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Accent on Learning, 1971

University of South Florida

USF BULLETIN

UNIVERSITY OF SOUTH FLORIDA

ACCENT ON LEARNING 1971-72

Accent on Learning

GENERAL CATALOG
of the
UNIVERSITY OF SOUTH FLORIDA
1971-72

Vol. 13, No. 3 USF BULLETIN March, 1971

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VISITING THE UNIVERSITY

Prospective students are invited to visit the University whenever possible. Many offices, including the Admissions Office, receive visitors only from 9:30 a.m. to 4:00 p.m. Monday through Friday. Given advance notice, the Admissions Office will arrange tour guides for visiting groups.

The University is located on Fowler Avenue (State Route 582) approximately two miles east of Interstate 75 and Nebraska Avenue (U.S. Route 41) and seven miles north of Interstate 4.

CORRESPONDENCE

Correspondence regarding various phases of the University program should be directed as follows:

Application and admission information
Office of Admissions

Conferences and workshops (non-credit)
Center for Continuing Education

Courses and programs for freshmen
Office of the Dean, College of Basic Studies

Courses and programs for upperclassmen and graduates
Office of the Dean of the appropriate college

Financial assistance
Director of Financial Aids

Graduate study
Office of the Dean of the appropriate college

Gifts and bequests
University of South Florida Foundation

Facilities for handicapped students
Dean of Student Affairs

Housing assistance
Housing Office, Auxiliary Services

Placement and employment
Career Planning & Placement Service

Transcripts and records
Office of Records & Registration

General Information
Office of Information Services

Registration Information
Office of Records & Registration

University of South Florida
Tampa, Florida 33620
University Telephone: 974-2011
(Area Code 813)

University of South Florida at St. Petersburg
830 First Street South
St. Petersburg, Florida 33701
Phone: (813) 898-7411

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The University of South Florida reserves the right to withdraw or change the announcements and information included in this Bulletin without notice.

ACADEMIC

QUARTER IV, 1970-71

Note: *Dates apply to full 9-week term. See quarterly Schedule of Classes for appropriate dates for 3- and 6-week sessions.*

May 12, *Wednesday*	**Last day to apply for admission or re-admission**
June 14, *Monday*	Registration by appointment
June 14, *Monday*	Last day to cancel and receive full refund of registration fees (see section on "REFUNDS")
June 15, *Tuesday*	Classes begin
June 17, *Thursday*	Last day to withdraw and/or drop and receive partial refund of registration fees (see section on "REFUNDS")
July 5, *Monday*	Independence Day Holiday
July 6, *Tuesday*	Last day to remove an "X" grade. Official forms must be in Registrar's Office by this date
July 6, *Tuesday*	Last day to apply for a degree to be earned at the end of Quarter IV, 1970-71
July 16, *Friday*	Last day to drop courses without penalty
July 23, *Friday*	Last day to withdraw without penalty
August 13, *Friday*	End of Quarter IV

QUARTER I, 1971-72

August 20, *Friday*	**Last day to apply for admission or re-admission**
September 12, *Sunday*	First day for orientation
September 14,15, 16 *Tues., Wed., Thurs.*	Registration by appointment
September 19, *Sunday*	Last day to cancel and receive full refund of registration fees (see section on "Refunds")
September 20, *Monday*	Classes begin
September 24, *Friday*	Last day to add courses
September 24, *Friday*	Last day to withdraw and/or drop and receive full refund of registration fees
September 24, *Friday*	Last day for late registration (see late registration fee)
October 4, *Monday*	Last day to register for Continuing Education
October 4, *Monday*	Last day for Continuing Education Refund
October 8, *Friday*	Last day to apply for a degree to be earned at the end of Quarter I, 1971-72
October 29, *Friday*	Last day to drop courses without penalty
November 12, *Friday*	Last day to withdraw without penalty
November 25-26, *Thurs., Fri.*	Thanksgiving Day Holiday
December 3, *Friday*	End of Quarter I

CALENDAR

QUARTER II, 1971-72

December 6, *Monday*	**Last day to apply for admission or re-admission**
January 3, 4, *Mon., Tues.*	Registration by appointment
January 5, *Wednesday*	Last day to cancel and receive full refund of registration fees (see section on "Refunds")
January 6, *Thursday*	Classes begin
January 12, *Wednesday*	Last day to add courses
January 12, *Wednesday*	Last day to withdraw and/or drop and receive full refund of registration fees
January 12, *Wednesday*	Last day for late registration (see late registration fee)
January 20, *Thursday*	Last day to register for Continuing Education
January 20, *Thursday*	Last day for Continuing Education Refund
January 26, *Wednesday*	Last day to apply for a degree to be earned at the end of Quarter II, 1971-72
February 7, *Monday*	Gasparilla Day Holiday
February 16, *Wednesday*	Last day to drop courses without penalty
February 25, *Friday*	Last day to withdraw without penalty
March 17, *Friday*	End of Quarter II

QUARTER III, 1971-72

February 29, *Tuesday*	**Last day to apply for admission or re-admission**
March 27, 28, *Mon., Tues.*	Registration by appointment
March 29, *Wednesday*	Last day to cancel and receive full refund of registration fees (see section on "Refunds")
March 30, *Thursday*	Classes begin
April 5, *Wednesday*	Last day to add courses
April 5, *Wednesday*	Last day to withdraw and/or drop and receive full refund of registration fees
April 5, *Wednesday*	Last day for late registration (see late registration fee)
April 13, *Thursday*	Last day to register for Continuing Education
April 13, *Thursday*	Last day for Continuing Education Refund
April 19, *Wednesday*	Last day to apply for a degree to be earned at the end of Quarter III, 1971-72
May 10, *Wednesday*	Last day to drop courses without penalty
May 17, *Wednesday*	Last day to withdraw without penalty
June 6, *Tuesday*	End of Quarter III
June 11, *Sunday*	Commencement Convocation

QUARTER IV, 1971-72

Note: Dates apply to full 9-week term. See quarterly Schedule of Classes for appropriate dates for 3- and 6-week sessions.

May 12, *Friday*	**Last day to apply for admission or re-admission**
June 12, *Monday*	Registration by appointment
June 13, *Tuesday*	Classes begin
June 16, *Friday*	Last day to cancel and receive full refund of registration fees (see section on "Refunds")
June 19, *Monday*	Last day to add courses
June 19, *Monday*	Last day to withdraw and/or drop and receive full refund of registration fees
June 19, *Monday*	Last day for late registration (see late registration fee)
June 27, *Tuesday*	Last day to register for Continuing Education
June 27, *Tuesday*	Last day for Continuing Education Refund
July 3, *Monday*	Last day to apply for a degree to be earned at the end of Quarter IV, 1971-72
July 4, *Tuesday*	Independence Day Holiday
July 14, *Friday*	Last day to drop courses without penalty
July 21, *Friday*	Last day to withdraw without penalty
August 11, *Friday*	End of Quarter IV

