

MVP 1211
Secondary Performance — Percussion: 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.

MVP 2311
Principal Performance I — Percussion: PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

MVP 3321
Principal Performance II — Percussion: PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

MVP 4331
Principal Performance III — Percussion: PR: Satisfactory piano proficiency examination and necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

MVP 4341
Principal Performance IV — Percussion: PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVP 5251
Secondary Graduate Performance — Percussion: PR: C.I.

MVP 5351
Principal Graduate Performance — Percussion: PR: C.I.

MVS 1210
Secondary Performance — String 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.

MVS 1211
Secondary Performance — Strings (Violin): 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 1212
Secondary Performance — Strings (Viola): 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
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
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.
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.

Principal Performance I — Strings (Violin): PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

Principal Performance I — Strings (Viola): PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

Principal Performance I — Strings (Cello): PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

Principal Performance I — Strings (Bass): PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

Principal Performance I — Guitar: PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

Principal Performance II — Strings (Violin): PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

Principal Performance II — Strings (Viola): PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

Principal Performance II — Strings (Cello): PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

Principal Performance II — Strings (Bass): PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

Principal Performance II — Guitar: PR: Necessary competence level determined by faculty jury. Applicable courses required of music majors. May be repeated for credit.

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.

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.

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.

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 4343
Principal Performance IV — Strings (Cello): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVS 4344
Principal Performance IV — Strings (Bass): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVS 4346
Principal Performance III — Guitar: PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVS 5251
Secondary Graduate Performance — Strings (Violin): PR: C.I.

MVS 5252
Secondary Graduate Performance — Strings (Viola): PR: C.I.

MVS 5253
Secondary Graduate Performance — Strings (Cello): PR: C.I.

MVS 5254
Secondary Graduate Performance — Strings (Bass): PR: C.I.

MVS 5351
Principal Graduate Performance — Strings (Violin): PR: C.I.

MVS 5352
Principal Graduate Performance — Strings (Viola): PR: C.I.

MVS 5353
Principal Graduate Performance — Strings (Cello): PR: C.I.

MVS 5354
Principal Graduate Performance — Strings (Bass): PR: C.I.

MVV 1211
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
Principal Performance I — Voice: PR: Faculty jury. Applicable courses required of music majors; private and class lessons. May be repeated for credit.

MVV 3321
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
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
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
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
Voice Pedagogy II: PR: C.I. Continuation of MVV 4640. Intermediate to advanced levels. May be repeated for credit.

MVV 5251
Secondary Graduate Performance — Voice: PR: C.I.

MVV 5351
Principal Graduate Performance — Voice: PR: C.I.
MVW 1210
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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  
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  
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  
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  
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  
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  
Principal Performance IV — Woodwinds (Flute): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVW 4342  
Principal Performance IV — Woodwinds (Oboe): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVW 4343  
Principal Performance IV — Woodwinds (Clarinet): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVW 4344  
Principal Performance IV — Woodwinds (Bassoon): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVW 4345  
Principal Performance IV — Woodwinds (Saxophone): PR: Necessary competence level determined by faculty jury. Required of music majors. May be repeated for credit.

MVW 5251  
Secondary Graduate Performance — Woodwinds (Flute) PR: C.I.

MVW 5252  
Secondary Graduate Performance — Woodwinds (Oboe) PR: C.I.

MVW 5253  
Secondary Graduate Performance — Woodwinds (Clarinet) PR: C.I.

MVW 5254  
Secondary Graduate Performance — Woodwinds (Bassoon) PR: C.I.

MVW 5255  
Secondary Graduate Performance — Woodwinds (Saxophone) PR: C.I.

MVW 5351  
Principal Graduate Performance — Woodwinds (Flute) PR: C.I.

MVW 5352  
Principal Graduate Performance — Woodwinds (Oboe) PR: C.I.

MVW 5353  
Principal Graduate Performance — Woodwinds (Clarinet) PR: C.I.

MVW 5354  
Principal Graduate Performance — Woodwinds (Bassoon) PR: C.I.

MVW 5355  
Principal Graduate Performance — Woodwinds (Saxophone) PR: C.I.
NUR 3045C
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.

NUR 3134
Scientific Theories of Nursing I: The first theoretical course emphasizing the nurse's role in prevention, health maintenance, hospitalization and rehabilitation of disease.

NUR 3134L
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.

NUR 3135
Nursing Seminar III: An opportunity to explore and correlate maternal/infant and fathering/sibling relationships to the nursing process.

NUR 3818C
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.

NUR 3819
Nursing Seminar II: Assessing the health needs of man utilizing the nursing process principles.

NUR 3725C
Pathophysiology and Physical Assessment I: A course integrating the clinical concepts of disease processes with the physical assessment of clients.

NUR 3726C
Pathophysiology and Physical Assessment II: A continuation of Pathophysiology and Physical Assessment I.

NUR 4207
Scientific Theories of Nursing II: PR: Scientific Theories of Nursing I. A continuation of Scientific Theories of Nursing I.

NUR 4207L
Nursing Intervention II: PR: Nursing Intervention I. A continuation of Nursing Intervention I.

NUR 4208
Nursing Seminar IV: An opportunity to investigate highly stressful situations and the means of assisting individuals and families to cope with life-threatening experiences.

NUR 4290C
Special Nursing Topics: Comprehensive nursing care to individuals with complex and critical problems.

NUR 4411
Scientific Theories of Nursing III: PR: Scientific Theories of Nursing II. A continuation of Scientific Theories of Nursing II.

NUR 4411L
Nursing Intervention III: PR: Nursing Intervention II. A continuation of Nursing Intervention II.

NUR 4412
Nursing Seminar V: The role of the nurse in teaching health in the home and in agencies concerned with prevention of illness.

NUR 4905
Nursing Independent Study: An opportunity for indepth study in an area of special interest to the student with a laboratory experience.

NUU 3105
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
Scientific Theories of Nursing IV: PR: Scientific Theories of Nursing III. A continuation of Scientific Theories of Nursing III.

NUU 4225L
Nursing Intervention IV: PR: Nursing Intervention III. A continuation of Nursing Intervention III.

NUU 4226
Nursing Seminar VI: Nursing in today's society.
Critical Inquiry: A study of approaches to problematic situations in nursing and interpretation of findings. Investigation and analyzing nursing research and development of statistics.

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 Programs.

Interpretation I: Analysis of thought, development of imagination; oral presentation of literary forms. (Recommended for students majoring in English and preparing to teach literature).

Interpretation II: PR: ORI 2001 or C.I. Selecting and abridging literary material for platform use; preparation and presentation of program for special and general occasions.


Introduction to Public Administration: PR: C.I. Analysis of administration theories and the process of implementing public policies in a democratic society.

Public Policy Administration: Problems of values, interest, and objectives and their impact on execution of public programs, stressing the relationship between policies and administration.

Ethics and Values in Public Administration: PR: C.I. An examination of abuses of power by administrative officials, procedures established to enforce administrative responsibility and their effectiveness.

Administrative Theory: PR: PAD 3003 or C.I. Theories of bureaucratic behavior with particular emphasis upon the administration of public agencies and public employees. Course uses the case problems method.

Intergovernmental Administration: PR: C.I. Study of the relationships among governmental units within the U.S. federal system and evaluation of administrative practices and their impact on policy and performance.

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.

Labor Relations in the Public Sector: A study of current trends and developments in employment relations in the public sector, especially employee organizations, negotiations, and the collective bargaining process.

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.

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.

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.

Bureaucracy and Public Policy: PR: C.I. A critical examination of the bureaucracy and the impact of bureaucratic behavior on public administration.
### Choice Theory: CAR Analysis of rational choice theories, game theoretic models, incremental decision making, with applications to problems of strategy and politics.

### 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.

### 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.

### 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.

### 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.

### 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 contractility.

### Principles of Ecology: 12 hours in biological sciences. Elements of ecosystems, biogeochemical cycling, environmental factor interactions, population dynamics and evolution communities, and succession.

### Genetics: PR: BSC 1010. Basic principles of heredity as applied to plants and animals. Laboratory will emphasize work with Drosophila.

### Immunology: PR: BSC 1010. Basic principles of the immune reaction, antigens antibody formulation, hypersensitivity and auto-immunity.

### Genetics and Man: PR: BSC 1020 or BSC 1010. Basic principles of genetics as illustrated by human heredity. Meets ESP requirements; designed for non-majors.

### Human Physiology: PR: BSC 1010 or equivalent. The physiology and interrelationships of organ systems of the human body.

### Microtechnique: PR: 1 yr. biology. Preparation of plant and animal tissue for microscopic study.

### Freshwater Systems: PR: PCB 4304 or C.I. Primary and secondary productivity and interaction among factors such as nutrients, pollutants, temperature radiation, turbidity, and seasons.

### Limnology: PR: PCB 3043C or C.I. Introduction to limnology and methods for freshwater ecology with respect to physical, chemical and biological parameters.

### Community Ecology: PR: PCB 3043 and STA 3023; or C.I. Emphasis on dynamics of biotic communities, plant community classification and quantitative description.

### Organic Evolution: PR: 11 hours in biology including PCB 3063C. Evolutionary principles, natural selection and phylogeny; origin of variation and of species.

### Animal Physiology: PR: PCB 3023 or C.I. Functions of body processes occurring in animals with emphasis on vertebrate physiology.
PCB 5305C
Ecology of Running Water: PR: PCB 4304 or C.I. Biological adaptations and communities in relation to channel formation, flow dynamics and physico-chemical aspects of running waters.

PCB 5675
Evolutionary Biology: PR: PCB 3043 and PCB 3063 or C.I. Review of concepts in evolutionary biology. Emphasis on evolution at and below the species level; consideration of genetics and ecological factors in divergence and speciation.

PCB 5806
Endocrinology: PR: PCB 4723 and BCH 4053 or C.I. Mechanisms of action of hormones; interrelationship between the nervous and endocrine systems.

PCB 6049
Contemporary Studies in Biology: PR: Graduate standing. Analysis of current publications and developments in theory and concepts of biological sciences. May be repeated for credit as content is variable.

PCB 6206
Molecular Biology: PR: BCH 4054 or C.I. A course which considers the molecular basis of cellular structures and their functions. Emphasis on current information and research in the area of bio-energetics, cellular regulation, and cellular specialization.

PCB 6256
Development Biology: PR: 12 hours Biology or C.I. Growth and development in plants, animals and protista stressing patterns and mechanisms.

PCB 6426C

PCB 6585
Genetic Mechanisms: PR: PCB 3063 or C.I. Principles of cytological, developmental, human and population genetics.

PCB 6746C
Organismal Physiology: PR: PCB 3023 or C.I. Modern experimental methods and detailed study of specific phases of the physiology of higher vertebrates.

PEL 2121C
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
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
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
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
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 4153C
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
Elementary Swimming: For Non-swimmers and beginning swimmers. Development and study of technique in the basic skills of water safety and swimming.
PEN 2123C 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 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 Life Saving: Instruction, training and certification in basic life saving swimming skills.

PEO 3011C Instructional Analysis in Team Sports: PR: Sophomore standing. Analysis of neuromuscular performances and optimal approach to specific learning patterns in team sports.

PEO 3121C Instructional Analysis in Golf: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific learning patterns.

PEO 3341C Instructional Analysis in Tennis: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.

PEP 3201C Instructional Analysis in Gymnastics and Tumbling: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.

PEP 3421C Instructional Analysis in Wrestling: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific learning patterns.

PEP 3101C Instructional Analysis in Aquatics: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.

PEO 3115C Water Safety Instruction: PR: PEN 3113C or equivalent competency. Methods of teaching water safety. Includes practical application and certification.

PET 3420 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 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 3461C 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 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 4370C Exercise Physiology — Cardiovascular: PR: ZOO 3733. A circulatory study of man’s homeostatic regulation during environmental stress. (Includes lecture and laboratory.)

PET 4371C Exercise Physiology — Respiratory: PR: ZOO 3733 and PET 4370C. A study of metabolic costs and respiratory adjustment to exercise.
PET 4410
Organization and Administration of Physical Education: PR: PET 3461C or 3450C. Administering and organizing for instruction of the physical education class and the total school physical education program.

PET 4510C
Measurement and Evaluation in Physical Education: PR: Jr. standing and completion of Phase I. Techniques of Measurement and evaluation in Physical Education.

PET 4620C
Rehabilitation Training Techniques: PR: PET 4340C. Recognition and rehabilitation of sports injuries, including first aid.

PET 4640
Adapted Physical Education: PR: PET 4340C and PET 4371C. Principles and methods for adapting physical activities and programs for atypical participants. Nature of typical specific disabilities.

PET 5149

PET 6061C
Kinesiologic Analysis of Individual Activities: PR: Rank III Certificate or C.I. Analytical techniques and their methods of application to individual motor activities.

PET 6062C
Kinesiologic 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
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
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

PET 6285C
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
Physiology of Exercise — Environmental: PR: Rank III Certificate or C.I. A study of physiological adaptation resulting from prescribed physical activity programs.

PET 6415
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
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

PET 6540

PHH 3100
Ancient Philosophy: Foundations of Western philosophy in ancient Greek thinking about man and nature, including the pre-Socratics, Socrates, Plato, Aristotle.

PHH 3430
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
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

PHI 1100
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
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
Formal Logic I: Analysis of logical form and of procedures used in deductive inference, of the kind underlying mathematical reasoning.

PHI 3131
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
Ethics: An examination of the nature of moral problems, judgements and principles with an emphasis on recent formulations in ethical theory.

PHI 3630
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
Aesthetics: An investigation into the nature of human artistic experience with special reference to questions of form, perception and style.

PHI 3803
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
Philosophy of Language: PR: PHI 2010 and PHI 2130. Develops philosophically illuminating descriptions of certain general features of language, such as reference, truth, meaning, and necessity.

PHI 4360
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
Philosophy of Science: An examination of the conceptual foundations and methodology of modern science.

PHI 4500
Metaphysics: PR: PHI 2010 and PHI 2130. Investigates "first principles" and inquiries into the ultimate nature of reality through consideration of being, substance, essence, space, time, cause and effect.

PHI 4700
Philosophy of Religion: An examination of basic ideas, beliefs, attitudes and functions of religions; the significance of religion in human experience.

PHM 3350
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
Social Philosophy: Philosophical analysis and evaluation of selected issues arising from interaction of the individual, society, and the state.

PHP 3786
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  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  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 4250  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  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  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  General Physics I: PR: High school physics or PSC 1512 or C.I. CR: MAC 3311. Basic principles of classical mechanics.

PHY 2041C  General Physics II: PR: PHY 2040; CR: MAC 3312. Electricity, magnetism, electromagnetic induction; with laboratory experiments.


PHY 2050C  College Physics I: PR: Two years of high school mathematics or C.I. Lectures and laboratory experiments, mechanics, properties of matter, heat.

PHY 2051C  College Physics II: PR: PHY 2050C or C.I. Sound, light, optics, modern physics.

PHY 2052C  College Physics III: PR: PHY 2050C or C.I. Electrostatics, current electricity, magnetism, instrumentation; nuclear radiation.

PHY 3014C  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  Project Physics II: PR: PHY 3014C or C.I. Heat, weather, solar energy, wave motion, sound, electricity.

PHY 3016C  Project Physics III: PR: PHY 3015C or C.I. Magnetism, motors, light, color, photography, nuclear radiation.

PHY 3034  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 3044  Electricity and Magnetism: PR: PHY 3043 or C.I. Electrostatics, current electricity, special relativity.

PHY 3045  Electromagnetic Waves: PR: PHY 3044 or C.I. Magnetostatics, electromagnetism, wave interference, polarization.
Wave Mechanics: PR: PHY 3045 or C.I. Time-independent Schrodinger equation, eigenfunctions, potential barriers, distribution functions, hydrogen atom, Zeeman & Stark effects.

Thermodynamics and Statistical Physics: PR: PHY 3046 or C.I. Equations of state, equilibrium thermodynamics, derivation of variables from probability concepts and statistical principles.


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.

Physics Laboratory — Electronics: PR: PHY 3752 or C.I. Analog electronics, power supplies, amplifiers, oscillators, filters (active & passive), noise reduction (analog & digital) using both conventional and large scale integrated circuits.