COLLEGE OF MEDICINE

Academic Calendar 1971-72

QUARTER I, 1971-72

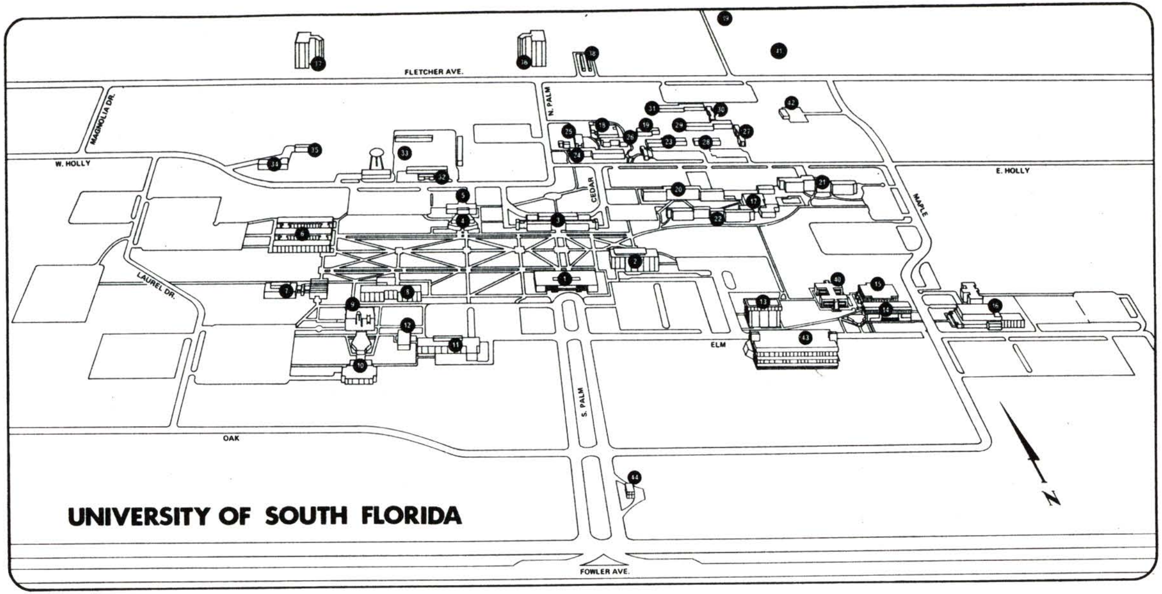
September 8, *Wednesday*	Registration
September 13, *Monday*	Classes Begin
November 25, 26, *Thurs., Fri.*	Thanksgiving Holiday
December 17, *Friday*	End of Quarter I

QUARTER II, 1971-72

January 3, *Monday*	Registration, Classes begin
February 7, *Monday*	Gasparilla Day Holiday
March 17, *Friday*	End of Quarter II

QUARTER III, 1971-72

March 27, *Monday*	Registration, Classes begin
June 9, *Friday*	End of Quarter III

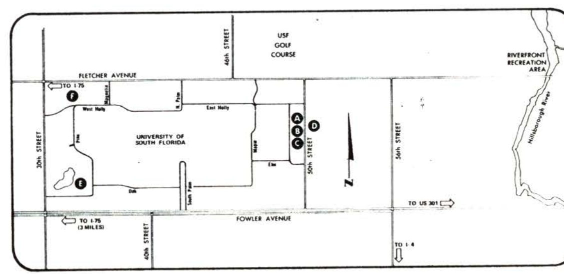


MAP KEY

1 John & Grace Allen Administration Building
2 Library
3 University Center
4 University Theatre
5 Theatre Center
6 Fine Arts Building
7 Life Sciences Building
8 Chemistry Building
9 Science Center
10 Engineering Building
11 Physics Building
12 Planetarium
13 Education Building
14 Business Administration Building
15 Social Science Building
16 Physical Education Building
17 Argos Center
18 Andros Center
19 Andros Office-Classroom Building
20 Alpha RESIDENCE HALLS
21 Beta
22 Gamma
23 Delta
24 Epsilon
25 Zeta
26 Eta
27 Theta
28 Iota
29 Kappa
30 Lambda
31 Mu
32 Operations & Maintenance Administration Building
33 Maintenance & Utility Bldgs.
34 Central Receiving Building
35 Engineering Research Bldg.
36 Fontana Hall*
37 DeSoto Hall*
38 University Foundation Apts.
39 Observatory
40 Faculty Office Building
41 Golf Shop
42 Security Building
43 Language-Literature Bldg.
44 Campus Information Center

*private residence halls

A Baptist Student Center
B Episcopal Student Center
C University Chapel Fellowship
D Catholic Student Center
E Botanical Garden
F State Mental Health Facility



GENERAL INFORMATION

The University of South Florida was founded December 18, 1956, by the State Board of Education, following more than two years of preparatory study by the State Legislature, the Board of Education, and the State Board of Control (now the Board of Regents). When it was opened to a charter class of 2,000 freshmen on September 26, 1960, it became the first state university in the United States to be totally planned and initiated in this century. It also represented the first step in a broad and comprehensive expansion of the State University System of Florida.

This system of public universities now includes the University of Florida in Gainesville, Florida State University and Florida A & M University in Tallahassee, the University of South Florida, Florida Atlantic University in Boca Raton, the University of West Florida near Pensacola, Florida Technological University near Orlando, and two universities currently under development: the University of North Florida in Jacksonville, and Florida International University in Miami. In addition, there are 27 public junior colleges in population centers throughout the state.

More than 10,000 students had graduated from the University of South Florida by the end of 1970. Enrollment for the fall of 1970 reached 17,900, and the student body is expected to exceed 30,000 before 1980.

The University was fully accredited in 1965 by the Southern Association of Colleges and Schools, the official accrediting agency for all educational institutions in the South.

Tampa Campus

On a 1,672-acre campus eight air miles northeast of downtown Tampa, the University is ideally located for steady growth and development in the heart of an expanding metropolitan area having a million and a half residents within commuting distance. The campus is midway between U.S. Highway 41 and 301 on State Highway 582, Interstate 75 passes two miles to the west.

The physical plant of the University, now including 32 major academic and residence buildings, is currently valued at more than $60 million. The buildings are of similar, modern architectural design and all are completely air conditioned. Major buildings now in use are:

John & Grace Allen Administration Building, housing administrative and business offices and a number of special service units of the institution (named for the University's first president, Dr. John S. Allen, and his wife);

Library, a five-story structure designed for 250,000 volumes in open stacks;

University Center, with student and faculty offices, meeting rooms, recreation areas and classrooms, as well as a cafeteria, and the University Bookstore;

Theatre, seating 550 persons for cultural events and also serving as a lecture and teaching auditorium;

Theatre Centre, with rehearsal rooms for dance, drama, and opera, costume and prop shops, offices, and a Centre Stage for production preparation;

Chemistry Building, with classrooms and laboratories for chemistry and offices for faculty;

Life Sciences Building, housing the University's programs in biological sciences;

Fine Arts-Humanities Building, with separate wings for humanities, art and music;

Physics Building, housing physics, astronomy, and mathematics;

Planetarium, adjacent to Physics Building, with regular programs presented under the 30-foot dome;

Argos and Andros residence halls and activities centers, housing 2,800 students and providing central dining, recreational and service facilities in 14 separate but coordinated buildings;

Business Administration Building, housing the dean and faculty of the college, classrooms, and a 430-seat teaching auditorium;

Engineering Building, housing the dean and faculty of the college, classrooms, laboratories, and a 250-seat auditorium;

Physical Education Classroom Building, housing the director and faculty of the Division of Physical Education, classrooms, gymnasium, activities area, and an indoor swimming pool;

Education Building, housing the dean and faculty of the college, classrooms, an auditorium seating 200, and an Instructional Materials Center;

Astronomy Observatory, on the north campus adjacent to University golf course, housing a $1000,000 photo-telescope and several smaller telescopes;

Science Center, completed in 1968, housing laboratories and research facilities for graduate students and faculty, the USF Computer Research Center and temporary quarters for the College of Medicine;

Social Science Building, completed in 1968, can accommodate 1,000 students in classes and laboratory work at the same time. The building includes 120 faculty offices, classrooms, seminar rooms, clinical and experimental research labs, weather and climatology labs, and a complete weather station;

Faculty Office Building, completed in 1969, is primarily a faculty office building, with facilities for faculty and student conferences.

The Language-Literature Building, to be completed in September, 1971 will house the Division of Language and Literature and includes 45 classrooms, 6 seminar rooms, faculty offices, and a 500-seat auditorium.

Many additional programs are operated by the University's Center for Continuing Education in 12 west central Florida counties. In this area, the Florida Board of Regents has designated the University of South Florida to be responsible for all higher education requirements above that supplied by the State Junior College System. The Center for Continuing Education maintains a branch office at 1015 S. Tamiami Trail in Sarasota, and operates a century-old-mansion—Chinsegut Hill, near Brooksville—as an education retreat for seminars and meetings.

St. Petersburg Campus

The University of South Florida at St. Petersburg opened in September, 1965, and provides an opportunity for University students who are residents

of Pinellas County to complete all or a portion of their course work in selected areas without leaving the county. Enrollment at the St. Petersburg campus is *not* restricted to Pinellas County residents.