Physics of Scientific instruments: PR: PHY 2052C or PHY 2041C or C.I. A lecture-laboratory course in fundamentals of physics related particularly to the application, operation and limitations of various scientific instruments.

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.

Intermediate Physics Laboratory II: PR: PHY 3802 or C.I. Continuation of physics laboratory instruction.

Optics: PR: PHY 3421 or C.I. Refraction, interference, diffraction, polarization, scattering, absorption and stimulated emission, spectroscopy and lasers.

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.

American National Government: A study of the dynamics of American national government, including its structure, organization, powers, and procedures.


Southern Politics: Study of Southern Politics past and present. Emphasis on patterns of change and recent developments affecting the South and the Nation.

Public Opinion: A substantive and theoretical study of public opinion; patterns of distribution, opinion formation, opinion measurement, policy linkages.

Mass Media and Politics: Influence of media on campaigns, public officials, public opinion, and definition of political news.

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.

Electoral Behavior: Theoretical and substantive inquiry into U.S. electoral behavior: a study of the factors influencing participation and voting behavior.
American Constitutional Law: 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.

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.

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.

Interest Groups and Political Movements: A study of interest groups in the American political process and a comparison of group political objectives and strategies.

Scope and Methods of Political Science: Introduction to the Scope and Methodology of political analysis. Includes scope of the discipline, research design, and methods.

Metropolitan Politics: Analysis of political patterns, processes and issues in American communities.

Policy Problems of Metropolitan Areas: Provides an in-depth analysis of two or three basic policy areas; for example, transportation, education, welfare, crime, etc.

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.

Political Sociology: Sociological analysis of political and para-political groups; socio-economic variables of voting behavior; power elites, societies and systems of government.

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.

Politics of the Future: PR: POS 2041 or C.I. Explores possible political processes of the future with attention to how politics can alleviate or exacerbate man's future problems.

Political Corruption: An examination of official corruption at each level of government.

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.

Judicial Behavior: Study of Judicial Behavior emphasizing the role of courts as a bureaucratic structure. Consideration will be given to comparative judicial systems.

Political Party Behavior: Analysis of selected topics in political party behavior including: changes in Southern politics; urban parties; political campaigns; the changing electorate.

American Constitutional Law: PR: POS 2041 or C.I. The impact of judicial decision-making upon the growth of American political institutions and processes.

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.

Political Science Internship: PR: C.I. Internship working with National, State, County or Municipal government. Assignments with selected civic organization, elected or appointed official.

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
Issues in Urban Public Policy: PR: C.I. Study of characteristics policy issues which areas in which arise in urban political systems, and of various public responses to those issues.

POS 6237
Public Opinion and Policy Formation: PR: C.I. A substantive and theoretical approach to understanding relationships between public opinion and public policy, including opinion/linkage models as well as opinion measurement.

POS 6743

POS 6746
Research Methods: Methods of research design and execution, including both conceptualization and data gathering.

POT 3302
Modern Political Ideologies: A study of modern ideologies since the French Revolution including liberalism, conservatism, capitalism and socialism.

POT 4003
Political Theory: PR: POS 2041 to C.I. Examination of various normative approaches to the study of political science, stressing contemporary developments in the field.

POT 4013
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
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
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
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

PSB 3002

PSB 3442

PSB 4013C

PSB 4103C
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
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
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
General Psychology: The basic principles, theories, and methods of contemporary psychology.
PSY 2014

SS 4 (4, 0) F, W, S, Su

PSY 3023
Careers in Psychology: An examination of various career opportunities in Psychology including educational entry requirements, and related professional issues.

SS 2 (2, 0)

PSY 3302

SS 4 (4, 0)

PSY 3624
Parapsychology: PR: PSY 2013. An examination of the history and development of research on paranormal phenomena with special emphasis on recent developments in extra sensory perception and psychokinesis.

SS 4 (4, 0)

Undergraduate Field Work: PR: C.I. Placement in a community agency for supervised experience in applications of psychology to community problems.

SS 4 (1, 8) F, W, S, Su

PSY 4204
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.

SS 4 (4, 0)

PSY 4214

SS 4 (3, 2) F, W, S, Su

PSY 4604
History and Systems of Psychology: PR: EXP 3404 and PPE 3003. Historical development of psychology with emphasis on classical theoretical positions.

SS 4 (4, 0)

PSY 6216
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.

SS 4 (3, 2) F

PSY 6217
Advanced Research Methodology: 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.

SS 4 (3, 2) W

PSY 6218
Advanced Research Methodology III: PR: PSY 6216, 6217. Advanced procedures for examining the relationships among psychological variables; review of relevant psychological research studies.

SS 4 (3, 2) S

PSY 6308
Psychological Testing I: PR: Graduate admission and C.I. Theory of test construction including test reliability and validity.

SS 4

PSY 6318
Applied Testing and Selection: PR: Graduation admission and C.I. Issues in selecting employees and an examination of currently used tests in industry.

SS 4 (4, 0) W

PSY 6946

SS 2 (2, 0)

PUP 3314
Minorities in American Politics: The roles of minority groups in the American political system; their impact upon the legislative, executive, and judicial processes.

SS 4 (4, 0) S

PUP 4003
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.

SS 4 (4, 0) S

PUP 4323
Women and Politics: An examination of demands for change in the social, political and economics status of women and the policy response of the system.

SS 4 (4, 0) S
PUP 4503
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
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 5058
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
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
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 6056

PUP 6057
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
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
Public Relations: Principles and practice of public relations, the means of gaining publicity and influencing people.

PUR 4101
Publications Layout and Preparation: Layout and preparation of public relations publications for profit and non-profit organizations.

PUR 4800
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
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
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
Quantitative Analysis II: PR: QMB 3600. Continuation of QMB 3600.

QMB 4031
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
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
Vocabulary Study: A word skills course for students wishing to improve their vocabulary.
### RED 3012
**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.

**ED 3 (3, 0) F, W, S**

### RED 3310
**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.

**ED 3 (3, 0) F, W, S**

### RED 4333
**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.

**ED 3 (3, 0) F, W, S, Su**

### RED 4519
**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.

**ED 3 (3, 1) F, W, S, Su**

### RED 5147
**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.

**ED 4 (4, 0) W, Su**

### RED 5514
**Classroom Diagnosis and Treatment of Reading Difficulties:** PR: RED 5147 or equivalent. Classroom diagnosis and corrective teaching in reading; instructional materials.

**ED 4 (4, 1) F, S, Su**

### RED 6116
**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.

**ED 3 (3, 0) S, Su**

### RED 6236
**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.

**ED 3 (3, 0)**

### RED 6335
**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.

**ED 3 (3, 0) F, W, S, Su**

### RED 6515
**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.

**ED 6 (1, 6) Su**

### RED 6746
**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; inservice programs.

**ED 3 (3, 0) W**

### RED 6805
**Clinical Reading Practicum II:** PR: RED 6846. A continuation of RED 6516. May be repeated for credit.

**ED 2-4 (0, 2-4) W**

### RED 6835
**Clinical Reading Practicum III:** PR: RED 6805. A continuation of RED 6805. May be repeated for credit.

**ED 2-4 (0, 2-4) S**

### RED 6845
**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.

**ED 3 (3, 0) F**

### RED 6846
**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.

**ED 2-4 (0, 2-4) F**

### REE 3040
**Real Estate:** PR: Junior standing. Basic principles of real estate ownership; its use and transfer, brokerage, management, legislation, and importance to the economy.

**BA 4 (4, 0) F, W, S, Su**

### REL 2302
**World Religions:** Basic features and historical background of Confucianism, Taoism, Hinduism, Buddhism, Judaism, Christianity, and Islam.

**HFA 4 (4, 0) F**
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 3342 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 HLTH 3 (3, 0) F

RET 3026L HLTH 1 (0, 3) F

RET 3031 HLTH 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 HLTH 3 (3, 0) S

RET 3245L HLTH 1 (0, 3) S

RET 3264 HLTH 3 (3, 0) W

RET 3265L HLTH 1 (0, 3) W
Respiratory Equipment Function Laboratory: CR: RET 3264. Operation, use and maintenance of mechanical ventilators.

RET 3442 HLTH 3 (3, 0)

RET 3483 HLTH 3 (3, 0) W
Respiratory Disease Assessment: PR: APB 3263. Physical Examinations of the chest, demonstrating equipment use, methods and theory.

RET 3874 HLTH 5 (1, 16) W
Clinical Practice II: PR: C.I. Patient care with advanced respiratory equipment. Tracheostomy care. Introduction to cardiopulmonary resuscitation. Introduction to critical care units.


Cardiopulmonary Diagnostics: PR: RET 4935. A survey of methods and procedures used in organizing and treating cardiac dysfunction.

Cardiopulmonary Diagnostics Laboratory: PR: RET 4935. Advanced procedures used to diagnose and assess cardiopulmonary disorders.

Pulmonary Function Studies: PR: C.I. Detailed procedures and tests to provide objective information for diagnosis of respiratory diseases.


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.


Clinical Practice III: PR: RET 3875. Advanced life support techniques and equipment. Care of patients with more complex diseases.


Chest Medicine: PR: APB 3263. Disease states treated medically in conjunction with one or more modalities of respiratory therapy.

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, health and social insurance.

**RTE 3156**  
Pathophysiology: PR: C.I. The study of radiologic science in the diagnosis and treatment of disease.

**RTE 3387C**  
Radiologic Physics II: PR: RTE 3684 or C.I. The clinical application of physics in radiation medicine: detection, measurements, techniques and equipment, radiation protection and safety; state and federal regulations; radiation biology.

**RTE 3412C**  
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.

**RTE 3457C**  
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**  
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**  
Radiographic Procedures II: PR: RTE 3528 or C.I. A study of patient positioning, equipment manipulation and quality of radiographic studies of the organ systems, skull and facial bones, contrast studies.

**RTE 3566**  
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**  
Radiologic Physics I: Physics of radiation including production, interaction of radiation with matter, imaging modalities.

**RTE 3806**  
Clinical Education II: PR: RTE 3831 or C.I. Supervised clinical practice in radiographic procedures, radiation protection, patient care, equipment orientation, radiographic technic, darkroom procedures, and film quality evaluation.

**RTE 3816**  
Clinical Education III: PR: RTE 3806 or C.I. Supervised clinical practice in performing radiographic procedures with emphasis on competency evaluation of routine radiographic examinations.

**RTE 3826**  
Clinical Education IV: PR: RTE 3816 or C.I. Supervised clinical practice in radiographic procedures; competency evaluation of routine radiographic examinations.

**RTE 3831**  

**RTE 4205C**  
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**  
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**  
Radiological Administrativtive Practice: PR: MAN 3310 or C.I. Administration of radiology departments: operation standards, personnel management; facility planning; economic feasibility; community hospital board-administration-professional interrelationships; regulatory agencies; medical legal aspects.

**RTE 4209L**  
Directed Study in Clinical Management: PR: RTE 4209 or C.I. Directed activity in the management of a radiology department.
RTE 4253
Curriculum Planning in Radiologic Technology: PR: EVT 4066 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
Analysis of Instruction in Radiologic Technology: PR: EVT 4066 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
Directed Study in Clinical Education: PR: RTE 4256 or C.I. Directed activity in classroom instruction in radiologic technology.

RTE 4569
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
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
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
Clinical Education VII: PR: C.I. Advanced clinical practice in diagnostic radiography, radiation therapy, nuclear medicine, special procedures, computerized tomography and ultrasound.

RTE 4876
Clinical Education V: PR: C.I. Supervised clinical practice; emphasis on competency evaluation of routine radiographic examinations.

RTE 4945
Clinical Education VIII: PR: C.I. Advanced clinical practice in diagnostic ultrasound, angiographic procedures, computerized tomography and final competency testing.

RTV 3000
Foundations of Broadcasting: Nature of the media, the mechanics of operation, history, economics, programming, and internal and external control.

RTV 3200
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
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
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

RTV 3231
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
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) W
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. Typing skills required.

RTV 3501 SS 4 (4, 0) W
Broadcast Continuity and Programming I: Preparation of written commercial copy for radio and television. Examination of program practices and traffic systems. Typing skills required.

RTV 4206 SS 4 (4, 0) S
Television Directing: PR: RTV 3220. Preparation and direction of programs with emphasis on dramatic values of composition. Typing skills required.

RTV 4301 SS 4 (4, 0)

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) S
Broadcast Continuity and Programming II: PR: RTV 3501 or C.I. Preparation of documentaries and dramatic writing for television and radio. Typing skills required.

RTV 4600 SS 4 (4, 0)

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 studies as well as lesson presentation.

RTV 4700 SS 4 (4, 0)

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)

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  
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  
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  
Teaching Science in Elementary School: PR: Admission to Phase II or C.I. Selected concepts; organizing for instruction; techniques; evaluation procedures.

SCE 3330  
Science Instructional Analysis: PR: EDF 3255 and EDF 3603. Course objectives for a school curriculum and methods and materials.

SCE 4111  
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  
Science Laboratory Teaching: PR: ESE 3940 or C.I. Practices and procedures for managing science laboratories in contemporary school science programs.

SOC 2000  
General Sociology: The basic principles, theories and methods of contemporary sociology.

SOC 3020  
Social Problems: Analysis of major social problems such as mental disorders, sexual deviance, racial discrimination, poverty, community disorganization, and violence.

SOC 3110  
Sociology of Deviant Behavior: 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  
Juvenile Delinquency: Types of delinquency behavior found among juveniles; possible causes and ways society attempts to treat the various forms of delinquency.

SOC 3150  
Criminology: 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 Sociology of Alcoholism: Introduction to the nature of alcoholism and review of its impact on society.

SOC 3201 Social Institutions: PR: SOC 2000. The application of general sociological principles, theories, and elements to the major social institutions of modern society.

SOC 3251 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 3410 Social Stratification: PR: SOC 2000. Study of class, status and power; cultural variations in stratification systems; patterns of mobility and change.

SOC 3500 Research Methods: PR: Introductory Sociology and one other Sociology course.

SOC 3521 Research Methods and Statistics: PR: Two Sociology courses.

SOC 3600 Modern Sociological Thought: PR: SOC 2000. A study of major European and American contributors to modern sociology since World War II.

SOC 3640 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 Contemporary Women and Society: An interpretation of the changing role of woman in contemporary American society.


SOC 3745 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 Sex Roles in Modern Society: The traditional and changing roles of women and men viewed in a cross-cultural perspective.

SOC 3850 Collective Behavior: PR: SOC 2000. Analysis of relatively unstructured social situations, mobs, crowds, etc.

SOC 3871 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 4160 Sociology of Drug Abuse: Analysis of the socio-culture elements of the drug culture.

SOC 4221 Political Sociology: Sociological analysis of political and para-political groups; socioeconomic variables of voting behavior; power elites; societies and systems of government.
SOC 4230  
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  
Sociology of Aging: Sociological aspects of aging in America.

SOC 4262  
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  
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  
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  
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 4480  

SOC 4507  
Data Analysis: PR: SOC 3500 and a statistic course.

SOC 4509  
Social Research Practicum: PR: SOC 4507 and C.I. Application of advanced research designs and data analysis techniques to assigned projects, with an emphasis on data management.

SOC 4830  

SOC 5937  
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.

SOC 6302  
Community Development and Planned Change: PR: Graduate Status and C.I. The organization, structure and process of communities and neighborhoods. Strategies of directed change.

SOC 6426  
Complex Organizations: PR: SOC 6480 and C.I. Study of social interaction, power, and mobility within complex social organizations.

SOC 6481  
Social Systems Analysis and Evaluation: PR: Graduate Status, SOC 6480, and C.I. Examination, analysis and evaluation of goals, objectives and change in social systems.

SOC 6486  
Principles of Applied Sociology: PR: Graduate Status and C.I. Introduction to methods and theories of applied sociology.

SOC 6487  
Program Design and Development: PR: SOC 6481 and C.I. Techniques of system needs assessment, determination of system design requirements, techniques of establishing standards for desired output, and implementation of program objectives and goals.

SOC 6501  
Social Research: PR: Graduate Status and C.I. Research methodology, including problem conceptualization, research proposals, data collection and analysis, and presentation of findings.
SOC 6510
Research Analysis: PR: Undergraduate Statistics, Graduate Status and C.I. Development of various research designs to analyze and interpret existing data from organizations in the community.

SOC 6515
Advanced Social Research: PR: SOC 6501, SOC 6510, and C.I. Advanced methods of social research in applied sociology.

SOC 6565
Grant Writing: PR: SOC 6480, SOC 6501, and C.I. Identification of funding sources, formats, and community response and background information in the development and management of grant applications.

SOC 6825
Group Dynamics: PR: SOC 6480, Graduate Status, and C.I. Examination of social processes in small groups; dynamics of interaction and network analysis.

SOC 6872
Human Relations in the Applied Setting: PR: Graduate Status and C.I. An analysis of the problems of ethnic, economic, and minority groups in social settings.

SOP 3004

SOP 3706
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
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
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
Sexual Behavior: Physiological, social, and clinical aspects of human sexuality.

SOW 3104
Human Growth and Development: Development of social work skills in assessing an individual's biological, psychological and social development from birth to death, recognizing influences of culture and other environmental factors.

SOW 3191
Assessing Human Systems: Development of social work skills in assessing families, groups, organizations and communities are their impact on human functioning and their potential for providing social support.

SOW 3203
Social Welfare: A Social Institution: Study of social welfare policies, programs and services includes socio-cultural, political, economic and historical forces affecting changes in societal responses to human needs. Oriented to non-majors.

SOW 3232

SOW 3302
Introduction to Social Welfare and Social Work: Study of social welfare as an institution and social work as a profession and factors which influence their development as societal resource systems. Oriented to majors.

SOW 4300
SOW 4341
Micro-Level Roles and Interventions in Social Work: PR: SOW 4300, SOW 4307. Study and simulated practice of roles and tasks in systemic problem solving with individuals, families, and supportive and remedial groups.

SS 4 (2, 2) F, W

SOW 4343
Macro-Level Roles and Interventions in Social Work: PR: SOW 4300, SOW 4307. Study and simulated practice of roles and tasks in systemic problems solving to obtain and improve social welfare resources within organizations and communities.

SS 4 (2, 2) F, W

SOW 4352
Interpersonal Skills in Social Work Practice: PR: SOW 4300. Simulated practice of interviewing, group leadership, written communication, and oral presentations, in consensual as well as conflictual contexts of social work.

SS 4 (2, 2) F, Su

SOW 4381
Agency Management: PR: SOW 3302 or SOW 3203. Basic administrative practice including planning, staffing, delegating, managing and developing personnel, monitoring services, budgeting and fund raising.

SS 4 (2, 2) S

SOW 4431
Evaluating Social Work Practice and Service Programs: PR: SOC 3500, SOW 4300. Skill development in (1) documenting unmet client needs, (2) aggregating data for assessing interventive outcome, (3) evaluating programs and (4) analyzing research-practice.

SS 4 (2, 2) F, Su

SOW 4510
Field Experience: PR: Completion of required courses in major; CR: SOW 4522. Supervised learning experiences in agencies which relate social work practice to theory, involving 360 clock hours in the field. May extend over 2 quarters C.I.

SS 12 (0, 12) W, S

SOW 4522
Field Experience Seminar: PR: Completion of required courses in major; CR: SOW 4510. Weekly seminar taken concurrently with SOW 4510 to examine the field experience and interrelate theory and practice situations.

SS 4 (4, 0) W, S

SOW 4620
Social Work with Minorities: PR: SOW 4300 or C.I. Study of oppressed groups and relevant social work interventions; skill development in working with people of a different race, ethnicity, background and life style.

SS 4 (2, 2) F, W

SPA 2112
Basic Phonetics: Physiological descriptions and visual notation of speech sounds. Transcription of deviant speech patterns and regional dialects.

HLTH 6 (4, 2)

SPA 3001
Introduction to Communicative Disorders: Etiology, symptoms, and methods of diagnosing and treating communicative disorders. For beginning and prospective majors in Communicative Disorders.

HLTH 4 (4, 0) F

SPA 3003

HLTH 4 (4, 0) W

SPA 3052
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.

HLTH 3 (3, 0) F, W, S, Su

SPA 3101
Physiological Bases of Speech and Hearing: PR: SPA 3001. An introduction to the anatomical physiological, and physical elements underlying the communication process.

HLTH 5 (5, 2) F

SPA 3550

HLTH 6 (4, 2)

SPA 4030
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.

HLTH 6 (4, 2) S

SPA 4130
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.

HLTH 5 (5, 0)
SPA 4201 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 4222 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 4552 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 4941 Practicum in Communicative Disorders.

SPA 5005 Survey of Communicative Disorders: A survey of speech, language and hearing disorders for habilitative personnel and other interested professionals.

SPA 5305 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 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 Hearing Conservation: PR: C.I. Information regarding the prevention of hearing loss and the establishing of hearing conservation programs.

SPA 5556 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 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 Speech of the Laryngectomee: PR: C.I. Basic principles and practice for developing and improving the speech of the laryngectomee.

SPA 6345 Auditory Amplification: Physical characteristics and clinical aspects of auditory amplifiers for the hearing handicapped. Clinical observations required.


SPA 6410 Communicative Disorders: Language Problems in Adults: A student of language disorders in adults associated with stroke, aging, & systemic disease. Students will develop skills in adult language behavior.
Clinical Practice in Language and Speech Pathology: PR: 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.

Speech Improvement Laboratory: Individual and group practice for students with speech fright and delivery problems. Recommended for all student who want to improve their speaking skills.

Fundamentals of Oral Communication: Use of the body and voice; participation in various speaking situations; planning, organizing, and delivering public speeches.

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.

Speech and Human Relations: Introduction to semantics; symbols and meaning and the relationship with human behavior.

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.

Parliamentary Procedure: Principles and rules governing participation and leadership in the conduct of formal business meetings.

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.

Leadership Through Oral Communication: A theoretical and practical investigation of leadership in oral communication situations, principles of parliamentary law, and approaches to problem solving.

Agrumentation and Debate: PR: SPC 1014 or C.I. Study and practice in the preparation and delivery of argumentative speeches emphasizing argument, evidence and organization.

Persuasion: Motivation: PR: SPC 1014 or C.I. A study of motivational factors involved in persuasive speaking to secure belief and action.

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.

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.

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.

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.

Group Dynamics: A study of human behavior in group situations.

Attitudes and Communication: A survey of the immediate and direct ways in which persuasive communications and social groups come to influence attitudes.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit Hours</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 4633</td>
<td>SS 4 (4, 0)</td>
<td>Rhetoric of Social and Political Action</td>
<td>PR: Junior Standing. A critical investigation of social and political speaking within contemporary American society including agitative rhetoric of political dissent.</td>
</tr>
<tr>
<td>SPC 5200</td>
<td>SS 4 (4, 0)</td>
<td>Evolution of Communication Theory: General Survey</td>
<td>Major communication trends from classical era to the present. Comparison of Aristotelian and non-Aristotelian rhetorics. Contributions to principal figures will be discussed.</td>
</tr>
<tr>
<td>SPC 5547</td>
<td>SS 4 (4, 0)</td>
<td>Persuasion: Attitude Formation and Change</td>
<td>A survey of the immediate and direct ways in which persuasive communications and social groups come to influence attitudes.</td>
</tr>
<tr>
<td>SPC 6219</td>
<td>SS 4 (4, 0)</td>
<td>Modern Communication Theory: Comparative analysis of theories and models of human communication; behavioral systems, encoding and decoding processes, interaction variables, and social context.</td>
<td></td>
</tr>
<tr>
<td>SPC 6442</td>
<td>SS 4 (4, 0)</td>
<td>Small Group Communication</td>
<td>PR: C.I. A study of communication and its effect on small group behavior.</td>
</tr>
<tr>
<td>SPC 6545</td>
<td>SS 4 (4, 0)</td>
<td>Studies in Persuasion</td>
<td>Survey and evaluation of experimental research in persuasion.</td>
</tr>
<tr>
<td>SPN 1100</td>
<td>HFA 4 (4, 1) F</td>
<td>Elementary Spanish Language and Civilization</td>
<td>Designed to initiate the student to the major language skills; listening, speaking, reading, and writing.</td>
</tr>
<tr>
<td>SPN 1101</td>
<td>HFA 4 (4, 1) W</td>
<td>Elementary Spanish Language and Civilization</td>
<td>PR: SPN 1100 or equivalent. Continuation of SPN 1100.</td>
</tr>
<tr>
<td>SPN 1102</td>
<td>HFA 4 (4, 1) S</td>
<td>Elementary Spanish Language and Civilization</td>
<td>PR: SPN 1101 or equivalent. Continuation of SPN 1101.</td>
</tr>
<tr>
<td>SPN 2230</td>
<td>HFA 4 (4, 1) F</td>
<td>Intermediate Spanish Language and Civilization</td>
<td>PR: SPN 1102 or equivalent. Designed to continue development of language skills at the intermediate level.</td>
</tr>
<tr>
<td>SPN 2232</td>
<td>HFA 4 (4, 1) S</td>
<td>Intermediate Spanish Language and Civilization</td>
<td>PR: SPN 2231 or equivalent. Continuation of SPN 2231 with greater emphasis on Spanish civilization from the Middle Ages to the present.</td>
</tr>
<tr>
<td>SPN 3240</td>
<td>HFA 4 (4, 0) F</td>
<td>Spanish Conversation</td>
<td>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.</td>
</tr>
<tr>
<td>SPN 3420</td>
<td>HFA 4 (4, 0)</td>
<td>Spanish Composition</td>
<td>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.</td>
</tr>
<tr>
<td>SPN 4410</td>
<td>HFA 4 (4, 0)</td>
<td>Advanced Spanish Conversation</td>
<td>PR: SPN 3240. Advanced conversation on directed topics from various disciplines: Literature, art, psychology, philosophy, music, business and the sciences.</td>
</tr>
<tr>
<td>SPN 4420</td>
<td>HFA 4 (4, 0)</td>
<td>Advanced Spanish Composition</td>
<td>PR: SPN 3420. Readings and written imitations of modern literary styles in the form of themes, sketches, poems and original stories.</td>
</tr>
<tr>
<td>SPN 4450</td>
<td>HFA 4 (4, 0)</td>
<td>Stylistics</td>
<td>PR: SPN 3240 or equivalent. An intense study of textural criticism. An examination of the relationship between language and literature, explications and linguistic analysis of literary texts.</td>
</tr>
<tr>
<td>SPN 4510</td>
<td>HFA 4 (4, 0) F</td>
<td>Spanish Civilization and Culture</td>
<td>PR: SPN 3240 or SPN 3420. A study of Spanish civilization and culture from Pre-Roman times to the present. Conducted in Spanish.</td>
</tr>
<tr>
<td>SPN 4520</td>
<td>HFA 4 (4, 0) S</td>
<td>Latin American Civilization and Culture</td>
<td>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.</td>
</tr>
</tbody>
</table>
School Consultation Techniques: PR: C.I. Theories and models of school consultation and clinical practice in the consultative role.


Problems in School Psychology: PR: Graduate admission and C.I. An investigation of some of the major problems facing psychologists working in school systems.

School Psychology Internship: PR: Graduate admission, and C.I. Supervised placement in an appropriate school setting.

Survey of Spanish Literature I: PR: SPN 2232 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance and Baroque.

Survey of Spanish Literature II: PR: SPN 2232 or equivalent. Main literary currents and works of the eighteenth and nineteenth centuries.

Survey of Spanish Literature III: PR: SPN 2232 or equivalent. Main literary currents and works from the Generation of 1898 to the present.

Survey of Latin-American Literature I: PR: SPN 2232 or equivalent. Main literary currents and works from the colonial period to the nineteenth century.

Survey of Latin-American Literature II: PR: SPN 2232 or equivalent. Main literary currents and works of the nineteenth century.

Survey of Latin-American Literature III: PR: SPN 2232 or equivalent. Main literary currents and works of the twentieth century.

Spanish Short Story: A study of representatives 19th and 20th Century Spanish short stories and their authors.


Nineteenth Century Spanish Literature: PR: SPW 3101. A study of the representative authors and works in Spanish Romanticism, Realism and Naturalism.

Twentieth Century Spanish Literature: PR: SPW 3102. A study of the representative authors and works in the drama and novel.


Cervantes II: PR: SPW 3101. Don Quixote (Part II).


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
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
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
Trends in Secondary School Social Science: PR: Senior standing. Major social science concepts as they relate to contemporary school programs.

SSE 5334
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
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
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
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.

SSI 4155
Science Fiction and the Social Sciences: A multi-media examination of note-worthy science fiction from the Social Science perspective.

STA 2014

STA 3023
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
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
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
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
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

STA 4202
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 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 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 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 Statistical Theory II: PR: STA 4321. Continuation of STA 4321.


STA 4442 Probability Theory and Applications: PR: STA 4321 or C.I. Markov chains, recurrent events, sequences of random variables, random walk, simple stochastic processes.

STA 4502 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 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 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 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 Applied Probability: PR: A course in mathematical statistics. Axioms of probability theory. Discrete random variables and probability distributions; Demoirve-Laplace limit theorem; laws of large numbers; Markov chains; emphasis on applications.


STA 5857 Applied Time Series Analysis: PR: STA 4321 or STA 4164 or C.I. Stationarity, autocorrelation, moving averages and autoregressive processes, nonstationary time series, identification and estimation, forecasting.

STA 6807 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 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 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

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 2 (0, 10)
Theatre Practicum I: PR: None. 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 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 16th and 19th centuries.

THE 3925 HFA 2 (0, 10)
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 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 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 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.

Stage Carpentry: Construction, painting, rigging, and operation of stage scenery.

Scene Design I: Study of practice of scene design; perspective drawing, fundamentals of design, and techniques of scene painting. (Service on crew as required).

Stage Lighting: PR: Junior standing. Study of stage lighting techniques, practices, and equipment. (Service on light crew is required.)

Theatrical Costuming: Analysis, design and construction of costumes in the theatre.

Make-up Technique: Analysis & design of make-up.

Scene Design II: A continuation of TPA 3060 in which the emphasis is placed on independent planning and execution of scene designs.

Acting I: Prepares the beginning actor for University Theatre Productions. Emphasis on movement, motivation, voice, characterizational techniques, makeup, and other basic requirements for acting.

Acting II: PR: TPP 2110 or C.I. Continuation of TPP 2110 with emphasis on characterization. May be repeated for credit.

Improvisation and Mime: PR: TPP 2110 or C.I. Inquiry into and practice of mime and improvisatory theatre production.

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.

Stage Diction: The role of the human voice in the art of acting; articulation, pronunciation drills, practice in vocal characterization.

Acting III: Concentration on scene study and preparation of audition material for advanced students.

Performance Styles: Instruction and experiences in traditional styles of acting and their application to the modern theatre.

Directing II: PR: TPP 3310. Further theories and techniques of play direction, study of dramatic values, plot structure, style, mood, composition, and directing approach.


Traffic Engineering: PR: STA 3032. Study of operator and vehicle characteristics, and design for street capacity, signals, signs and markings.

Geometric Designs of Transportation Systems: PR: TTE 4004. Study of geometric and construction design elements in the engineering of transportation systems.

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 6820
Mass Transportation Systems: PR: C.I. Planning, design, construction, operation and administration of mass transportation systems.

URP 4026
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
Visual Communication: A study of the visual system of man, and the influences of the visual media on modern society.

VIC 3001
Photo Communication: Photography as a communication device; use of still camera; basic photographic technique. Open to all majors.

ZOO 1010C
General Zoology: Introduction to zoology; structure, function and representative groups; current concepts in zoological sciences.

ZOO 1020
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
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
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
Comparative Vertebrate Anatomy I: PR: ZOO 1010C. The vertebrate animals; relationship of organs and systems; and their phylogenetic significance.

ZOO 3714C
Comparative Vertebrate Anatomy II: PR: ZOO 3713C. Continuation of ZOO 3713C.

ZOO 3733C
Vertebrate Histology: PR: ZOO 1010. Anatomy, structure and function of major cell types and tissues.