Located on Bayboro Harbor adjacent to downtown St. Petersburg, the campus is within easy walking distance of many of the cultural and recreational facilities of Florida's "Sunshine City."

Resident faculty members provide personal and social, as well as scholastic, counseling. This core of resident faculty is supplemented by professors commuting from the Tampa campus to provide additional scope to the academic program.

The academic program at the St. Petersburg campus is restricted to courses designed to serve students of junior, senior, and graduate standing. Selected courses and programs are offered by the Colleges of Basic Studies, Business Administration, Education, Engineering, and Liberal Arts. Students may enroll as full time students on the St. Petersburg campus or they may elect to enroll on both the St. Petersburg and the Tampa campuses simultaneously. Dual enrollments on both campuses may provide students with a class schedule which is both flexible and convenient.

In addition to providing academic programs from five of the University's colleges, the St. Petersburg campus houses a marine science research and training center.

The Marine Science Institute of the University of South Florida, with headquarters at the St. Petersburg campus, is an interdisciplinary venture involving faculty members of seven different departments in three colleges in addition to six full-time faculty members at the St. Petersburg campus who are concerned with planning, administration, research, and teaching.

Probably no other oceanographic institution has ever been established with such excellent facilities as those provided by the St. Petersburg campus for teaching, research, and the docking and maintenance of oceanographic vessels. The location of the Institute, at the center of the edge of the great continental shelf of the Florida Gulf Coast and in the midst of the metropolitan area of the Sun Coast, is another of its unique advantages. It would seem destined to develop into one of the nation's leading oceanographic centers.

The Institute offers a program leading to the master of arts degree in marine science. During the summer quarter, the Institute offers one of the most comprehensive arrays of marine science courses to be found at any university in the nation. Most of these courses are open to both undergraduate and graduate students, and most of them are offered also during other quarters of the academic year.

Students interested in the marine science program should visit the St. Petersburg campus facilities and discuss their interests with the director of the Marine Science Institute.

While offering many of the characteristics of a small college, the University of South Florida at St. Petersburg still has the advantages of all the resources of a major university. Its development is expected to keep pace with the continuing expansion of the Tampa Bay area.

Internal Organization

The University is organized internally in seven colleges, with supporting services designed for this basic pattern. The seven colleges are: Basic Studies, in which all freshmen and sophomores enroll and from which a

minimum of six courses must be taken during the first two or three years; Business Administration, which offers majors in such fields as economics, accounting, management, marketing, and finance; Education, which provides teacher training in all major teaching fields; Engineering, organized around systems design, research, and operation; Liberal Arts, which offers programs in the areas of fine arts, natural sciences, social sciences, and languages and literature; Medicine, with programs leading to the M.D.; and Nursing, which offers a four-year program leading to the B.S. degree.

Bachelor's degrees are offered in many fields by all the University's colleges. Master's degrees are offered in more than 50 areas of business, education, engineering, and liberal arts.

The University's first Ph.D. program, in Biology with emphasis on Marine Biology, was established in 1968. Ph.D. programs in Chemistry and Education began in 1969, and programs in English, Mathematics, and Psychology were authorized in 1971.

The University's teaching and research faculty, numbering more than 850, represents all major areas of higher learning, and nearly 60 per cent hold doctoral degrees.

For administrative purposes, the University is organized into the three broad areas of academic affairs, student affairs, and administrative affairs. The vice presidents who head these three units serve with the President in the Executive Committee, the principal policymaking and advisory body of the University. The President is responsible to the Board of Regents for internal policy and procedure of the University. In addition to the Executive Committee, advice and assistance to the President in the determination of policy is given by the University Senate, comprising elected representatives from all areas of the University community, including the student body.

The Foundation

The University of South Florida Foundation is a non-profit corporation functioning primarily to provide supplemental funds for the University. These contributions are used for student aid, cultural events, library, research, guest lectures and other areas needing support. All gifts and bequests to the University should be made through the Foundation. Membership in the Foundation is open to all friends, parents, and students interested in the dynamic growth of the University of South Florida.

Contact the Foundation office, or the Director of Development if considering membership or a gift.

Alumni Association

The University of South Florida Alumni Association was organized in December, 1963, upon graduation of the first class. The Association's activities are conducted by officers of the Association with the cooperation of the Office of Alumni Services. An alumni newsletter, *The Golden Horn*, is published bimonthly.

Purposes and Goals

A university is defined as an institution of higher learning consisting of several schools or colleges, and offering programs in the liberal arts as well as in a number of professional areas. It is, however, more than this; it is a place where new knowledge is sought, and old knowledge is synthesized in new ways through research and scholarship for the benefit of mankind.

It is not, however, a trade school where the detailed techniques of a trade can be learned by practice. It deals with professional areas more in theory than in practice, providing the broad background and understanding necessary to the development of specific skills. In this way it develops the intellectual judgments necessary to deal with constantly changing problems of a profession.

A university should not be regarded simply as a place to prepare for a profession, important as this may be. One of the most important functions is to provide all its students with a better understanding of life in a rapidly changing world. Man is surrounded by a natural environment and confronted by rapidly increasing knowledge of that environment. These are matters of human affairs which he needs to know about as an educated citizen and as a professional person. Hence, a university has an important obligation to provide in its educational program for all students those common elements which make for more responsible and responsive living.

A university is also a servant of the society which supports it, and at the same time it is one of the leaders of that society. It is the medium through which the greatest wisdom of the past and the living spirit of the present are passed on to new generations of young people to be used by them as leaders in the further advances of society toward goals of better and finer living.

In the classroom, subjects are dealt with objectively, critically, analytically and constructively, as well as inspirationally and creatively. The student is expected to learn to be analytical as well as creative in his own approach and to understand that such activities, to be constructive, must be carried out with a minimum of emotional bias and prejudice. He must learn to understand that in a democracy points of view will differ and there may be no wholly right or wrong answers to many questions, only better or worse answers from the viewpoint of society or the individual. He must be prepared to examine objectively his own position on such matters and develop for himself a tenable position or philosophy with which he can continue to live.

The University of South Florida, in trying to attain this character, has set up for itself the primary goal of placing "Accent on Learning" as its most important reason for being. Toward that end, the University has these specific objectives:

I. To provide the citizens of Florida with an outstanding public institution of higher learning, giving leadership and service in the intellectual, cultural, economic and scientific interests of the state.

II. To create a community of scholars dedicated to teamwork in the search for truth, the exchange of ideas and the establishment of high standards of intellectual inquiry and creative activity.

The faculty has been carefully chosen for its training, competence and ability to teach. In an unusual sense it is a team. The faculty has many times shown its outstanding ability to carry on creative work and significant re-

search and to provide opportunities for able students to learn the meaning of, and assist in, such work as part of the process of education.

III. To provide opportunity for the development and training of the mind which promotes maturity, objectivity and creativity.

All degree programs of the University are designed to promote the following general aims for all students: (1) the necessary skills in writing, speaking, reading and listening; (2) self-reliance through the ability to think clearly; (3) understanding of oneself and one's relationship to others; (4) growing convictions based on the search for truth; (5) understanding and appreciation of our cultural, social, scientific and spiritual heritage; (6) intelligent approach to local, national and world problems leading to good citizenship and leadership in life; (7) some practical understanding of another language; (8) professional competence based on high ethical standards; and (9) healthful development of the body.

IV. To provide a broad cultural and basic educational pattern for all students, together with programs of liberal, pre-professional and professional studies, and to supplement these with opportunities for independent development and work experience.

Recent studies indicate a strong trend in American liberal arts colleges toward the inclusion of more professional preparation in their programs and, conversely, for the professional colleges to include more general and liberal studies in theirs. Thus, the professional and the liberal arts colleges are coming closer together in the effort to provide a continuum of studies which includes the general, the liberal and the professional in the same program. The University of South Florida is attempting this in a way that provides greater unity of knowledge for the student.

For each student the educational program combines preparation in basic studies with work in the liberal arts and the sciences and with professional studies. Ideally, a student's program will be devoted about one-third to basic studies, one-third to professional studies and one-third to elective and related choices.