ZOO 3813C
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 4203C
Invertebrate Zoology: PR: 12 hours of biology or C.I. Taxonomy, anatomy and ecology of the invertebrate animals.

ZOO 4453C
Ichthyology: PR: 8 hours of zoology or C.I. Introduction to the biology of the fishes, their classification, evolution and life histories.

ZOO 4603C
Embryology: PR: 12 hours of biology. Embryology of the vertebrates; fertilization of egg; stages of cleavage; development of organs and systems.

ZOO 4813C
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 5026C
Aquatic Invertebrates: PR: ZOO 4203C or C.I. A faunistic survey of major invertebrate groups associated with aquatic environments in Florida.

ZOO 5463C
Herpetology: PR: 8 hours of zoology or C.I. Introduction to the biology of the amphibians and reptiles, their classification, evolution and life histories.

ZOO 5475C
Ornithology: PR: 8 hours of zoology or C.I. Introduction to the biology of birds, their classification, evolution and life histories.
ZOO 5483C
Mammalogy: PR: 8 hours of zoology or C.I. Introduction to the biology of mammals, their classification, evolution and life histories.

ZOO 5863C
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.
FACULTY

The date indicates the first year of employment at the University of Central Florida.

ABBOT, 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., Associate 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)

ARCEMONT, EDWARD L., Provisional Instructor of Engineering Technology
(1979), B.E.T. (University of Central Florida)

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

BAKER, GRAEME L., Professor of Chemistry
(1968), B.S., M.S., Ph.D. (Montana State University)

BAKER, JANIE R., Instructor of Education
(1979), B.A., M.A. (University of South Florida)

BARNES, MADELYN, Assistant Professor of English
(1975), B.A., M.A. (University of South Florida)

BARR, MURRAY P., Assistant Professor of Mathematics
(1963), B.S., M.S. (Adelphi University)

BARR-JOHNSON, VIRGINIA, Acting Chairman, Teaching Analysis and Professor of Education
(1971), B.A., M.Ed., Ph.D. (Florida State University)

BARSCH, KARL-HEINRICH, 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., Ph.D. (University of South Florida)

BECK, JAMES K., Associate 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

BIRD, ROBERT C., Associate 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) P.E. (Florida)

BLAU, BURTON I., Associate Professor of Psychology
(1972), B.A., M.A., Ph.D. (Southern Illinois University)

BLEDSOE, CAROL C., Assistant Dean for Academic Affairs and Assistant Professor of Communication
(1970), B.S., M.A., (University of Oklahoma)

BLEDSOE, 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)

BOLEMON, 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)

BONDURANT, FRANK B., Instructor in Management
(1979), B.S., M.B.A. (Harvard University)

BOONE, LOUIS E., Professor of Marketing
(1979), B.S., M.S., Ph.D. (University of Arkansas)

BOSMENY, ALAN D., Visiting Instructor of Radiologic Sciences
(1977), RT (ARRT), A.S., B.S. (Medical College of Georgia)

BRADLEY, DORIS P., Professor of Communicative Disorders
(1979), B.S., M.A., Ph.D. (University of Pittsburgh)
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 and Computer Science
(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 Assistant Professor of Engineering Science
(1977), B.S., M.S. (Meteorology); M.S. (Env. Sci) (University of Central Florida)

BROWN, WILLIAM R., Acting Chairman, Department of Sociology and 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., (University of Georgia)

BUCHANAN, RAYMOND W., JR., Chairman, Department of Communication and 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., Assistant Professor of Engineering Technology
(1977), B.E.E.T., M.T. (Georgia Southern College), E.I.T. (Georgia)

BURT, D.E. SCOTT, Assistant Professor of Psychology
(1972), B.A., M.A., Ph.D. (University of Colorado)

BURROUGHS, WAYNE A., Professor of Psychology
(1969), B.A., M.A., Ph.D. (University of Tennessee)

BUTLER, JOHN F., Assistant Professor of Communication
(1971), B.A., M.A. (University of Central Florida)

CALLARMAN, WILLIAM G., Director, Management Institute and Associate Professor of Management

CAMPBELL, TERRY L., Assistant Professor of Accountancy

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
(1979), B.A., J.D., (University of Florida)

CERVONE, ANTHONY V., Professor of Foreign Languages
(1968), B.A., Ph.D. (St. Louis University)

CHAMBERS, GENE T., Assistant Professor of Business Law

CHANG, KWEI K., Assistant Professor of Engineering
(1977), B.S.M.E., M.S., Ph.D. (University of South Carolina), P.E. (Florida)

CHARRA, JULIUS F., Associate Professor of Biological Sciences
(1969), B.S., M.S., Ph.D. (Washington State University)
CHAVDA, JAGDISH J., Associate Professor of Art (1972), B.F.A., M.F.A. (Michigan State University)

CHENEY, JOHN M., Assistant Professor of Finance (1977), B.B.A., M.B.A., D.B.A. (University of Tennessee)

CHIN, BEVERLY A., Assistant Professor of Education (1978), B.A., M.A., Ph.D. (University of Oregon)

CLARK, EUGENE A., Assistant Professor of Education and Basketball Coach (1969), Ph.B., M.A. (University of Central Florida)

CLARK, L. ANN, Assistant Director for Instructional and Research Budgeting and Instructor in Accountancy (1975), B.S., M.S. (University of Central Florida), CPA (Florida)

CLARKE, WENTWORTH, Professor of Education (1970), B.S., M.S., Ed.D. (University of Nebraska)

CLAUSEN, CHRIS A., III, Professor of Chemistry (1969), B.S., Ph.D. (Louisiana State University)

CLELAND, TROY S., Associate Professor of Education (1969), B.S., M.S., Ph.D. (Florida State University)

COBBOURN, TREVOR, President of the University and Professor of History (1978), B.A., A.M., M.A., Ph.D. (The Johns Hopkins University)

COLEMEN, DANIEL R., Director of Institutional Research and Assistant Professor of Education (1972), B.S., M.S., Ph.D. (Florida State University)

COMISH, NEWEL W., Professor of Management (1968), B.S., M.S., Ph.D. (Ohio State University)

CONNALLY, ROY E., Professor of Psychology (1976), B.A., M.A., Ph.D. (University of Colorado)

COOK, IDA J., Assistant Professor of Sociology (1976), B.A., M.S., Ph.D. (North Carolina State University)

CORNEIL, RICHARD A., Assistant Professor of Education (1974), B.S., M.S.Ed., (Syracuse University)

CORNISH, ALBERT J., Assistant Professor of Chemistry (1977), E.M., M.S., D.Sc. (University of Cincinnati)

COSSABOON, ROGER A., Professor of Finance (1977), B.S., M.A.B.A., D.B.A. (Harvard University)

COSSABOON, SHIRLEY R., Assistant Professor of Accountancy (1977), B.A., M.A., Ph.D. (Texas A & M University)

COTTRELL, LARRY K., Assistant Professor of Computer Science (1976), B.S., M.S., Ph.D. (Purdue University)

COWGILL, ROBERT G., Associate Dean, College of Education and Professor of Education (1969), B.S., M.S., Ph.D. (Indiana State University)

COX, ELAINE B., Assistant Professor of Education (1973), B.S., M.A.T., Ph.D. (Florida State University)

CREEPAU, RICHARD C., Associate Professor of History (1972), B.S., M.A., Ph.D. (Florida State University)

CUNNINGHAM, GLENN N., Professor of Chemistry (1969), B.S., M.S., Ph.D. (North Carolina State University)
DANESE, STEPHEN P., Assistant Professor of Accountancy  
(1978), B.S., M.B.A. (Indiana State University, Terre Haute) C.P.A. (Florida)

DAVIS, DUANE L., Assistant Professor of Marketing  

DAVIS, ROBERT H., Assistant Professor of Communication  
(1977), B.A., M.A., Ph.D. (Ohio State University)

DEBO, JOHN C., Provisional Instructor of Engineering Technology  
(1979), B.S.E.E. (Iowa State University)

DEES, DAVID R., Associate Professor of Sociology  
(1972), B.A., M.A., Ph.D. (University of Notre Dame)

DENNING, RICHARD G., Chairman, Department of Engineering Technology and Professor of Engineering Technology  
(1976), B.M.E., M.S., Ed.D. (University of Georgia) P.E. (Florida, Georgia)

DILLER, GARY G., Assistant Professor of Aerospace Studies  
(1976), B.S., M.S. (University of Nebraska, Omaha)

DIPIERRO, JOHN C., Assistant Professor of Foreign Languages  
(1970), A.B., M.A., Ph.D. (University of Kansas)

DOERING, ROBERT D., Professor of Engineering  
(1969), B.E.M.E., M.S.C.E., M.S.I.E., Ph.D. (University of Southern California) P.E. (Florida, California)

DONNELLY, JEROME J., Associate Professor of English  
(1970), A.B., M.A., Ph.D. (University of Michigan)

DRAKE, ANDREA C., Assistant Professor of Sociology  
(1976), B.A., M.A. (Seton Hall University)

DRISCOLL, JAMES R., Assistant Professor of Computer Science  
(1976), B.S., M.S., Ph.D. (University of Kansas)

DUFFEY, JEFFERSON S., Assistant Professor of Public Service Administration  
(1971), A.B., M.P.A. (Florida Atlantic University)

DUTTON, ARTHUR M., Professor of Statistics  
(1968), B.S., Ph.D. (Iowa State University)

DUTTON, RONALD D., Associate Professor of Computer Science  
(1972), B.S., M.S., Ph.D. (Washington State University)

DZIUBAN, CHARLES D., Professor of Education  
(1970), B.S., M.Ed., Ph.D. (University of Wisconsin)

EDWARDS, G. LeROY, Visiting Research Associate of Radiologic Sciences  
(1977), RT (ARRT), B.A., M.S. (University of California at Irvine)

EDWARDS, M. JO, Director and Assistant Professor of Radiologic Sciences  
(1976), RT (ARRT), B.S., M.Ed. (Memphis State University)

EHLBECK, MICHAEL W., Instructor of Art  
(1978), M.F.A. (University of Florida)

ERHART, LLEWELLN M., Associate Professor of Biological Sciences  
(1969), A.B., Ph.D. (Cornell University)

ELDER, OWEN C., Dean, College of Health and Professor of Health Sciences  
(1978), B.A., M.A., Ph.D. (Florida State University)

ELDRED, GARY W., Associate Professor of Finance  
(1979), B.S., M.B.A., Ph.D. (University of Illinois)
ELDREDGE, LEON E., Director and Professor of Nursing
(1978), B.S., M.A., Ed.D. (University of Arkansas)

ELLIS, LESLIE L., Vice President for Academic Affairs and Professor of Biological Sciences
(1968), B.S., M.S., Ph.D. (University of Oklahoma)

ENO, BURTON E., Chairman, Department of Mechanical Engineering and Aerospace Sciences and Professor of Engineering
(1979), B.S., M.S., Ph.D. (Cornell University) P.E. (Florida, South Dakota)

ERICKSON, ERNEST E., Acting Chairman, Department of Electrical Engineering and Communication Sciences and Professor of Engineering
(1969), B.E.E., M.S.E., Ph.D. (University of Florida), P.E. (Florida)

ESLER, WILLIAM K., Professor of Education
(1968), B.A.Ed., M.A.Ed., Ph.D. (Kent State University)

EUBANK, LEE E., Associate Professor of Music
(1973), B.M., M.M., Ph.D. (Indiana University)

EUBANKS, CLIFFORD L., Dean, College of Business Administration and Professor of Management
(1975), B.S., M.B.A., Ph.D. (University of Arkansas)

EVANS, JOHN L., Associate Professor of History
(1972), B.A., M.A., Ph.D. (University of North Carolina)

EVANS, RONALD D., Professor of Engineering
(1968), B.S., M.N.S., M.S., Ph.D. (Arizona State University) P.E. (Florida, Oklahoma, Texas, Louisiana)

EYFELLS, JOHANN K., Professor of Art
(1969), B. Arch., M.F.A. (University of Florida)

FAGAN, ROBERT, Assistant Professor of Engineering
(1976), B.S., M.S., M.S.E.S.M. (University of Central Florida)

FEDLER, FREDRIC E., Professor of Communication
(1971), B.S., M.A., Ph.D. (University of Minnesota)

FETSCHER, ELMAR B., Assistant Professor of History
(1971), B.A., M.Ed., M.A., Ph.D. (University of Georgia)

FISHER, RANDY D., Associate Professor of Psychology
(1971), B.A., Ph.D. (Vanderbilt University)

FLICK, ROBERT G., Professor of Humanities
(1968), B.S., M.A., Ph.D. (University of Florida)

FOTE, RICHARD E., JR., Assistant Professor of Music
(1979), B.S., M.A. (Eastman School of Music)

FOWLER, EARL C., Professor of Education

FOWLER, RICHARD E., JR., Instructor in Finance
(1979), B.S., M.B.A. (University of Central Florida)

FREDERICK, TERRY J., Chairman, Department of Computer Science and Associate Professor of Computer Science
(1975), B.S., M.S., Ph.D. (University of Wisconsin)

FRITZ, RICHARD G., Assistant Professor of Economics
(1979), B.A., M.S., Ph.D. (Georgetown University)

FRYE, VIRGINIA C., Visiting Assistant in Economic Education
(1977), B.A. (Ohio State University)
FULLER, DONALD A., Associate Professor of Marketing  
(1972), B.S., M.B.A., Ph.D. (Georgia State)  

GALLAGHER, CHARLES A., Associate Professor of Management  
(1972), B.S., M.E., M.S., D.B.A. (Florida State University)  

GAMBRELL, CARROLL B., JR., Professor of Engineering  
(1967), B.A., B.S., M.S.E., Ph.D. (Purdue University), P.E. (Arizona, Texas, California)  

GAUDNEK, WALTER, Professor of Art  
(1970), Diploma, M.A., Ph.D. (New York University)  

GENNARO, ROBERT N., Associate Professor of Biological Sciences  
(1969), B.S., M.S., Ph.D. (Texas A & M University)  

GERBER, HOMER C., Associate Professor of Computer Science  
(1968), B.S., M.A., Ph.D. (Florida State University)  

GERGLEY, GERALD R., Assistant Professor of Education  
(1970), Ed.B., Ed.M. (State University of New York)  

GILLET, PETER L., Associate Professor of Marketing  
(1979), B.A., B.S.C., M.B.A., Ph.D. (Michigan State University)  

GORDON, PAMELA B., Assistant Professor of Nursing  
(1976), B.S.N., M.N. (University of Florida)  

GOREE, JOHN PHILIP, Vice President for Business Affairs and Associate Professor of Sociology  
(1968), B.A., M.Ed., (University of Florida)  

GRAHAM, THOMAS A., Visiting Instructor of Radiologic Sciences  
(1976), RT (ARRT), B.S. (The Chicago Medical School)  

GRASY, WILLIAM K., Vice President Community Relations and Associate Professor of Communication  
1968), B.S., M.A., Ph.D. (University of Texas)  

GRAU, J. KAYE, Assistant Professor of Computer Science  
(1979), B.S., M.S., Ph.D. (University of Missouri, Rolla)  

GREEN, CHERYLE E., Assistant Professor of Sociology  
(1978), B.A., M.S.W., (Atlanta University)  

GREEN, FREDERICK E., Associate Professor of Education  
(1970), B.S.Ed., M.S.Ed., E.D. (Ball State University)  

GREEN, HAROLD E., Director, Daytona Beach Campus and Professor of Education  
(1968), B.S., M.Ed., Ed.D. (University of Missouri)  

GREENHAW THOMAS D., Assistant Professor of History  
(1969), B.A., M.A., Ph.D. (Auburn University)  

GRIERTSON, PETER R., Assistant Professor of Accountancy  
(1976), B.A., M.P.A., (Georgia State University) CPA (Florida)  

GRIFFITH, HAROLD I., Associate Professor of Engineering Technology  
(1972), B.S., M.S. (Pennsylvania State University) P.E. (Florida)  

GROVE, RICHARD S., Chairman, Department of English and Associate Professor of English  
(1969), A.B., M.A., Ph.D. (University of Missouri)  

GUEST, SANDRA A., Assistant Professor of Psychology  
(1977), B.A., M.S., Ph.D. (Auburn University)  

GUPTON, JOHN T., III, Assistant Professor of Education  
(1978), B.S. M.S., Ph.D. (Georgia Institute of Technology)
GURNEY, DAVID W., Assistant Professor of Education  
(1970), B.A., M.A., Ph.D. (Florida State University)

HAGEDOORN, A. HENRY J., Associate Professor of Engineering  
(1972), B.Sc., M.Sc., Ph.D. (Cornell University), P.E. (Florida)

HALL, HARRY O., Chairman, Secondary Education and Professor of Education  

HALL, WILLIAM J., Instructor of Communication  
(1977), B.I.E., M.A. (Purdue University)

HANDBERG, ROGER B., JR., Professor of Political Science  
(1972) B.A., Ph.D. (University of North Carolina)

HARDEN, RICHARD C., Director, South Orlando Campus and Professor of Engineering  
(1972) B.M.E., B.E.E., M.S.E., Ph.D. (University of Florida), P.E. (Florida)

HARLACHER, HARRY, Assistant Professor of Education  
(1971), B.S., M.Ed., (Pennsylvania State University)

HARPER, HARVEY H., Provisional Instructor of Engineering  
(1978), B.S. (University of Central Florida)

HARRIS, MICHAEL G., Assistant Professor of Engineering  
(1978), B.S., M.S., D.Sc. (George Washington University)

HARROW, THOMAS L., Associate Professor of Education  
(1970), B.S., M.Ed., Ph.D. (Florida State University)

HARTMAN, J. PAUL, Assistant Dean, College of Engineering and Professor of Engineering  
(1968), B.S., B.S.C.E., S.M., Ph.D. (University of Florida), P.E. (Florida)

HARTMAN, SUSAN, Assistant Professor of English  
(1977), B.A., M.F.A. (Columbia University School of the Arts)

HAUGHEE, HAROLD J., Assistant Professor of Education and Coordinator of Undergraduate Records, Professional Laboratory Program, and Educational Development Program  
(1970), B.S., M.S., Ph.D. (Indiana State University)

HAYDEN, ROBERT F., Visiting Assistant Professor of Engineering  
(1979), B.S.C.E., M.S.C.E. (University of Arkansas) E.I.T. (Arkansas)

HEAD, CLARENCE M., Associate Professor of Engineering Technology  
(1978), B.S., M.S., Ph.D. (University of Georgia), P.E. (Florida, Georgia)

HEINSOHN, BARBARA H., Assistant Professor of Medical Technology  
(1979), B.S., MT (ASCP), M.A. (Central Michigan University)

HEINZER, MARTIN N., Associate Professor of Mathematics  
(1969), B.S., M.S., Ph.D. (Florida State University)

HERNANDEZ, DAVID E., Professor of Education  
(1968), B.S., M.S., Ed.D. (Florida State University)

HERTEL, GEORGE R., Professor of Chemistry  
(1968), B.S., M.S., Ph.D. (Johns Hopkins University)

HICKS, ROBERT E., Director, Center for Economic Education and Professor of Economics  
(1968), B.S., M.A., Ph.D. (Ohio State University)

HIETT, SHARON LEE, Assistant Professor of Education  

HIGGINBOTHAM, PATRICIA E., Assistant Professor of Education  
(1972), B.S., M.S., Ed.D. (University of Alabama)

HIGHTOWER, PAUL, Assistant Professor of Communication  
(1978), B.A., M.A. (University of Iowa)
HITT, FRANKLIN J., Assistant Professor of Finance (1969), B.S., M.B.A. (Ohio State University)

HODGIN, JOHN E., Associated Professor of Sociology (1972), B.A., M.S.W., Ph.D. (Oklahoma State University)

HOGLIN, JOHN G., Associate Professor of Communication (1974), B.A., M.A., Ph.D. (Wayne State University)

HOLTEN, N. GARY, Chairman, Department of Public Service Administration and Associate Professor of Public Service Administration (1972), B.A., M.A., Ph.D. (University of Massachusetts)

HOOVER, BASIL, Associate Professor of Education (1969), A.B., M.A., Ed.D. (University of Florida)

HORNADAY, JAMES D., Assistant Professor of Military Science, Army ROTC (1979), B.S., M.A. (Ball State University)

HOSLER, E. RAMON, Visiting Associate Professor of Engineering (1978), B.Ch.E., M.S., Ph.D. (University of Illinois)

HOSNI, DJEHANE A.M., Assistant Professor of Economics (1977), B.A., M.A., Ph.D. (University of Arkansas)

HOSNI, YASSER A., Assistant Professor of Engineering (1976), B.Sc. (M.E.), Ph.D. (University of Arkansas), P.E. (Florida)

HOTALING, EDWARD R., JR., Associate Professor of Music (1969), B.M., Ph.D. (Northwestern University)

HOSNER, MARQUIS D., Assistant Professor of Military Science (1976), B.S. (Southwest Missouri State University)

HUBLER, JOHN W., Visiting Professor of Engineering Technology (1976), B.S.C.E., C.E., M.S.C.E. (Yale University) P.E. (Florida and 18 other states)

HUDSON, GAYNOR M., Assistant Professor of Physics (1978), B.S., Ph.D. (Florida State University)

HUNT, MARILYN F., Instructor in Accountancy (1971), B.S., M.A. (University of Missouri), C.P.A. (Florida)

HUNTER, RICHARD D., Associate Professor of Education (1967), B.S., M.A. (University of Notre Dame)

HURST, JOHN W., Assistant Professor of Mathematics (1968), B.S., M.M. (University of South Carolina)

HYNES, MICHAEL C., Associate Professor of Education (1971), B.S.Ed., M.Ed., Ph.D. (Kent State University)

IDOUX, JOHN P., Assistant Dean, College of Natural Sciences and Professor of Chemistry (1970), B.A., M.S., Ph.D. (Texas A & M University)

INGRAM, DAVID B., Assistant Professor of Communicative Disorders (1970), B.A., M.A. Ph.D. (State University of New York at Buffalo)

IPPOLITO, JOSEPH E., Assistant Professor of Theatre (1979), B.F.A., M.F.A. (Florida State University)

IRVINE, ALLEN D., Assistant Professor of Military Science, Army ROTC (1979), B.A. (Florida Southern)

JAFFEE, CABOT L., Professor of Psychology (1971), B.A., Ph.D. (Florida State University)

JENKINS, DAVID R., Professor of Engineering (1969), B.S.C.E., M.S.E.M., Ph.D. (University of Michigan) P.E. (Ohio, Florida)
JERVEY, WILLIAM H., JR., Associate Professor of Political Science (1970), B.B.A., M.A., Ph.D. (University of Arizona)

JOELS, A. ROSE, Assistant Professor of Education (1978), B.A., M.Ed., Ph.D. (University of Arizona)

JOHNSON, DALE S., Assistant Professor of Respiratory Therapy (1977), RRT, B.S., M.Ed. (University of Houston)

JOHNSON, FRANCES L., Assistant Professor of Communication (1971), A.B., M.A. (University of Kentucky)

JOHNSON, JEFFRY M., Assistant Professor of Military Science (1978), B.A., M.A. (Stetson, University)


JOHNSON, WALTER L., Associate Professor of Accountancy (1979), B.S., M.B.A., Ph.D. (University of Texas, Austin), C.P.A. (Ohio)

JONES, DAVID E., Associate Professor of Sociology (1972), B.A., M.A., Ph.D. (University of Oklahoma)

JONES, DONALD E., Assistant Professor of Philosophy (1972), B.A., M.A. Ph.D. (University of Oklahoma)

JONES, MELVIN E., Associate Professor of Political Science (1971), B.S., M.A., Ph.D. (University of Oklahoma)

JONES, RONALD M., Assistant Professor of Public Service Administration (1972), A.B., M.E.D. (University of Florida)

JONES, ROY C., JR., Assistant Professor of Mathematics (1969), B.S., M.S., Ph.D. (Western Reserve University)

JONES, TROY H., JR., Professor of Management (1971), B.A., M.Litt., Ph.D. (Ohio State University)

JOSEPH, BRUCE, Assistant Director and Instructor in Economics (1976), B.S.B.A., M.A.E. (Florida Technological University)

JUGE, FRANK E., Associate Dean, Graduate Studies and Research; Executive Assistant to the President for Employee Relations; Professor of Chemistry (1968), B.S., Ph.D. (University of Arkansas)

KALLINA, EDMUND F., JR., Associate Professor of History (1970), B.A., M.A., Ph.D. (Northwestern University)

KAMRAD, DENNIS R., Coordinator, General Studies Program (1972), B.A., M.A.Ed. (Rollins College)

KANGELOS, MARILYN, Associate Professor of Medical Technology (1976), B.S., MT (ASCP), M.S. (Medical College of Georgia)

KASSIM, HUSAIN, Associate Professor of Philosophy and Religion (1970), B.A., M.A., I.L.L.B., Ph.D. (University of Bonn)

KAVANAUGH, RAPHAEL R., JR., Assistant Professor of Education (1976), B.A., M.A., Ed.D. (Temple University)

KAZMERSKI, KENNETH J., Associate Professor of Sociology (1979), B.A., M.S.W., D.S.W. (City University of New York)

KELTNER, KAREN L., Assistant Professor of Music (1976), A.B., B.S., M.M. (Indiana University)
KENNEDY, HENRY, Chairman, Department of Political Science and Professor of Political Science  
(1971), B.S., M.Ed., M.A., Ph.D. (University of Michigan)

KERSTEN, ROBERT D., Dean, College of Engineering and Professor of Engineering  
(1968), B.S., M.S., Ph.D. (Northwestern University), P.E. (Florida, Arizona, Oklahoma)

KILBRIDE, WADE R., Assistant Dean, College of Business Administration and Instructor in Economics  
(1978), B.S., M.A. (University of Texas, Austin)

KINSLEY, KATHRYN C., Instructor of Computer Science  
(1978), B.S., M.S. (University of Central Florida)

KISSEL, BERNARD C., Professor of Communication  
(1968), A.S., B.A., M.A., Ph.D. (University of Michigan)

KLAGES, WALTER J., Professor of Economics  
(1970), B.S., M.S., Ph.D. (University of Alabama)

KLEE, HAROLD I., Associate Professor of Engineering  
(1972), B.S., M.S., Ph.D. (Polytechnic Institute of Brooklyn) P.E. (Florida)

KNUDSON, STEPHEN K., Associate Professor of Chemistry  
(1972), B.S., Ph.D. (Massachusetts Institute of Technology)

KOEVENIG, JAMES L., Professor of Biological Sciences  
(1971), B.A., M.A., Ph.D. (University of Iowa)

KOROSE, RICHARD A., Assistant Professor of Aerospace Studies  
(1978), B.S., M.A. (University of Northern Colorado)

KORSTAD, RICHARD J., Assistant Professor of Public Service Administration  
(1972), B.S., M.P.A. (University of Georgia)

KUHN, DAVID T., Professor of Biological Sciences  
(1970), B.A., M.S., Ph.D. (Arizona State University)

KUJAWA, FRANK B., Associate Professor of Geology  
(1969), B.A., Ph.D. (Johns Hopkins University)

KUYPER, LYNDA A., Instructor of Medical Record Administration  
(1979), B.S., RRA. (Medical College of Georgia)

KYSILKA, MARCELLA L., Coordinator of Educational Research and Professor of Education  
(1969), B.S. Ed., M.Ed., Ph.D. (University of Texas)

LaFRANCE, LEO P., Assistant Professor of Military Science  
(1978), B.S. (Embry — Riddle Aeronautical University)

LAIRD, ROBERT J., Associate Dean, College of Natural Sciences and Associate Professor of Biological Sciences  
(1970), B.S., R.P.T., M.S., Ph.D. (University of Texas)

LARSEN, ROBERT, Instructor of Computer Science  
(1979), B.S., M.S. (University of Central Florida)

LEVAAS, LARRY N., Assistant Professor of Military Science  
(1978), B.S., M.B.A. (Stetson University)

LEVENSOHN, STEPHEN B., Professor of Philosophy  
(1969), B.A., M.A., Ph.D. (Florida State University)

LEWIS, GERALD, Visiting Assistant Professor of Engineering  
(1979), B.S., M.S.E.E. (Michigan State University)

LILIE, STUART A., Associate Professor of Political Science  
(1972), B.A., Ph.D. (Johns Hopkins University)
LINTON, DARRELL G., Assistant Professor of Engineering  
(1977), B.A., M.E., Ph.D. (University of Florida), P.E. (Florida)

LOTZ, STEVEN D., Professor of Art  
(1968), B.A., M.F.A. (University of Florida)

LYTLE, J. STEPHEN, Director and Assistant Professor of Respiratory Therapy  
(1975), RRT, B.S. (University of Central Florida)

MADDOX, WILLIAM S., Assistant Professor of Political Science  
(1977), B.S., M.A., Ph.D. (University of Tennessee)

MADESEN, BROOKS C., Associate Professor of Chemistry  
(1970), B.S., M.S., Ph.D. (Ohio University)

MALONE, LINDA C., Assistant Professor of Statistics  
(1979), B.S., M.S., Ph.D. (Virginia Polytechnic Institute)

MANNING, PATRICIA C., Associate Professor of Education  

MARQUARDT, JOHN D., Associate Professor of Accountancy  
(1975), A.B., M.B.A., Ph.D. (University of Illinois Urbana) CPA (Michigan)

MARTIN, HUGH P., Assistant Professor of Education  
(1972), B.S., M.A. Ed.D. (University of Alabama)

MARTIN, RAYMOND L., Associate Professor of Management  
(1971), B.S.E.E., M.E.A., Ph.D. (American University)

MARTIN, ROBERT D., Chairman, Elementary Education and Professor of Education  

MATHews, BRUCE E., Assistant Dean, College of Engineering and Professor of Engineering  
(1969), B.E.E., M.S.E., Ph.D. (University of Florida), P.E. (Florida)

MATTSON, GUY C., Chairman, Department of Chemistry and Professor of Chemistry  
(1969), B.S., Ph.D. (University of Florida)

McALEER, GORDON, Associate Professor of Marketing  
(1969), B.B.A., M.S., Ph.D. (Louisiana State University)

McCARTNEY, WILLIAM W., Assistant Professor of Management  
(1978), B.S.I.M., M.B.A., Ph.D. (Louisiana State University, Baton Rouge)

McCOWN, J. ROBERT, JR., Lecturer in English  
(1969), B.A., M.A. (University of California)

McGEE, NANCY R., Assistant Professor of Education  
(1970), B.S., M.A., Ed.D. (Florida Atlantic University)

McGEE, WILLIAM W., Professor of Forensic Science  
(1968), B.S., M.S., Ph.D. (University of Florida)

McGUIRE, JOHN M., Associate Professor of Psychology  
(1972), B.A., M.A., Ph.D. (George Peabody College)

McLAIN J. NANNETTE, Assistant Dean College of Education and Associate Professor of Education  
(1968), B.S., M.Ed., Ph.D. (University of Chicago)

McLELLON, WALDRON M., Professor of Engineering  
(1969), B.S., B.C.E., M.C.E., M.S. (Physics), M.S. (Env. Engr.) Ph.D. (Rensselaer Polytechnic Institute), P.E. (Florida, South Carolina, Rhode Island, D.C.)