A LOOK AT THE FUTURE

The University of South Florida's location in the large and expanding Tampa Bay metropolitan area, coupled with the broad growth and development of Florida in the space age, suggests a future of rapid change and expansion for the University. It is estimated that enrollment in University of South Florida courses will increase approximately 10 to 15 percent each year through 1975. Construction will continue at a rapid pace each year for several years to come. The physical plant of the University is valued above $60 million, and the major portion of the campus is still unused. New faculty are joining the University staff at a steady rate. In every respect, the University of South Florida is a vital part of the state's inevitable growth, and is continuing on its course toward becoming a distinguished university.

ADMISSION

The University of South Florida requires definite ability and competence on the part of students. Those having these abilities and skills and who are seriously interested in earning an education can expect to succeed in college. Students who lack them are almost sure to encounter serious difficulty.

The Director of Admissions will admit students who meet the formal requirements of the University for admission and can be expected to do successful academic work. He will suggest other possibilities to those who do not.

The University may refuse admission to a student whose record shows previous misconduct not in the best interest of citizens of the University community.

In accepting students for admission, the University does not discriminate on the basis of race, color, or national origin.

How to Apply

You should request an application indicating whether you need Freshman (no previous college), Transfer, or Graduate application papers. Make your request to:

Office of Admissions
University of South Florida
Tampa, Florida 33620

Students interested in applying for admission to the College of Medicine may obtain application forms from the Office of Student Affairs, College of Medicine.

You are advised to make your request for papers early. Application papers may be submitted as early as 12 months prior to anticipated enrollment, but must be received prior to the deadline in the academic calendar. Please note: All applicants must enter their Social Security number on the application. All application forms will be returned to the applicant if they do not include Social Security number and the $15.00 nonrefundable application fee.

All academic records must be mailed to the Office of Admissions, University of South Florida, directly from the appropriate institution (i.e., high school record from high school attended; college record from each college attended; G.E.D. test scores and high school equivalency diploma from appropriate high school or State Department of Education; U.S.A.F.I. scores from Madison, Wisconsin; S.A.T. scores from high school or Educational Testing Service, Princeton, N.J.). The student has the responsibility of requesting the records to be mailed to the University from each school attended.

A student who is accepted and does not enroll must notify us within 30

days of the original planned date of entry if he wishes his application changed to a future date of entry. Otherwise, new application forms must be completed and the application fee paid again.

Requirements for Admission

FRESHMAN — Graduate of Florida Secondary Schools

1. Official transcript sent directly from secondary school indicating graduation.
2. Favorable recommendation from secondary school.
3. An overall "C" average in academic subjects.
4. A minimum score of 300 on the Florida Twelfth Grade Test.

FRESHMAN—Graduate of Out-of-State Secondary Schools

1. Official transcripts sent directly from secondary school indicating graduation.
2. Favorable recommendation from secondary school.
3. Grades placing them in upper 40 per cent of their graduating class.
4. A minimum total score of 900 on the Scholastic Aptitude Test with no less than 450 on the Verbal portion or score of 21 on the A.C.T.

TRANSFER

1. Official transcript from each institution previously attended.
2. An overall academic average of "C" on all work attempted.
3. Eligible to re-enter institution last attended.
4. Applicant must have completed Student Information Form sent from the last institution attended directly to the Dean of students at the University of South Florida.
5. A satisfactory secondary school record and test scores are required for those students who have attempted less than 90 quarter hours of college work. See page 16, EVALUATION OF TRANSFERRED CREDITS (undergraduate).

TRANSIENT

A transient student is one interested in enrolling at the University of South Florida for only one term before returning to his parent institution.

1. Statement indicating good standing from the parent institution and their approval of course to be taken.
2. Applicant must have a completed Student Information Form sent from the last institution attended directly to the Dean of Students at the University of South Florida.

NON-DEGREE Undergraduate, 21 years or older

1. When no previous college work has been taken, a secondary school record indicating overall "C" average and graduation must be submitted.
2. Students with previous college must submit a statement of good standing or satisfactory transcript and have a Student Information Form sent from the last institution attended directly to the Dean of Students at the University of South Florida.

GRADUATE—See Graduate Section, Page 147.

READMISSION

1. Any student who has not been enrolled at the University for two quarters immediately preceding the quarter for which he wishes to re-enter will need to secure a special application for students in this category from the Office of Records & Registration (ADM 264).
2. Students who were in attendance at the university the two terms immediately preceding registration are considered Continuing Students and will receive registration appointment cards. Students who were not in attendance the past two terms preceding registration should follow instructions in the University Class Schedule for Former Students Returning.
3. However, all former undergraduate students wishing to enter graduate school for the first time, and those who have earned a baccalaureate degree since last in attendance at the University of South Florida, will need to file a graduate application prior to the deadline listed in the catalog. A fee is not required.
4. All Disqualified Students must petition the Academic Standards Committee for permission to re-enroll at the University of South Florida.

EVENING CLASSES

The admission requirements and achievment levels in the day and evening courses are the same. Any student accepted to the University may enroll in courses offered in the evening which are appropriate to his program.

EVALUATION OF TRANSFERRED CREDITS (Undergraduate)

1. Course evaluations are prepared after an application for admission is submitted, official transcripts are received, and applicant is cleared for admission.
2. Effective January, 1971, work in which a student has earned a grade of "D" or better may be transferred. This rule is not retroactive.
3. A transfer student from a junior college may satisfy the basic studies requirements of the University of South Florida by completing (before transfer) the general education program prescribed by that institution. Transcripts must certify graduation and the general education requirements as completed.
4. A maximum of 90 quarter hours of junior college work will transfer. Any prior work taken at a four year institution must be included in the 90 hours.
5. Credit will not be awarded for G.E.D. tests, for basic R.O.T.C., military science, nor for courses given credit without a grade.
6. Service school courses will be evaluated with reference to the recommendations of the American Council on Education when official credentials have been presented. Such recommendation, however, is not binding upon the University. No more than 22 quarter hours can be earned by military service credit.
7. A maximum of 45 quarter hours of extension, correspondence, military service and College Level Examination Program credits can be applied toward a degree.

COLLEGE LEVEL EXAMINATION PROGRAM

The University of South Florida will grant credit for the general examinations of the College Level Examination Program if the student scores at or above the 50th percentile of the national norm. See 7, above.

FOREIGN STUDENTS

For all foreign students, undergraduate and graduate, the following items are required:

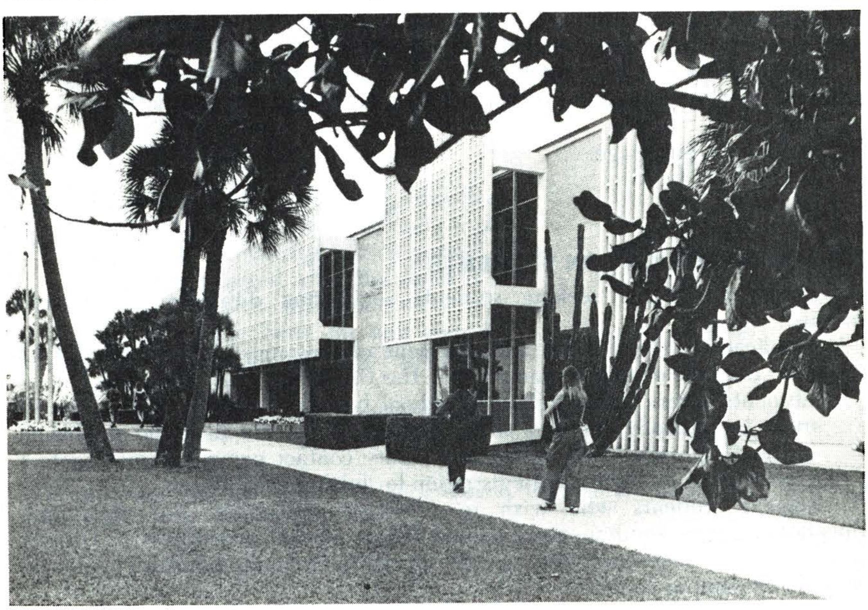
1. Completed application must be received by the University of South Florida at least 6 months prior to expected date of enrollment.
2. A $15 nonrefundable fee must be included with the application.
3. A certificate of financial ability.
4. Two personal letters of recommendation.
5. A certificate indicating satisfactory scores on the Test of English as a Foreign Language. The student should request that Educational Testing Service send their scores directly to the Office of Admissions.

Foreign applicants must request all colleges attended to submit directly to the Office of Admissions at the University of South Florida, transcripts of all work attempted, certified and translated in English. *For undergraduates* the high school record must be included, certifying graduation and date and indicating an average of "C" or better. *Graduate applicants* must comply, in addition to the above, with requirements listed in the Graduate Section.

FLORIDA RESIDENCY

A Florida resident, for purposes of admission, expenses and other University classification needs, is one whose parent or guardian (or the applicant if over 21) is a citizen of the United States, or a resident alien, and has resided permanently in the state of Florida for at least 12 months immediately preceding registration at the University. No applicant can claim Florida residence only by virtue of the fact that he or she has attended any school, college, or university in the state for the 12-month period immediately preceding registration. The owning of property in Florida while being physically located in another state does not qualify a person to claim Florida residence.

John & Grace Allen Administration Building



REGISTRATION

UNIVERSITY OF SOUTH FLORIDA STUDENTS

Registration will be completed in person by appointment during the regular scheduled registration period. Each quarter, this registration period will conform to the established University calendar published quarterly in the University Class Schedule.

Changes of class registration will be accepted only during the time and day(s) announced in the University Class Schedule.

Any regular University student wishing to simultaneously enroll in evening classes shall register and pay fees in the manner prescribed for regular students attending campus daytime classes.

Payment of Fees. Registration fees are due, by mail or in person, by the close of business on the last day of registration prior to the first day of class in any quarter. Any fees paid after that date must be accompanied by an additional twenty-five dollar ($25.00) **penalty payment.**

Late Payment of fees, including the penalty payment, will only be accepted during the first five (5) regular class days of any quarter. Fee payments may be made in advance of final complete registration. A student is eligible for a full or partial **refund** of fees upon withdrawal from the University only within the first five (5) regular class days in any quarter.

No late payment of fees, with or without penalty payment, will be accepted, and no refund of fees will be made to any student after the close of business on the fifth regular class day in a quarter.

Registration will be **cancelled** for any student who has not paid his fees in full by the close of business on the fifth regular class days in a quarter.

See FEES, next page.

CONTINUING EDUCATION STUDENTS

Those non-degree seeking students registering only for courses off-campus:

1. Application, registration, and payment of fees must be postmarked no later than the deadline announced in the University Class Schedule.
2. Students whose fees are paid by school boards or state or federal grants must individually forward their application by the deadline published in the University Class Schedule. County contact persons should contact the Office of Records and Registration for further procedures.

Regular students who wish to schedule on-campus and continuing education courses simultaneously should follow normal procedures to register for on-campus courses and then use the special Continuing Education Form to schedule off-campus courses.

FEES

The following fee schedule applies to all University of South Florida students with the exception of those in the Bachelor of Independent Studies, Adult Degree Program. For information on the Adult Degree Program fees, see Academic Programs. All fees are subject to change by action of the State Legislature, without prior notice. The University will make every effort to advertise any such changes if they occur.

A. Initial Application Fee (each application—not refundable). . .$15.00
B. The following fees must be paid in full for each academic quarter at the time of registration:

	Florida Resident†	*Non-Florida Resident*†
1. Registration Fee and Tuition:		
A. For students registering for less than seven quarter hours (credit or non-credit)		
*Graduate (per quarter hour)	$16	$41
*Undergraduate (per quarter hour)	$14	$39
B. For students registering for seven or more quarter hours (credit or non-credit)		
*Graduate	$175	$475
*Undergraduate	$150	$450

	Other Fees ††
2. Late Registration Fee (chargeable to any student who fails to register and/or pay within the formal registration period. This fee is also charged when the check is submitted within the time limit but is returned by the bank for any reason.)	$25.00
3. Audit Fees (same rate as if registered for credit.)	
4. Cooperative Education Program (for training quarter)	$40.00

C. Room rent to be paid in accordance with information in Housing Contract.

	Per Quarter§
1. Room rent Quarters I, II, III	$160.00
2. Room rent Quarter IV	$125.00

D. The following food service plan options are available to all students.**

1. *Saga Food Service* — *Per Quarter§*
   20 meal plan—Monday through Sunday $185.00
   15 meal plan—Monday through Friday $170.00
   10 meal plan—Monday through Friday $160.00
2. *Eastern Food Service*
   20 meal books in 25 cent denominations at $18.95 per book.

* In addition, a service fee of $3.00 per credit hour must be paid for each hour in all courses taken in the Continuing Education Program. (These courses are designated by the "700 series" section number.)

** The prices listed are for the academic year 1970-71 and are subject to change for the academic year 1971-72.

† Tuition is paid by non-Florida residents in addition to the registration fee. Florida residents pay only the registration fee.

†† Items 2 through 4 applicable to both Florida residents and non-Florida residents.

§ State Sales and Use Tax included.

FLORIDA RESIDENCY

A Florida resident, for purposes of admission, expenses and other University classification needs, is one whose parent or guardian (or the applicant if over 21) is a citizen of the United States, or a resident alien, and has resided permanently in the state of Florida for at least 12 months immediately preceding registration at the University. No applicant can claim Florida residence only by virtue of the fact that he or she has attended any school, college, or university in the state for the 12-month period immediately preceding registration. The owning of property in Florida while being physically located in another state does not qualify a person to claim Florida residence.

REFUND OF FEES

Students who find it necessary to withdraw from the University may be permitted to have a refund of fees upon presentation to the University Business Office of an authorization issued by the Office of the Registrar. The issuance of these refunds will be detained for a two-week period immediately following each official University registration, and the refunds will be made under the following conditions.

1. A full refund will be made for a full-time or part-time student making a complete withdrawal from the University during the "Drop and Add" period in any quarter. There will be a full refund less proper charges per hour for each hour continued by students changing from full-time to part-time during the "Drop and Add" period in any quarter.
2. No fees will be refunded after the end of the "Drop and "Add" period in any quarter except in the following cases:
   a. A student involuntarily called back to duty with the armed forces will be entitled to a refund in the amount of the registration fee less $30.00 for a full-time student and $3.00 per hour for a part-time student.
   b. The death of a student during the term for which enrolled would permit a

refund in the amount of the registration fee less $30.00 for a full-time student and $3.00 per hour for a part-time student.

c. Incapacitating illness of such duration and severity as to preclude successful completion of the academic program for the term for which enrolled would also permit a refund in the amount of the registration fee less $30.00 for a full-time student and $3.00 per hour for a part-time student.

d. Cancellations would be considered a separate category where the student is considered not registered because of the University's actions, usually resulting from some pre-existing University regulations.

3. No refund will be made under this policy except upon proper application for the refund through the Office of the Registrar.
4. No part of the student activity fee will be refunded if the student fails to surrender his original (current quarter) "Certification of Fee Payment" card.
5. Deductions from authorized refunds will be made for unpaid accounts due the University.
6. A full refund of out-of-state fees will be made if withdrawal is effected during the "Drop and Add" period in any quarter.

PAYMENT OF ACCOUNTS DUE THE UNIVERSITY

Charges against students for loss or breakage of University equipment, books, fines, and other charges will be required to be paid within ten (10) days of notification. Failure to comply may result in cancellation of the student's registration and/or the privilege to re-register.

CHECK CASHING SERVICE

The University will accept personal checks for accounts due the University. Each student is urged to make his own financial arrangements through his choice of commercial banks. The University Cashier and the Bookstore will cash personal checks not exceeding $50.00. A service charge of 10 cents is made for each check cashed. All checks returned by the bank must be cleared within 7 days of date of notification to the student. Failure to comply may result in cancellation of the student's registration.

University Center

ACADEMIC POLICIES AND PROCEDURES

The University is concerned that each student make reasonable progress toward his educational goal, and will aid each student through guidance and faculty advising. Whenever this progress is hindered, blocked or interrupted, the University will, through additional guidance, special counseling or restrictions on the student's activities, aid the student to resume satisfactory advancement. He may be required to leave the University for a period sufficent to gain adequate maturity and motivation.