McLEAN, SUSAN R., Assistant Professor of Nursing  
(1977), B.S.N., M.N. (University of Florida)

McNIEL, DOUGLAS W., Assistant Professor of Economics  
(1979), B.S., M.S., Ph.D. (Oklahoma State University)
MEESKE, MILAN D., Professor of Communication
(1970), B.S., M.A., Ph.D. (University of Denver)

MENDENHALL, THOMAS S., Director and Associate Professor of Health Sciences
(1976), B.A., MT (ASCP), M.S., Ph.D. (University of Missouri)

MERRITT, KING, JR., Assistant Professor of Education

MEYERS, JEFFREY A., Assistant Professor of Physics
(1977), B.A., M.S., Ph.D. (Pennsylvania State University)

MICARELLI, CHARLES N., Dean, College of Humanities and Fine Arts and Professor of
Foreign Languages
(1967), B.A., M.A., Ph.D. (Boston University)

MIDGETT, JEANICE, Associate Professor of Education
(1972), B.S., M.A., Ed.S., Ed.D. (University of Georgia)

MILBY, JERRY M., Assistant Professor of Military Science
(1978), B.S. (University of Nebraska)

MILLER, A. JEANNE, Assistant Professor of Education

MILLER, C.C., Dean, College of Education and Professor of Education
(1967), B.A., M.Ed., Ed.D. (Florida State University)

MILLER, ERNEST E., Professor of Education
(1968), B.S., M.S., Ed.D. (University of North Dakota)

MILLER, HARVEY A., Professor of Biological Sciences
(1970), B.S., M.S., Ph.D. (Stanford University)

MILLER, MARGARET G., Assistant Professor of Education
(1971), B.S., M.S., Ed.D. (University of Florida)

MILLER, ROBERT S., Assistant Professor of Sociology
(1971), B.A., M.A., Ph.D. (Florida State University)

MILLCAN, CHARLES N., Professor of Finance
(1965), B.S., M.A., Ph.D. (University of Florida)

MINARDI, ANTONIO, Visiting Instructor of Engineering
(1977), B.A.Sc., S.M. (Massachusetts Institute of Technology)

MOHAN, SATISH, Associate Professor of Engineering
(1978), B.Sc., B.Tech., M.S., Ph.D. (Purdue University), P.E. (Florida)

MORGAN, THOMAS O., Professor of Communication
(1972), A.B., M.A., Ph.D. (Florida State University)

MORRISEY, WILLIAM D., Instructor of Education
(1979), B.S., M.A. (University of Missouri)

MOSES, EDWARD A., Chairman, Department of Finance and Associate Professor of Finance
(1979), B.S., M.B.A., Ph.D. (University of Georgia)

MULIGA, MICHAEL I., Assistant Professor of Engineering
(1978), B.S., B.S.C.E., M.S., Ph.D. (University of Oklahoma)

MUKHOPADHYAY, AMAR, Professor of Computer Science
(1979), B.Sc., M.Sc., Ph.D. (University of Calcutta)

MULLIN, THOMAS A., Director and Associate Professor of Communicative Disorders
(1972), B.A., M.S., Ph.D. (Syracuse University)

NEILL, MARY J., Director and Instructor of Medical Record Administration
(1978), B.S. (University of Central Florida)
NEWELL, RONALD A., Assistant Dean for Continuing Education (1973), B.S., M.S., Ed.D. (University of Arizona)

NOON, JACK H., Chairman, Department of Physics and Professor of Physics (1971), B.S., M.S., Ph.D. (University of Rochester)

NORMAN, EDWARD, Associate Professor of Mathematics (1969), B.S., Ph.D. (Cornell University)

NORTON, JOHN M., Instructor of Music (1978), B.A. (University of Michigan)

NUCKOLLS, CHARLES E., Associate Professor of Engineering (1973), B.S., M.S., Ph.D. (University of Oklahoma), P.E. (Florida, Texas)

OELFKE, WILLIAM C., Associate Professor of Physics (1969), B.S., Ph.D. (Duke University)

O'ARA, PATRICK J., Associate Professor of Mathematics (1969), B.S., M.S., Ph.D. (University of Miami)

O'KEEFE, M. TIMOTHY, Professor of Communication (1968), B.A., M.A., Ph.D. (University of North Carolina)

OLSON, ARTHUR H., Associate Professor of Education (1972), B.A., M.A.T., Ed.D. (Northern Illinois University)

OLSON, JUDITH L., Assistant Professor of Education (1974), B.S., M.A., Ph.D. (University of Florida)

OMANS, STUART E., Professor of English (1968), B.A., M.A., Ph.D. (Northwestern University)

ORWIG, GARY W., Director, Learning Resource Center and Assistant Professor of Education (1977), B.S., M.S., Ed.D. (Indiana University)

OSBORNE, JOHN A., Associate Professor of Biological Sciences (1972), B.S., M.S., Ph.D. (Kansas State University)

OSBORNE, KING W., Assistant Professor of Engineering Technology (1975), B.S.E., M.E. (University of South Florida), P.E. (Florida)

OSTLE, BERNARD, Dean, College of Natural Sciences and Professor of Statistics (1967), B.A., M.A., Ph.D. (Iowa State University)

PALMER, MARY J., Associate Professor of Education (1970), B.S., M.S., Ed.D. (University of Illinois)

PARK, CHAN S., Assistant Professor of Engineering (1977), B.S., M.S.I.E., Ph.D. (Georgia Institute of Technology), P.E. (Florida)

PATZ, BENJAMIN W., Associate Professor of Engineering (1969), B.E.E., M.E.E., Ph.D. (Carnegie-Mellon University), P.E. (Florida)

PAUGH, ROBERT F., Assistant Professor of Education (1973), B.S., M.A., Ed.D. (North Carolina State University)

PAUL, GORDON W., Chairman, Department of Marketing and Professor of Marketing (1977), B.S., M.B.A., Ph.D. (Michigan State University)

PAULEY, BRUCE F., Professor of History (1971), B.A., M.A., Ph.D. (University of Rochester)

PAYAS, ARMANDO, Acting Chairman, Department of Foreign Languages and Associate Professor of Foreign Languages (1969), B.A., M.A., J.D., Ph.D. (Florida State University)
PERCY, LANCE E., Assistant Professor of Education
(1978), B.S., M.Ed., Ed.D. (University of Virginia)

PEERY, PATRICIA M., Instructor of Education
(1979), B.A., M.A. (University of South Florida)

PETRASKO, BRIAN E., Associate Professor of Engineering Science
(1972), B.E.E., M.E., D.Eng. (University of Detroit)

PETTOFREZZO, ANTHONY J., Professor of Mathematics

PHILLIPS, RONALD L., Professor of Engineering Science
(1970), B.S.E., M.S.E., M.A., Ph.D. (Arizona State University)

PHILLIPS, THOMAS E., Associate Professor of Accountancy
(1977), A.B., M.B.A., Ph.D. (University of Nebraska)

POE, LILLIAN F., Assistant Professor of Education
(1968), B.S., M.A.T., Ed.D. (Nova University)

POOR, FREDERICK A., Associate Professor of Accountancy
(1976), B.S., M.S., Ph.D. (University of Minnesota)

POWELL, JOHN W., Chairman, Physical Education and Associate Professor of Education

POWELL, THOMAS E., Instructor of Accountancy
(1977), B.S.B.A., M.S.A. (University of Central Florida) C.P.A. (Florida)

PRICE, MARIAN W., Instructor of English

PRYOR, ALBERT, Associate Professor of Communication
(1972), B.S., M.A., Ph.D. (University of Michigan)

PYLE, RANSFORD C., Assistant Professor of Public Service Administration
(1976), A.B., J.D., M.A., Ph.D. (University of Florida)

RAFFA, FREDERICK A., Chairman, Department of Economics and Associate Professor of Economics
(1969), B.S., M.B.A., Ph.D. (Florida State University)

RAUTENSTRAUCH, C. PETER, Associate Professor of Mathematics
(1966), B.A., M.A., Ph.D. (Auburn University)

REIDENBACH, RICHARD C., Chairman, Department of Management and Professor of Management
(1970), B.A., M.S., Ph.D. (St. Louis University)

REIFF, WALLACE W., Acting Associate Dean, College of Business Administration and Professor of Finance

RENNER, KENNETH H., Assistant Professor of Education
(1969), B.S.P.E., M.P.H. (University of Florida)

RHEN, WALTER J., Associate Professor of Computer Science
(1969), A.B., M.S., Ph.D. (University of Texas)

RILEY, PAUL E., Acting Chairman, Department of Humanities, Philosophy and Religion and Associate Professor of Humanities

RISER, JOHN S., Associate Professor of Philosophy
(1969), B.A., Ph.D. (University of North Carolina)
RODRIGUEZ, RENE S., Assistant Professor of Mathematics
(1971), B.Ch.E., Ph.D. (University of Tennessee)

ROHTER, FRANK D., Professor of Education
(1968), B.S., M.Ed., Ph.D. (University of Southern California)

ROLLINS, JACK B., JR., Acting Dean, College of Social Sciences and Professor of Psychology
(1969), B.S., M.S., Ph.D. (University of Georgia)

ROTHBERG, ROBERT A., Professor of Education

RUBIN, RONALD S., Associate Professor of Marketing
(1972), B.A., M.A., Ph.D. (University of Massachusetts)

SALTER, JOHN H. III, Assistant Professor of Accountancy
(1975), B.S., M.S., Ph.D. (Louisiana State University) C.P.A. (Florida)

SALZMANN, FRANK L., Assistant Professor of Mathematics
(1970), B.S., M.S., Ph.D. (Auburn University)

SCHIFFHORST, GERALD J., Associate Professor of English
(1970), B.S., M.A., Ph.D. (Washington University)

SCHOU, ANDREW J., Assistant Professor of Management
(1974), B.S., M.C.S., D.B.A., (Florida State University)

SCHOU, COREY, Assistant Professor of Management
(1978), B.S., M.S., Ph.D. (Florida State University)

SCHRADER, GEORGE F., Associate Dean, College of Engineering, Professor of Engineering
(1969), B.S., M.S., Ph.D. (University of Illinois, P.E. (Florida, Illinois)

SCIORTINO, PHILIP T., Assistant Professor of Education
(1977), B.S., M.B.A., M.Ed., Ph.D. (University of Notre Dame)

SHADGETT, JOHN N., Associate Professor of Education
(1971), B.S., M.S., Ed.D. (Florida State University)

SHERWOOD, HOWARD, Professor of Mathematics
(1969), B.S., M.S., Ph.D. (University of Arizona)

SHIRKEY, EDWIN C., Associate Professor of Psychology
(1971), B.A., M.A., Ph.D. (University of Wisconsin)

SHOFNER, JERRELL H., Chairman, Department of History and Professor of History
(1972), B.S., M.S., Ph.D. (Florida State University)

SIEBERT, BARRY W., Assistant Professor of Education
(1972), B.S., M.A., Ph.D. (University of North Dakota)

SIMONS, FRED O., JR., Professor of Engineering
(1972), B.S.E.E., M.S.E., Ph.D. (University of Florida), P.E. (Florida)

SKOGLUND, MARGARET, Instructor of Art
(1977), B.S., M.A. (University of Missouri)

SLAUGHTER, DAVID B., Assistant Professor, Department of Public Service Administration
(1978), B.A., J.D. (Florida State University)

SMITH, FRANCES B., Associate Professor of Nursing
(1979), B.S.N., M.N., Ed.D. (Florida State University)
SMITH, HARRY W. JR., Associate Dean, College of Humanities and Fine Arts and Professor of Theatre  
(1969), B.A., M.A., Ph.D. (Tulane University)

SMITH, WILLIAM F., Professor of Engineering  
(1968), B.A., M.S., Sc.D. (Massachusetts Institute of Technology), P.E. (Florida, California)

SNELSON, FRANKLIN F., JR., Associate Professor of Biological Sciences  
(1970), B.S., Ph.D. (Cornell University)

Snyder, Bruce R., Visiting Instructor of Engineering  
(1979), B.S., M.S. (University of Florida)

SOMERVILLE, PAUL N., Professor of Statistics  
(1972), B.Sc., Ph.D. (University of North Carolina)

SOMMER, MARGARET E., Associate Professor of English  
(1972), B.A., M.Ed., Ed.D. (University of Georgia)

SORG, STEVEN E., Assistant Professor of Education  
(1978), B.S., M.S., Ph.D. (Florida State University)

STALNAKER, FAITH K., Assistant Professor of Public Service Administration  
(1977), B.S., J.D. (University of Miami Law School)

STEARMAN, ALLYN M., Assistant Professor of Sociology  
(1976), B.A., M.A., Ph.D. (University of Florida)

STENBERG, PATRICIA J., Associate Professor of Music  
(1973), B.M., M.M., (University of Michigan)

STERN, MARK, Associate Professor of Political Science  
(1972), B.S., Ph.D. (University of Rochester)

STOUT, I. JACK, Associate Professor of Biological Sciences  
(1972), B.S., M.S., Ph.D. (Washington State University)

SULLIVAN, TIMOTHY J., Associate Professor of Education  

SULLOWAY, ALEXANDER M., Associate Professor of Education  
(1969), B.S., M.A. (University of South Florida)

SWEENEY, MICHAEL J., Associate Professor of Biological Sciences  
(1972), B.S., Ph.D. (Temple University School of Medicine)

SWEET, HAVEN C., Associate Professor of Biological Sciences  
(1971), B.S., Ph.D. (Syracuse University)

SZABO, ALBERT E., Associate Professor of Music  
(1971), B.M., M.M., Ph.D. (Michigan State University)

TANZI, LAWRENCE A., Associate Professor of Communication  
(1969), B.S.M.E., M.S., Ph.D. (Indiana University)

TAYLOR, FINLEY M., Assistant Professor of Foreign Languages  
(1970), A.B., M.A. (University of Tennessee)

TAYLOR, JAMES S., Associate Professor of Engineering  
(1977), B.S.I.E., M.S., Ph.D. (University of Florida), P.E. (Florida)

TAYLOR, K. PHILLIP, Professor of Communication  
(1970), B.A., Ph.D. (Indiana University)

TAYLOR, MICHAEL D., Associate Professor of Mathematics  
(1968), B.A., M.S., Ph.D. (Florida State University)
TAYLOR, WALTER K., Associate Professor of Biological Sciences (1969), B.S., M.S., Ph.D. (Arizona State University)

TEEPLE, EUGENE E., Professor of Marketing (1968), B.S., M.B.A., D.B.A. (University of Oregon)

TELL, PHILLIP M., Associate Professor of Psychology (1969), B.A., M.A., Ph.D. (University of Virginia)

TESORI, ANTHONY P., Director, Brevard Campus and Professor of Education (1970), B.S., M.A., Ed.D. (New York University)

THOMAS, MARGARET H., Professor of Psychology (1971), B.A., M.A., Ph.D. (Tulane University)

THOMPSON, RICHARD A., Professor of Education (1969), B.S., M.S. Ed.D., (Ball State University)

TOLER, DONNA J., Assistant Professor of Education (1978), B.S., M.S., Ed.D. (Indiana University)

TOWLE, HERBERT C., Professor of Engineering (1970), B.S.E., M.S.E., Ph.D. (University of Michigan), P.E. (Florida, New York)

TROPF, WALTER D., Assistant Professor of Sociology (1972), B.A., M.S.W. (University of Michigan)

TUCKER, RICHARD D., Chairman, Department of Psychology and Associate Professor of Psychology (1972), A.B., M.A., Ph.D. (Emory University)

UMPHREY, ROBERT E., Professor of English (1970), B.A., M.A., Ph.D. (University of Washington)

UNKOVIC, CHARLES M., Professor of Sociology (1968), B.A., M.A., Ph.D. (University of Pittsburgh)

VEIT, E. THEODORE, Assistant Professor of Finance (1978), B.S., M.S., Ph.D. (University of Arkansas)

VENTRE, GERARD G., Associate Professor of Engineering (1969), As.E., M.S., Ph.D. (University of Cincinnati), P.E. (Florida)

VICKERS, DAVID H., Chairman, Department of Biological Science and Associate Professor of Biological Sciences (1969), B.S., M.S., Ph.D. (Louisiana State University)

WAITS, CHARLES H., Assistant Professor of Education (1978), B.S., M.Ed., Ed.D. (University of Georgia)

WALKER, ROBERT L., Professor of Engineering (1972), B.S., M.S., Ph.D. (Stanford University), P.E. (Florida)

WALL, DONALD B., Associate Professor of Engineering (1968), B.S.M.E., M.S., Ph.D. (Georgia Institute of Technology), P.E. (Florida, Georgia, South Carolina)

WALLACE, RONALD L., Assistant Professor of Sociology (1975), B.A., M.A., Ph.D. (University of Florida)

WANDO, JOYCE S., Assistant Professor of Sociology (1976), B.A., M.A., M.S.W. (University of Pennsylvania)