To be in satisfactory academic standing at the University a student must be properly admitted and be matriculated for a degree or have qualified as a special student and normally hold a cumulative grade point ratio of 2.0. The precise averages for good standing are described below. Falling below these points should suggest to the student that he must change his pattern of work to restore himself to a satisfactory status.

Any student is not in good standing whenever his cumulative grade point ratio falls below 1.5 and his attempted hours are less than 45, or below 1.7 when his attempted hours are between 45 and 89, or below 2.0 when he has attempted more than 89 credit hours. Whenever a student falls into this category he will be placed on Academic Warning status and a notification to this effect will be sent to him and his permanent record will be posted accordingly. For a complete description of the academic warning rules, see next page. The student will be required to meet with his faculty adviser for additional assistance in identifying and correcting his difficulties.

A transfer student who was not in good standing at his prior institution but who for special reasons has been admitted to the University will be placed immediately on Academic Warning status for a trial period.

All students who do not raise their grade point ratio to a level of good standing within the quarter in residence after being placed on Academic Warning shall be placed on Final Academic Warning.

Whenever a student is placed on Final Academic Warning, a notification of this will be sent to the student's parents or guardian unless the student is 21 years of age or older and is living independently of his parent or guardian. The student will be required to meet with his faculty adviser for additional assistance, and must forego holding any executive or committee office in any student or campus organization, and forego participation in any student activity or organization which represents the University. The permanent academic record of the student's progress will show that he was placed on Final Academic Warning; and he must earn at least a 2.0 average, regardless of credit hours attempted, during the next quarter in residence. Failure to do so implies that the student has disqualified

himself from continuous attendance at the University and that he must wait at least one full quarter before becoming eligible to be considered by the Academic Standards Committee for readmission to the University. Any student who withdraws from the University while on Final Academic Warning must petition and secure approval of the Academic Standards Committee to re-enter the University.

The Academic Standards Committee meets regularly to review petitions submitted by students to waive certain academic regulations. Students must petition and secure approval of the Committee to return to the University after having been disqualified from further immediate attendance or for reasons pertaining to admission, registration or other academic policies and procedures.

ACADEMIC WARNING STATUS—DISQUALIFICATION AND READMISSION

A student is not in good standing whenever his cumulative Grade Point Ratio falls—

Below 1.500 and his attempted quarter hours are less than 45;

Below 1.700 and his attempted quarter hours are between 45 and 89.

Whenever a student falls into one of the above categories he will be placed on *Academic Warning.* All students on *Academic Warning* who do not raise their cumulative Grade Point Ratio to a level of good standing, as indicated above, within the term enrolled after being placed on Academic Warning will be placed on *Final Academic Warning.*

Below 2.000 and his attempted quarter hours are more than 89.

Whenever a student falls into the above category he will be placed on *Final Academic Warning.* A student on *Final Academic Warning* must earn at least a 2.000 average on the next 12 quarter hours of enrollment. Failure to do so will disqualify the student from continued attendance at the University of South Florida. If a student withdraws while on Final Academic Warning, he must petition and secure approval of the Academic Standards Committee for re-entry.

Below 2,000 and his attempted quarter hours are more than 135.

Whenever a student falls into the above category he will be automatically disqualified.

A student who fails to have a 2.000 cumulative Grade Point Ratio after attempting 135 quarter hours is *automatically disqualified.* A *disqualified* student must petition and secure approval of the Academic Standards Committee before readmission. *This rule overrides all others.* Normally, one full quarter must pass before such a petition will be considered. However, readmission should not be considered automatic. In rare and exceptional cases a disqualified student may petition the Academic Standards Committee for earlier readmission when it can be clearly demonstrated that circumstances beyond the student's control accounted for his academic problems.

Any student who is readmitted to the University following Disqualification will be placed immediately on a *Final Academic Warning* status. This does not apply to a student who has received a degree in a college parallel program from a Florida state junior college.

A disqualified student seeking to gain readmission must apply to the Academic Standards Committee through the Office of the Registrar.

If the student attends another college or university during this intervening period, he will be classified as a transfer student and his admission will be based on his total educational record.

Information for graduate students is shown on page 152.

PENDING

A student may be placed on "Pending" by failing to meet obligations to the University. *When a student is on Pending, he may not be allowed to register, graduate, nor request a transcript.* Settlement of financial accounts must be made at the University Cashier's Office.

The administration of the system of Academic Warning status, Final Academic Warning status, academic disqualification and Pending is the responsibility of the Director of Records & Registration. He will work closely with other University officials and faculty advisers in these matters.

Students having questions or problems about these matters should go to either their adviser, the Office of Records & Registration or the dean of the college in which they are enrolled.

Each student placed on Pending should determine from the Office of Records & Registration which office placed him on Pending and clear the pending obligation with that office.

ADDS

After a student has completed his registration on the date assigned to him, he may add courses without a fee during the time designated as the "change period" at registration. The adding of courses after the "change period" is not permitted.

AUDITS

If a student wishes to audit a course, he must obtain written permission from the instructor of the course and section in which he wishes to enroll. Audit forms must be obtained from the Registrar's Office and completed prior to registration. The student must also contact and consult with the instructor concerning just what is expected of an audit in his class. If permission is granted, the audit forms must be presented to the Registration Approval Clerk after a regular class and section card has been obtained. This will insure the student a place in the class even though no credit will be given. The student must pay the regular registration fee for audit courses.

REGISTRATION CANCELLATION

If, after completing his registration, a student wishes to cancel it, he may do so by completing a Withdrawal Form in the Registrar's Office, and will receive a complete refund of registration fees. These forms, if mailed, must be postmarked before midnight of the day before classes start or delivered to the Registrar's Office in person by the same deadline.

COURSE WAIVERS

See information under College of Basic Studies.

DROPS

For the first six weeks of any term a student may drop a course or courses without penalty (he will receive a grade of "W") by completing and turning in a "DROP" form at the Office of Records & Registration. Any course drop after the first six weeks of classes will result in a grade of "F".

WITHDRAWALS

Until four weeks before the last day of the term any student may withdraw from the University without penalty. After that date grades of "F" will automatically be assigned for all course work. If the student is on Conditional Regis-

tration or Final Academic Warning and withdraws from the University, it will be necessary for him to petition and secure the approval of the Academic Standards Committee before being readmitted.

Following a second withdrawal from the University within four consecutive quarters, there will be posted on the student's record "disqualified—two withdrawals." This does not affect existing regulations concerning withdrawal while on Final Academic Warning.

CLASS STANDING

A student's class is determined by the number of credits he has earned without relation to his grade point ratio:

0	Non-degree holder and non-baccalaureate degree seeker	
1	Freshman	0 through 44 quarter hours passed
2	Sophomore	45 through 89 quarter hours passed
3	Junior	90 through 134 quarter hours passed
4	Senior	135 or more quarter hours passed, however no baccalaureate degree earned here or elsewhere
5	Baccalaureate degree holder working on a second undergraduate major or taking courses for enrichment or certification.	
6	Graduate students working for degree or non-degree in the graduate program	
7	Graduate degree holders working on a second degree or for enrichment or certification purposes	
8	Students in the Doctoral program for degree or non-degree	
9	Students with a doctoral degree	

Non-Degree Students who accumulate 45 or more hours are advised to enroll for a degree program.

CHANGE OF DEGREE STATUS

Non-degree seeking students who wish to change to a degree-seeking status must first meet the degree-seeking admission requirements or earn a minimum of 12 quarter hours with a minimum average of 2.0 (C). Information for graduate students is shown on page 150.

ADMISSION TO UPPER LEVEL

Qualified transfer students will be admitted to an upper level college by the Admissions Office.

Courses and programs offered at the junior and senior levels are generally considered to be "upper level."

Generally, a student enrolled in the College of Basic Studies will be eligible for admission to an upper level college when he has completed the lower division requirements of the College of Basic Studies, taken a comprehensive examination some time during his sophomore year, satisfied the physical education requirements, and completed at least 90 quarter hours with at least a 2.0 ratio. A student with 81 hours and a ratio of 2.0 or better may be admitted with special permission of the dean of the college involved. Qualified students will be identified and referred to an upper level program by a member of the College of Basic Studies advising corps.

In addition, students must meet the specific admission requirements of the college to which they are applying. These requirements are shown else-

where in this catalog and should be verified with the college before application is made.

Students transferring into upper level college programs from other institutions must meet the same standards and requirements as those whose first two years were taken at the University of South Florida.

All students must complete at least the last 45 hours of their undergraduate credit in on-campus courses or in one of the approved exchange programs (*after* having been accepted to an upper level program) to qualify for a University of South Florida degree.

DOUBLE MAJOR

Students may elect to graduate with two majors in disciplines within the same division, the same college, or in more than one division or college. In that event, the student should meet all requirements of each major separately. He must apply independently and be assigned an adviser in each discipline. He must be certified for graduation by the appropriate dean or divisional director for each major.

CHANGE OF MAJOR

Any student *in the upper level* who wishes to change his major must obtain the Change of Major form in the Registrar's Office. This form must be signed by the student's adviser, the dean or director of the former major, and the dean or director of the new major. A copy of the completed Change of Major form must be returned to the Office of Records & Registration.

APPLICATION FOR GRADUATION

Each student who plans to complete his graduation requirements by the end of a term must complete the Application for Graduation within fifteen class days of the beginning of the term he is graduating in. The application is available at, and after completion must be returned to, the Office of Records & Registration.

Graduation Requirements

While each college sets specific requirements for graduation, the general University requirements must be met by every student upon whom a degree is conferred. These general requirements specify that a student must attempt and pass at least 180 quarter hours of credit plus physical education requirements with at least a "C" average for all University of South Florida courses attempted in order to be eligible for graduation. The hours for a course which has been repeated may be counted only once toward this minimum 180 quarter hours of credit. At least 60 of his quarter hours must be for upper division level work (courses numbered 300 or above).

In addition to specific requirements of their major and of the college in which they are enrolled, candidates for graduation must also pass the senior seminar offered by the College of Basic Studies, and be recommended for graduation by the dean of their college.

All students must complete at least the last 45 hours of their undergraduate credit in on-campus courses after having been admitted to an upper level college to qualify for a University of South Florida baccalaureate degree.

Approved exchange program students may take courses off-campus which will be considered as on-campus courses.

Also, Cooperative Education students, while on their training periods, will have any work taken at other institutions (approval having been given by USF advisers and other appropriate personnel) counted as residence work.

If changes are made in major or graduation requirements during the time a student is enrolled in the University, the student has the choice of graduating under either the old or the new requirements.

While every effort will be made to give each student appropriate advice in meeting major and graduation requirements, the final responsibility for meeting these rests with the student. He should study the catalog carefully and seek advice when in doubt. In any case, he should check with his dean or divisional office when he has reached 135 quarter hours to make sure that his program plans are complete.

Specific requirements of the several colleges are listed under their respective sections.

SECOND MAJOR

Once a student receives a specific degree at the University of South Florida, he cannot receive a second one. However, he may apply for a second major. After acceptance by the appropriate college or division and proof of completion his "permanent academic record" will be posted accordingly.

A student applying for a second major must do so within the same deadline set for applying for a degree.

GRADUATION WITH HONORS

Each student graduating with a baccalaureate degree from the University with a grade point ratio earned at USF of 3.5 or higher will receive a special notation on his diploma indicating that he has been graduated with honors.

In addition to the above, transfer students must have a grade point ratio when combined with previously attempted college work of 3.5 or above.

Availability of Courses and Programs

The University does not commit itself to offer all of the courses, programs and majors listed in this catalog unless there is sufficient demand to justify them. Some courses, for example, may be offered only in alternate quarters or years, or even less frequently if there is little demand. Some of the less popular majors may not become available until later in the University's development. Students wishing such majors may take what is offered here and major in some closely related field or transfer to an institution which offers the desired program.

Notice of Change

Notifications regarding change of address, change of name, change in marital status, change in residency, and change of citizenship should be filed promptly with the Office of Records & Registration.

Intra-American Exchange Program

Through a reciprocal exchange agreement, University of South Florida students may study for one academic year at the University of Massachusetts in Amherst, Massachusetts. Exchange students are selected in the spring (third) quarter preceding the exchange year. Acceptable grades are transferred to the University of South Florida and counted as credit toward graduation. University of Massachusetts students enjoy the same exchange opportunity.

Florida College Exchange

Through an exchange agreement, students of the University of South Florida, with the approval of their advisers, may elect courses in Greek, Hebrew, Bible, or religious education at nearby Florida College. Credit for acceptable work may be transferred to the University and counted as elective credit toward graduation. Students from Florida College have a similar transfer arrangement.

Costs for students under these dual enrollment plans are based on credit hours of work taken, and payment is made to the appropriate institution in accordance with its per-hour fee rate.

Bachelor of Independent Studies Degree Program

The Bachelor of Independent Studies Degree Program is designed especially for adults twenty-five or over who are unable to dedicate a block of time in residence to complete a regular degree program. See page 54 for further information.

The Traveling Scholar Program

The University System of the State of Florida has a Traveling Scholar program which will enable 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. For procedures and conditions, see the section on Graduate Study.

University of Florida Correspondence Courses

Because the University of Florida has been designated as the only institution in the State University System to offer correspondence courses, the University of South Florida will consider such courses as resident credit—with the grades not transferable.

Selective Service

To receive a (II-S) Student Classification, male students must:

1) File SS Form 104 with their local board
2) Complete a USF Selective Service Information Request Form at Registration or in the Office of Records & Registration, ADM 264, within 10 days following registration.

The University assists the student by submitting an Enrollment Certificate at the time he is first enrolled and yearly thereafter to local draft boards for every full-time male undergraduate and graduate student who has a selective service number on file at the University.

Note: Undergraduate students must enroll for at least 12 quarter hours to be considered full-time. The Selective Service System requires the completion of 45 quarter hours each academic year. Graduate students must enroll for 9 quarter hours to be considered full time.

Students desiring further information or needing additional Selective Service certification should request this from the Office of Records & Registration.

Veterans Administration

The University of South Florida is approved by the Veterans Administration for the education and training of G. I. Bill beneficiaries. As of December 1, 1968, the beneficiaries were greatly expanded to include widows of servicemen, and in some cases persons may receive benefits from more than one grant. Even though the Office of Records & Registration is the certifying office for these beneficiaries, all students eligible for benefits should contact their nearest Veterans Administration Regional Office for information and counseling. Enrolled students may contact the Veterans Administration Regional Office, P. O. Box 1437, St. Petersburg, Florida 33731, even though they do not come under this Region.

Effective December 16, 1970, in accordance with Section 1775 (a) (1), Chapter 36, Title 38, U.S. Code, State approval was extended to cover the accredited courses and programs listed in the Continuing Education Bulletin, Quarter II, 1971, for the enrollment of veterans and war orphans.

Note: Full-time status for undergraduate students varies each quarter. Students should consult the class schedule each quarter for changes. Graduate students must schedule a minimum of 9 quarter hours to maintain full-time status. Co-op students must maintain full-time status while in classroom to avoid termination of benefits.

Social Security

The Social Security Administration requires the University to submit an enrollment certicate for students between the ages of 18 and 22 receiving educational benefits under the Social Security Act. Students receiving these benefits must be and remain full-time students. Students must enroll for 12 quarter hours to receive full-time benefits.

Inquiries relating to Social Security benefits should be addressed to the student's local Social Security office.

College Level Examination Program (CLEP)

Students who have a strong background in general education may earn

up to 45 hours of credit at USF through the CLEP program. The CLEP program consists of five tests taking six hours to complete at a cost of $15.00. Arrangements for the tests may be made through the Office of Evaluation Services. It is not necessary for a student to take the entire set, although the cost would still be $15.00.