WANIELISTA, MARTIN P., Chairman, Department of Civil Engineering and Environmental Sciences and Professor of Engineering (1970), B.S.C.E., M.S., Ph.D. (Cornell University), P.E. (Florida)
WASHINGTON, DAVID W., Assistant Professor of Biological Sciences
(1974), B.S., M.S., Ph.D. (Texas A & M University)

WASHINGTON, JOHN T., Assistant Professor of Sociology
(1975), B.G.S., M.Ed., Ph.D. (University of Florida)

WEHR, PAUL W., Professor of History
(1969), A.B., M.A., Ph.D. (Ball State University)

WEHRLE, A. L., Chairman, Department of Military Science and Professor of Military Science
(1978), B.S., M.A. (Ball State University)

WEIDENHEIMER, RUTH E., Professor of Education
(1969), B.S., M.S., Ed.D. (Teachers College, Columbia University)

WELLMAN, CHARLES W., Acting Chairman, Department of Art and Associate Professor of Art

WELLS, THOMAS F., Provisional Instructor of Engineering
(1979), B.S. (Florida State University)

WELSCH, ANNE W., Assistant Professor of Theatre

WEST, GAIL B., Associate Professor of Education
(1970), B.A., M.A., Ph.D. (Florida State University)

WHISLER, BRUCE A., Assistant Professor of Music
(1971), B.A., Ph.D. (University of Rochester)

WHISLER, MARILYN W., Associate Professor of Political Science
(1971), B.A., M.A., Ph.D. (University of Wisconsin)

WHITE, CHARLES J., Visiting Assistant Professor of Engineering
(1977), B.S.A.E., B.S.E. (University of Central Florida), P.E. (Florida)

WHITE, HOLLICE R., Assistant Professor of Aerospace Studies
(1978), B.A., M.Ed. (Georgia State University)

WHITE, KENNETH R., Associate Professor of Economics
(1966), B.S., Ph.D. (University of Oklahoma)

WHITE, ROSEANN S., Associate Professor of Biological Sciences
(1969), B.S., Ph.D. (University of Texas)

WHITEHOUSE, GARY E., Chairman Department of Industrial Engineering and Management Systems and Professor of Engineering
(1975), B.S.I.E., M.S.I.E., Ph.D. (Arizona State University), P.E. (Florida, Pennsylvania)

WHITTIER, HENRY O., Professor of Biological Sciences
(1968), B.S.Ed., M.A., Ph.D. (Columbia University)

WIENCLAW, RUTH A., Assistant Professor of Psychology
(1979), B.A., M.A., Ph.D. (Memphis State)

WILLIAMS, ARTIE G., Instructor of Education
(1979), B.S., M.Ed. (University of Florida)

WILSON, JAMES, Visiting Associate Professor of Management
(1968), B.S., M.S. (Illinois State University)

WINCHESTER, JACKSON L., Instructor in Economics
(1971), A.B., M.A., M.B.A., M.S. (University of Southern California)

WODZINSKI, RUDY J., Professor of Biological Sciences
(1970), B.S., M.S., Ph.D. (University of Wisconsin)
WOLF, J. GARY, Chairman, Department of Music and Professor of Music  
(1972), B.M.Ed., M.M., D.M.A. (Eastman School of Music)  

WOOD, ALEXANDER T., Associate Professor of Education  
(1969), B.A., M.S., Ph.D. (Florida State University)  

WORBS, HELMUTH E., Visiting Assistant Professor of Engineering  
(1979), B.S.M.E., M.S.M.E. (Stanford University), P.E. (Florida, California)  

WORKMAN, DAVID A., Assistant Professor of Computer Science  
(1976), B.S., M.S., Ph.D. (University of Iowa)  

WORRELL, LEWIS T., Instructor of Respiratory Therapy  
(1976), RRT, B.S. (University of Central Florida)  

WRANCHER, ELIZABETH A., Associate Professor of Music  
(1974), B.M. (Indiana University) Prima Soprano Koblenz, Augsburg and Detmold  

WRIGHT, BURTON, Professor of Sociology  
(1970), B.S., M.S., Ph.D. (Florida State University)  

WYATT, WYATT L., Professor of English  
(1970), B.A., M.A. (Columbia University)  

WYCOFF, EDGAR B., Associate Professor of Communication  
(1972), B.S., M.B.A., Ph.D. (Florida State University)  

XANDER, JAMES A., Associate Professor of Economics  
(1969), B.S., Ph.D. (University of Georgia)  

YOUNG, WILLIAM W., Professor of Public Service Administration  
(1969), A.B., M.A., Ph.D. (University of Pittsburgh)  

YOUSEF, A., Professor of Engineering and Director, Environmental Systems Engineering Institute  
(1970), B.S.C.E., M.S., Ph.D. (University of Texas), P.E. (Florida, Texas)  

FACULTY WITH EMERITUS STATUS  
CRAIG, ALBERT  
(1970), B.S., M.A., Ed.D. (Florida State University)  
Professor Emeritus of Education  

LYTLE, ERNEST J.  
(1968), B.S., M.A., Ph.D. (University of Florida)  
Professor Emeritus of Mathematical Sciences  

HONORARY DEGREES AWARDED  
December, 1969  
Kurt H. Debus, Doctor of Engineering Science  
William H. Dial, Doctor of Commercial Science  
John W. Young, Doctor of Applied Science  
Louis C. Murray, Doctor of Public Service  
Fred Elmo Clayton, Doctor of Professional Engineering  
Richard F. Livingston, Doctor of Business Administration  

356
COURTESY APPOINTMENTS

ALBERT, JONATHON C., RRT. Clinical Faculty, Respiratory Therapy, and Director Inservice Education, Cardiopulmonary Therapy, Orlando Regional Medical Center
B.S. (University of Central Florida)

BALDWIN, ERIKA, Clinical Faculty, Medical Record Administration, Winter Park Hospital
B.S. (Florida Technological University)

BASSETT, BRUCE H., Clinical Faculty, Respiratory Therapy and Supervisor of Sterilization, Repair and Maintenance, Cardiopulmonary Therapy Department, Orlando Regional Medical Center
A.A. (Valencia Community College)

BRIDGES, WILLIAM D., Clinical Faculty, Respiratory Therapy, and Supervisor Respiratory Therapy Department, Lucerne General Hospital
A.S. (Valencia Community College)

CALABRESE, ANTHONY S., Clinical Faculty, Radiologic Sciences, Holiday Hospital
B.S. M.D. (Northwestern University)

CAPRAUN, LYNN W., Clinical Faculty, Respiratory Therapy and Director, Respiratory Therapy Program, Valencia Community College
RRT, B.S., M.S. (University of Central Florida)

CARLETON, CHARLES C., Clinical Faculty, Medical Technology, Winter Park Memorial Hospital
M.D. (McGill University)

CARR, EDWARD O., Clinical Faculty, Medical Technology and Managing Director, Central Florida Blood Bank
S.B.B., M.T. (ASCP), B.S. (Mississippi State)

CHARIKER, SUSAN E., RRT. Clinical Faculty, Respiratory Therapy
B.S. (University of Central Florida)

DOYLE, BOB, CRTT. Clinical Faculty, Respiratory Therapy, and Staff Therapist, Lucerne General Hospital
A.S. (Valencia Community College)

FROST, LINDA L., RRT. Clinical Faculty, Respiratory Therapy, and Staff Therapist, Lucerne General Hospital
A.S. (State University of New York, Upstate Medical Center)

HALL, MICHAEL R., RRT. Clinical Faculty Respiratory Therapy, and Floor Supervisor, Orlando Regional Medical Center
B.S. (University of Central Florida)

HALL, IRA, T., JR., Clinical Faculty, Radiologic Sciences and Chief Radiologic Technologist, Halifax Hospital Medical Center
RT (ARRT)

HESS, JOHN C., RRT. Clinical Faculty, Respiratory Therapy, and Assistant Technical Director, Cardiopulmonary Department, Orlando Regional Medical Center.
B.S. (University of Central Florida)

HINKLE, LEWIS O., Clinical Faculty Radiologic Sciences and Director of Radiologic Technology Program, Halifax Hospital Medical Center
RT (ARRT), B.S. (Alderson Broaddus College)

HOLCOMB, RODNEY F., Clinical Faculty, Medical Technology, Florida Hospital
M.D. (Tulane University)

HOLLON, ANN, Clinical Faculty, Radiologic Sciences and Supervisor, Radiation Therapy, Halifax Hospital Medical Center
RT (ARRT)
JACKSON, ROBERTA JEANNE, Clinical Faculty, Medical Record Administration and Director, Medical Record Department, Holiday Hospital

KALE, HERBERT W., II., Adjunct Assistant Professor of Biological Sciences, Vice-President Ornithological Research Division, Florida Audubon Society, Vero Beach
Ph.D. (University of Georgia)

KERNODLE, BETTY W., Clinical Faculty, Medical Record Administration and Director, Medical Record Department, Orange Memorial Hospital
RRA, A.B. (Duke University)

KLOTZ, SOL D., Adjunct Professor of Biological Sciences Allergist, Orlando
B.S., M.S., M.D. (New York Medical College)

KRONMAN, BARRY S., Clinical Faculty, Communicative Disorders, Private Practice Otolaryngology
A.B., M.D., (New York University)

LAWLESS, WILLIAM W., RRT. Clinical Faculty, Respiratory Therapy, and Chief Therapist, Neonatal Intensive Care, Orlando Regional Medical Center
A.S. (Valencia Community College)

LESSARD, THERESA M., RRT. Clinical Faculty, Respiratory Therapy, and Staff Critical Care Therapist, Lucerne General Hospital
B.S. (University of Central Florida)

LIPSIT, LALA A., Clinical Faculty, Medical Technology and Coordinator, Blood Bank School, Central Florida Blood Bank, Orlando
S.B.B., MT (ASCP), B.A., (Florida State University)

MARVIN, PAUL W., Clinical Faculty, Radiologic Sciences, Halifax Hospital Medical Center
B.S., M.S. (Bucknell University)

MAURER, DAVID A., Clinical Faculty, Medical Technology and Director of Laboratories, Winter Park Memorial Hospital
M.D. (Tulane University)

MEAD, MARY J., Clinical Faculty, Medical Record Administration, Halifax Hospital
RRA

MOORES, LINDA, Clinical Faculty, Medical Record Administration, Lucerne Hospital
ART

MURTOLA, STEPHEN, CRTT. Clinical Faculty, Respiratory Therapy, and Floor Supervisor, Cardiopulmonary Therapy Department, Orlando Regional Medical Center
A.S. (Valencia Community College)

PHILLIPS, HANCE C., Clinical Faculty, Communicative Disorder, Private Practice, Otolaryngology
B.A., M.D. (Northwestern University)

PORTER, EDWARD L., RRT. Clinical Faculty, Respiratory Therapy, and Director, Respiratory Therapy Department, Lucerne General Hospital.
B.S. (University of Central Florida)

PRITCHARD, PETER C. H., Adjunct Assistant Professor of Biological Sciences Vice President — Science and Research, Florida Audubon Society, Maitland
B.A., M.A., Ph.D. (University of Florida)

ROGERS, PATRICIA W., Clinical Faculty, Medical Technology and Coordinator, School of Medical Technology, Florida Hospital
S.B.B., MT (ASCP), B.S. (East Tennessee State University)
ROGERS, ROBERT L. JR., RRT. Clinical Faculty, Respiratory Therapy, and Administrative Director, Cardiopulmonary Therapy Department, Orlando Regional Medical Center
B.S. (University of Central Florida)

SCHATZMAN, RICHARD C., Clinical Faculty, Respiratory Therapy, and Chief Respiratory Therapist, Adult and Pediatric Critical Care, Orlando Regional Medical Center
B.S. (University of Central Florida)

SHIDELER, ROBERT S., RRT. Clinical Faculty, Respiratory Therapy, and Program Director, Respiratory Therapy Technician Vocational Program, Seminole Community College
B.S. (University of Central Florida)

SNYDER, ROBERT C., Medical Director, Respiratory Therapy Program
B.S., M.D. (University of Pittsburgh)

SOLOMON, CHARLES, Clinical Faculty, Communicative Disorders, E.N.T. Clinic, Naval Training Center Hospital, Orlando
B.A., M.A. (Florida Technological University)

STREETMAN, DEWEY E., CRTT. Clinical Faculty, Respiratory Therapy, and Assistant Technical Director of Education at Lucerne General Hospital
B.S. (University of Central Florida)

TAYLOR, JOHN H., CRTT. Clinical Faculty, Respiratory Therapy, and Critical Care Therapist, Lucerne General Hospital
A.S. (Valencia Community College)

VAN HOOK JOHN J., Clinical Faculty, Respiratory Therapy, Regional Medical Center
RRT, M.M.E. (University of Florida)

VARRAUX, ALAN R., Clinical Faculty, Respiratory Therapy, Florida Hospital
B.S., M.D. (Temple University)

VOGT, MICHAEL E., Clinical Faculty, Respiratory Therapy, and Critical Care Therapist, Lucerne General Hospital
B.S. (University of Central Florida)

WALSH, ANTHONY, Clinical Faculty, Medical Technology and Director of Microbiology, Orange Memorial Hospital
Ph.D. (University of Florida)

WARDELL, BARBARA J., Clinical Faculty, Medical Technology and Coordinator, School of Medical Technology, Orange Memorial Hospital
MT (ASCP), B.S. (Marshall University)

WEBB, JAMES M., RRT. Clinical Faculty, Respiratory Therapy, and Director, Department of Respiratory Therapy, Florida Hospital
B.S. (Loma Linda University)

WILLARD, BEN C., Clinical Faculty, Medical Technology and Director of Medical Laboratories, Orange Memorial Hospital
M.D. (Tulane University)

WILSON, HOBSOON L., Clinical Faculty, Communicative Disorders, Private Practice, Otolaryngology
M.D. (Indiana University)

WOODCOCK, JUNE. Clinical Faculty, Medical Record Administration, Mercy Hospital
B.S. (University of Central Florida)
INDEX

AA Degree .............................................. 43
Academic Affairs ........................................ 4
Calendar .................................................. 11
Load-Graduate ........................................... 58
 Policies ............................................... 31
 Probation ............................................... 50
 Standing .................................................. 48
Terms and Actions —
 Defined ................................................... 50
 Warning ................................................... 50
Accountancy ................................................. 66
Accreditation General .................................... 17, 33
College of Business Administration .................. 64
 Education ............................................... 79
 Engineering ............................................ 104-107
 Health ................................................... 121, 125, 127
 Add/ Drop Policy ......................................... 48
Administration Business Affairs ......................... 5
 Community Relations .................................... 5
 Policies ................................................... 31
 Public .................................................... 198
 Public Service .......................................... 197
Student Affairs ........................................... 21
UCF ......................................................... 4
Admissions Undergraduate .................................. 31
 Early Admission ......................................... 39
 Graduate .................................................. 54
Admissions and Standards Committee .................. 33
 Advanced Placement Program .......................... 39
 Advisement ............................................. 11-14, 21, 25
Aerospace .................................................. 183
Afro-American Studies .................................. 133
Air Force (See Aerospace) ................................ 183
Allied Health Sciences (See Health Sciences) ....... 118
Allied Legal Service ..................................... 197
American Council on Education ......................... 32
Anatomy, Human ......................................... 335
 Anthropology ............................................ 200
 Appeal ..................................................... 50
 Graduate .................................................. 56
Applicant Freshman and Transfer ......................... 31
 Graduate .................................................. 54
Application for Admission Deadline ...................... 33
 Reactivation .............................................. 34
Readmission .............................................. 34
Application for Degree Baccalaureate .................... 52
 Graduate .................................................. 56
 Deadline .................................................. 52
Army ROTC ............................................... 185
Art ........................................................... 134
Associate of Arts Degree ................................ 43
Astronomy-Physics ........................................ 226
Athletics, Campus ......................................... 4, 19, 28
Auditors ................................................... 35
Audiovisual Services ....................................... 19
Audit Students ............................................ 35, 49
Average Overall ......................................... 50
Quarter .................................................... 50
UCF ......................................................... 50
Bachelors (or Baccalaureate) Degree ....................... 43
Biological Sciences ....................................... 157
Biology ..................................................... 158
Biology of Fishes Ichthyology .......................... 335
Board of Education — State of Florida ................ 3
Board of Regents — State of Florida .................... 3
Bookstore .................................................. 20
Botany ...................................................... 158
Broadcasting ............................................... 190
Bryology ................................................... 227
Budgets, Estimated College ................................ 24
Business Administration College of ....................... 64
 Common Body of Knowledge ........................... 65
Specializations in Accountancy ......................... 66
 Business Administration ............................... 69
 Economics ................................................. 67
 Finance .................................................... 68
 Management .............................................. 69
 Marketing .................................................. 70
Graduate Programs ........................................ 72
Business Education ........................................ 85
Business Law ............................................... 229
Calendar ................................................... 11
Campus ..................................................... 16
Athletics ................................................... 19
Map .......................................................... 9
Campuses ................................................... 16
Catalog-Graduation Requirements ......................... 42
Ceramics ................................................... 136
Certification for Teaching —
 Education ................................................ 45, 79
Checks, Personal ......................................... 30
Chemistry .................................................. 159
Child Care Center ........................................ 27
Civil Engineering ......................................... 103
Civilistics-Forensic Science ................................ 161
Classification by Quarter Hours ........................ 48
Classroom Responsibility ............................... 28
<table>
<thead>
<tr>
<th>Course</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elect. Engr. &amp; Comm. Sci.</td>
<td>105</td>
</tr>
<tr>
<td>Engr. Core</td>
<td>103</td>
</tr>
<tr>
<td>Engr. Math &amp; Com. Sys.</td>
<td>106</td>
</tr>
<tr>
<td>Engr. Technology</td>
<td>101, 109</td>
</tr>
<tr>
<td>Environmental Sys. Mgmt.</td>
<td>103</td>
</tr>
<tr>
<td>Graduate Programs</td>
<td>114</td>
</tr>
<tr>
<td>Ind. Engr. &amp; Mgmt. Sys.</td>
<td>107</td>
</tr>
<tr>
<td>English</td>
<td>137</td>
</tr>
<tr>
<td>Entrance Requirements</td>
<td>31, 54</td>
</tr>
<tr>
<td>Environmental Sciences —</td>
<td>103</td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
</tr>
<tr>
<td>Environmental Studies</td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>60</td>
</tr>
<tr>
<td>Advanced</td>
<td>61</td>
</tr>
<tr>
<td>Ethnobotany</td>
<td>227</td>
</tr>
<tr>
<td>Examination (see Tests)</td>
<td></td>
</tr>
<tr>
<td>Exceptional Child Education</td>
<td>81</td>
</tr>
<tr>
<td>Exclusion</td>
<td>50</td>
</tr>
<tr>
<td>Expenses</td>
<td>24, 29, 30</td>
</tr>
<tr>
<td>Extended Studies, College of</td>
<td>16</td>
</tr>
<tr>
<td>Florida</td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>337</td>
</tr>
<tr>
<td>Faculty, Emeritus</td>
<td>356</td>
</tr>
<tr>
<td>Fees</td>
<td>29, 30</td>
</tr>
<tr>
<td>Film</td>
<td>189</td>
</tr>
<tr>
<td>Finance</td>
<td>68</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>22</td>
</tr>
<tr>
<td>Financial Obligations —</td>
<td></td>
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<tr>
<td>Past Due Accounts</td>
<td>30</td>
</tr>
<tr>
<td>Five Week Quarter</td>
<td>46</td>
</tr>
<tr>
<td>Florida Resident —</td>
<td>36</td>
</tr>
<tr>
<td>Defined</td>
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</tr>
<tr>
<td>Florida State-Wide Twelfth</td>
<td>31</td>
</tr>
<tr>
<td>Grade Test</td>
<td></td>
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<td>Food Services</td>
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<tr>
<td>Foreign Languages</td>
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<td>French</td>
<td>140</td>
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<td>271</td>
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<td>Italian</td>
<td>275</td>
</tr>
<tr>
<td>Latin</td>
<td>277</td>
</tr>
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<td>Russian</td>
<td>141</td>
</tr>
<tr>
<td>Spanish</td>
<td>140</td>
</tr>
<tr>
<td>Forensic Science —</td>
<td></td>
</tr>
<tr>
<td>Chemistry Dept.</td>
<td>161</td>
</tr>
<tr>
<td>Forgiveness Policy</td>
<td>48</td>
</tr>
<tr>
<td>Foundation, UCF</td>
<td>17</td>
</tr>
<tr>
<td>French</td>
<td>140</td>
</tr>
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<td>Full-Time Student</td>
<td>49</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Requirements</td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>51</td>
</tr>
<tr>
<td>General Equivalency Diploma</td>
<td>31</td>
</tr>
<tr>
<td>(GED)</td>
<td></td>
</tr>
<tr>
<td>General Studies</td>
<td>61</td>
</tr>
<tr>
<td>Geography</td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>271</td>
</tr>
<tr>
<td>Plant (BOT 4623)</td>
<td>227</td>
</tr>
<tr>
<td>Social</td>
<td>271</td>
</tr>
<tr>
<td>Also, see Meteorology</td>
<td>313</td>
</tr>
<tr>
<td>Geology</td>
<td>272</td>
</tr>
<tr>
<td>German</td>
<td>271</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>46</td>
</tr>
<tr>
<td>Grading System</td>
<td>46</td>
</tr>
<tr>
<td>Graduate Procedures Manual</td>
<td>56</td>
</tr>
<tr>
<td>Graduate Programs</td>
<td></td>
</tr>
<tr>
<td>Accountancy</td>
<td>75</td>
</tr>
<tr>
<td>Applied Sociology</td>
<td>209</td>
</tr>
<tr>
<td>Biological Science</td>
<td>176</td>
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<td>73</td>
</tr>
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<td>205</td>
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<tr>
<td>Communication</td>
<td>204</td>
</tr>
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<td>Communication Disorders</td>
<td>129</td>
</tr>
<tr>
<td>Computer Science</td>
<td>179</td>
</tr>
<tr>
<td>Economics, Applied</td>
<td>76</td>
</tr>
<tr>
<td>Education</td>
<td>96</td>
</tr>
<tr>
<td>Engineering</td>
<td>114</td>
</tr>
<tr>
<td>English</td>
<td>152</td>
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<td>Environment Systems</td>
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</tr>
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<td>Management</td>
<td>117</td>
</tr>
<tr>
<td>Guidance</td>
<td>97</td>
</tr>
<tr>
<td>History</td>
<td>153</td>
</tr>
<tr>
<td>Industrial Chemistry</td>
<td>178</td>
</tr>
<tr>
<td>Industrial Psychology</td>
<td>206</td>
</tr>
<tr>
<td>Mathematical Science</td>
<td>180</td>
</tr>
<tr>
<td>Public Policy</td>
<td>207</td>
</tr>
<tr>
<td>School Psychology</td>
<td>98</td>
</tr>
<tr>
<td>Grad. Management Admissions</td>
<td></td>
</tr>
<tr>
<td>Test (GMAT)</td>
<td>72</td>
</tr>
<tr>
<td>Graduate Record Examination</td>
<td></td>
</tr>
<tr>
<td>(GRE)</td>
<td>56</td>
</tr>
<tr>
<td>Graduate Studies</td>
<td></td>
</tr>
<tr>
<td>Admission to</td>
<td>54</td>
</tr>
<tr>
<td>Regular Status</td>
<td>48, 55</td>
</tr>
<tr>
<td>Graduation Process, Steps in</td>
<td>52</td>
</tr>
<tr>
<td>Degree Requirements — University</td>
<td>42, 60</td>
</tr>
<tr>
<td>Requirements — Catalog</td>
<td></td>
</tr>
<tr>
<td>Choice</td>
<td>42</td>
</tr>
<tr>
<td>Responsibility</td>
<td>42</td>
</tr>
<tr>
<td>Grants</td>
<td>22</td>
</tr>
<tr>
<td>Guidance</td>
<td>97</td>
</tr>
<tr>
<td>Handicapped Student Services</td>
<td>19, 27</td>
</tr>
<tr>
<td>Health</td>
<td></td>
</tr>
<tr>
<td>Record</td>
<td>36</td>
</tr>
<tr>
<td>Sciences</td>
<td>118, 120</td>
</tr>
<tr>
<td>Services</td>
<td>22</td>
</tr>
<tr>
<td>Education</td>
<td>83</td>
</tr>
<tr>
<td>Health, College of</td>
<td>118</td>
</tr>
<tr>
<td>Communicative Disorders</td>
<td>118, 129</td>
</tr>
<tr>
<td>Medical Record Administration</td>
<td>120</td>
</tr>
<tr>
<td>Medical Technology</td>
<td>122</td>
</tr>
<tr>
<td>Nursing</td>
<td>124</td>
</tr>
<tr>
<td>Radiologic Sciences</td>
<td>125</td>
</tr>
<tr>
<td>Respiratory Therapy</td>
<td>127</td>
</tr>
<tr>
<td>Herpetology</td>
<td>335</td>
</tr>
<tr>
<td>High School Equivalency</td>
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<td>Diploma</td>
<td>31</td>
</tr>
<tr>
<td>History</td>
<td>142</td>
</tr>
</tbody>
</table>

362
<table>
<thead>
<tr>
<th>Course</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Honorary Degrees</td>
<td>356</td>
</tr>
<tr>
<td>Honors</td>
<td>47</td>
</tr>
<tr>
<td>Hours</td>
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</tr>
<tr>
<td>Coding for Course Description</td>
<td>216</td>
</tr>
<tr>
<td>Quarter</td>
<td>46,216</td>
</tr>
<tr>
<td>Housing Policy</td>
<td>21</td>
</tr>
<tr>
<td>Humanities</td>
<td>131</td>
</tr>
<tr>
<td>Humanities &amp; Fine Arts, College of</td>
<td>131</td>
</tr>
<tr>
<td>Art</td>
<td>134</td>
</tr>
<tr>
<td>Ceramics</td>
<td>136</td>
</tr>
<tr>
<td>English</td>
<td>137</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>135</td>
</tr>
<tr>
<td>Foreign Languages</td>
<td>139</td>
</tr>
<tr>
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</tr>
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<td>271</td>
</tr>
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<td>275</td>
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</tr>
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<td>152</td>
</tr>
<tr>
<td>History</td>
<td>142</td>
</tr>
<tr>
<td>Humanities</td>
<td>142</td>
</tr>
<tr>
<td>HFA-Administration Program</td>
<td>132</td>
</tr>
<tr>
<td>Music</td>
<td>146</td>
</tr>
<tr>
<td>Philosophy</td>
<td>142</td>
</tr>
<tr>
<td>Pre-Law</td>
<td>131</td>
</tr>
<tr>
<td>Religion</td>
<td>142</td>
</tr>
<tr>
<td>Theatre</td>
<td>151</td>
</tr>
<tr>
<td>Ichthyology</td>
<td>335</td>
</tr>
<tr>
<td>Incomplete Grade</td>
<td>47</td>
</tr>
<tr>
<td>Independent Study</td>
<td>39, 215</td>
</tr>
<tr>
<td>Industrial</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>178</td>
</tr>
<tr>
<td>Engineering</td>
<td>107</td>
</tr>
<tr>
<td>Psychology</td>
<td>206</td>
</tr>
<tr>
<td>Institutional Purpose</td>
<td>15</td>
</tr>
<tr>
<td>Instructional Resources</td>
<td>19</td>
</tr>
<tr>
<td>Intercollegiate Athletics</td>
<td>19</td>
</tr>
<tr>
<td>International Students</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>35</td>
</tr>
<tr>
<td>Italian</td>
<td>275</td>
</tr>
<tr>
<td>Journalism</td>
<td>189</td>
</tr>
<tr>
<td>Junior College Transfers</td>
<td>32</td>
</tr>
<tr>
<td>Kindergarten Education</td>
<td>81</td>
</tr>
<tr>
<td>Language Examinations</td>
<td>140</td>
</tr>
<tr>
<td>Language Placement</td>
<td>139</td>
</tr>
<tr>
<td>Late Fees</td>
<td>29</td>
</tr>
<tr>
<td>Latin</td>
<td>277</td>
</tr>
<tr>
<td>Law Enforcement</td>
<td></td>
</tr>
<tr>
<td>See Criminal Justice</td>
<td></td>
</tr>
<tr>
<td>Legal Services, Allied</td>
<td>197</td>
</tr>
<tr>
<td>Libraries</td>
<td></td>
</tr>
<tr>
<td>Educational Media</td>
<td>94</td>
</tr>
<tr>
<td>Services</td>
<td>19</td>
</tr>
<tr>
<td>University</td>
<td>18</td>
</tr>
<tr>
<td>Limnology</td>
<td>158</td>
</tr>
<tr>
<td>Loans, Student</td>
<td>22</td>
</tr>
<tr>
<td>Magna Cum Laude</td>
<td>47</td>
</tr>
<tr>
<td>Mammalogy</td>
<td>336</td>
</tr>
<tr>
<td>Management</td>
<td>69</td>
</tr>
<tr>
<td>Maps</td>
<td></td>
</tr>
<tr>
<td>Campus</td>
<td>9</td>
</tr>
<tr>
<td>Orlando area</td>
<td>8</td>
</tr>
<tr>
<td>Marketing</td>
<td>70</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>44</td>
</tr>
<tr>
<td>Mathematical Sciences</td>
<td>156</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>108</td>
</tr>
<tr>
<td>Medical History Report</td>
<td>36</td>
</tr>
<tr>
<td>Medical Record Administration</td>
<td>120</td>
</tr>
<tr>
<td>Medical Technology</td>
<td>122</td>
</tr>
<tr>
<td>Meteorology</td>
<td>313</td>
</tr>
<tr>
<td>Microbiology</td>
<td>158</td>
</tr>
<tr>
<td>Minor (Also Consult Department)</td>
<td>53</td>
</tr>
<tr>
<td>Music (Also Consult Department)</td>
<td></td>
</tr>
<tr>
<td>Natural Sciences</td>
<td></td>
</tr>
<tr>
<td>College of</td>
<td>156</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>157</td>
</tr>
<tr>
<td>Biology</td>
<td>158</td>
</tr>
<tr>
<td>Botany</td>
<td>158</td>
</tr>
<tr>
<td>Limnology</td>
<td>158</td>
</tr>
<tr>
<td>Microbiology</td>
<td>159</td>
</tr>
<tr>
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<td>159</td>
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<td>159</td>
</tr>
<tr>
<td>Forensic Science</td>
<td>161</td>
</tr>
<tr>
<td>Computer Science</td>
<td>163</td>
</tr>
<tr>
<td>Graduate Programs</td>
<td>44</td>
</tr>
<tr>
<td>Mathematical Sciences</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>168</td>
</tr>
<tr>
<td>Statistics</td>
<td>168, 170</td>
</tr>
<tr>
<td>Physics</td>
<td>171</td>
</tr>
<tr>
<td>Preprofessional</td>
<td>173</td>
</tr>
<tr>
<td>Predental</td>
<td>174</td>
</tr>
<tr>
<td>Premedical</td>
<td>174</td>
</tr>
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<td>174</td>
</tr>
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<td>Prepharmacy</td>
<td>174</td>
</tr>
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<td>Prepodiatry</td>
<td>173</td>
</tr>
<tr>
<td>Preveterinary</td>
<td>174</td>
</tr>
<tr>
<td>Non-Degree Student</td>
<td>35, 49</td>
</tr>
<tr>
<td>Nursery-Early Childhood</td>
<td></td>
</tr>
<tr>
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<td>81</td>
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<td>124</td>
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<tr>
<td>Orientation</td>
<td>21</td>
</tr>
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<td>Orlando Vicinity Map</td>
<td>8</td>
</tr>
<tr>
<td>Ornithology</td>
<td>335</td>
</tr>
<tr>
<td>Out-of-State Students</td>
<td>23, 29</td>
</tr>
<tr>
<td>Overall Average-Defined</td>
<td>50</td>
</tr>
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<td>Vicinity Map</td>
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</tbody>
</table>
NOTES
UNIVERSITY OF
CENTRAL FLORIDA
P. O. Box 25000
Orlando, Florida 32816

COLLEGES OF:
Business Administration
Education
Engineering
Health

Humanities and Fine Arts
Natural Sciences
Social Sciences