Successful completion of any of the tests means performance at or above the 50th percentile, sophomore norms. Credits assigned for successful completion of the tests are as follows:

Test	*CBS Credit*	*Elective Credit*
English	8 hours for CBS 101-2	1 hour
Humanities	5 hours (the remainder of the requirement may be met with any one of CBS 308, 315, 316 or 317).	4 hours
Social Science	9 hours for CBS 301-2	—
Mathematics	—	9 hours
Science*	—	9 hours

* If the physical science subscore equals or exceeds the 50th percentile, the student can take 6 hours credit for CBS 208-9 and 3 hours elective credit. In this case, he needs to take CBS 210 to complete the physical science sequence.

The following restrictions will apply

1) A student may not receive both transfer credit and CLEP credit in the same area. Normally, whatever occurred at the earliest point in time is what should appear on the student's permanent record.
2) The maximum number of hours for which a student can obtain credit from extension, correspondence, and USAFI courses, combined with the CLEP, is 45 hours.
3) The student cannot receive credit by way of the CLEP if he has already taken courses at an instution of higher learning covering the area of concern.

Academic Advising

At the University of South Florida, academic advising is the province of the teaching faculty. It is thus an extension of the teaching function—a conscious concern for the academic and educational questions that most students have about the importance of their studies, the proper direction of their educational development, and the practical values of their educational objective.

It is the responsibility of the College of Basic Studies to provide an advising program for students during their first two years of study. The new student should contact the Coordinator of Student Advising in the College of Basic Studies for an adviser assignment. Since the beginning student gener-

ally is in greater need of advice and guidance, a selected corps of advisers serves students who are registered in the College of Basic Studies. Faculty members participating in the program represent all of the colleges and divisions of the University and are chosen because of their interest and experience in curricular advising.

The advising of students entering the upper level programs is the responsibility of the Colleges of Business Administration, Education, Engineering, Liberal Arts, and Nursing. The new upper level student should contact the Office of Student Advising in the appropriate division office of the College of Liberal Arts or the Student Advising offices in the other Colleges.

A student usually meets once each term with his adviser for purposes of program planning. However, he is encouraged to visit his adviser whenever he feels in need of help with academic or personal problems. Although the adviser is essentially a resource person for assistance with academic and curricular matters, he can often refer the student to a source of specialized help when the problem is one with which he is not qualified to deal.

Although it is not necessary for a student to have a specific educational goal in mind at the time he enters the University, he should discuss with his adviser any general educational objective he might have at their first meeting. Some courses of study require enrollment in key courses during the first year if the student is not to lose time in his work toward a degree. Both engineering and the medical sciences are curricula which illustrate this point. Provisions are made to permit a change of adviser when it appears to be in the best interests of the student. A change of educational objective is the most common reason for reassignment, but reassignment may be made at any time the student or adviser believes a change is desirable.

While the University provides advising services to assist students with academic planning, *the responsibility for seeing that all requirements are met rests with the student.*

SPECIAL ACADEMIC FEATURES

The University of South Florida seeks to achieve its objectives not only through its formally organized colleges and courses but also through certain special services. These are programs or activities which clearly are designed to enhance the education of students but do so through means other than orthodox courses and classes. Many of these do not even offer academic credit, although some may be means by which students do earn credits. Regardless of whether or not these activities count toward the definite graduation requirements, they can be tremendously significant in the lives of students who participate in them.

One of the special programs within the academic area of the University is the Cooperative Education Program whereby students may blend the theory of the classroom with experience in the outside world, the world of reality. (See section on Cooperative Education Program)

CREDIT BY EXAMINATION

Students may apply to take lower division basic studies courses by Credit by Examination. If the application is approved and presented at registration, they take the final examination near the end of the term. Those making "B"

or higher on the examination will receive college credit for the course. Those making "C" are still eligible for waiver but without credit. Those making "D" or lower lose the waiver privilege and must take the course in class or use the course as one of the two authorized omissions. Students who have completed more than two college courses in the field of study concerned may not earn credit by examination; however, they may take the examination and secure a waiver by scoring a "C" or higher. Note: The regular "incomplete grade" regulations and fee structure apply to all courses scheduled through the credit by examination procedure.

INDEPENDENT STUDY

Graduate or undergraduate students wishing to take a course by independent study must contact the instructor of the course and complete a *written contract.* This contract specifies the requirements to be completed by the student including tests, periodic class attendance, term papers, etc. If the course is in the College of Basic Studies, approval for independent study may be given by the course chairman. A copy of the contract is to be sent to the Coordinator of Independent Study.

Not all courses in the University can be taken by independent study. The respective colleges have jurisdiction in the determination of which courses may be taken in this manner.

The regular grading system applies to all independent study students. Grades earned by independent study have the same status as those acquired through regular class attendance. Students taking a course by independent study must register for the course in the regular manner and for a specific section.

ADVANCED PLACEMENT CREDIT PROGRAM

The University of South Florida participates in the Advanced Placement Program conducted by the College Entrance Examination Board, which provides 13 college-level advanced placement examinations in American history, biology, chemistry, English, European history, French, intermediate German, advanced German, Latin IV, Latin V, mathematics, physics, and Spanish, Examinations in Russian are being added.

Examination papers are graded by selected committees on a five-point scale: 5—high honors, 4—honors, 3—good, 2—credit, 1—no credit.

The University allows automatic advanced placement credit for scores of 3, 4 and 5, and allows advanced placement with or without credit for scores of 2, upon recommendation of the program concerned.

Credit may be applied to basic studies courses where appropriate, or to comparable liberal arts courses as best fits the needs of the student.

Participation in this advanced placement program does not affect the University's regulations concerning waiver, credit by examination, independent study, or other provisions for the advanced placement of qualified students.

ADVANCED PLACEMENT NON-CREDIT PROGRAM

Frequently a superior student, particularly in the fields of science and mathematics, is allowed to enter advanced courses in those subjects. It is possible for students well trained in mathematics to enter calculus as freshmen. It is also possible for well trained students to enter physics or chemistry without having other college level science. Before permission is granted to do so, students are required to take a science and mathematics examination to determine whether or not they actually have the knowledge and competency to

succeed in these advanced courses. This same procedure is applied to other subjects.

EXTRA LOADS

The normal load for full-time students ranges from 12 to 18 quarter hours each term. For most students seriously involved in study this is ample. For some students, however, an overload is the best way for them to gain maximally from their college education.

Registration for more than 18 credits requires approval of the dean or division director of the student's college. A first-quarter freshman is only rarely permitted to undertake more than 18 credits. Thereafter, permission may be granted if the student's grade point is 3.0 or higher. Freshmen and sophomores who wish to carry more than 18 credits should be referred to the Dean of the College of Basic Studies or to the Coordinator of Advising.

HONORS

The University of South Florida, emphasizing as it does solid academic achievement, is developing ways of recognizing distinguished student achievement. An Honors Convocation is held each fall quarter to recognize those students who have maintained a grade point ratio of 3.5 or better in 12 or more quarter hours attempted at USF in each of the three quarters of attendance within the academic year immediately preceding the Convocation (hours earned in S-U graded courses are excluded). Cooperative Education students may substitute one training quarter for one of the three-on-campus quarters.

The Phi Kappa Phi honor society recognizes outstanding students.

DEANS LIST

Full-time undergraduate students who demonstrate superior academic achievement, on the same basis as above, but during one quarter, will be honored by qualifying for the "Dean's List." The Dean of the College in which the student is majoring will award a certificate in recognition of this academic honor. Each degree-seeking undergraduate student will be recognized and honored after each quarter in which he demonstrates superior academic achievement.

GRADES

The University of South Florida maintains a five-letter grading system. While pluses and minuses may be used for computation of grades or other purposes, no pluses or minuses will be recorded on students' permanent records. The five letters are:

A—Superior performance
B—Excellent performance
C—Average performance
D—Below average performance, but passing
F—Failure

In addition, the following grades are given as explained below:

S—Satisfactory
U—Unsatisfactory
W—Withdrawal from course without penalty
X—Incomplete
X—An "X" grade may be used for any authorized failure to meet

the requirements of a course. Until removed, the "X" is computed in the grade point ratio as "F" for undergraduate students. For graduate students, there is no computation for an "X" grade. The time limit for removing the "X" grade is set by the instructor in conjunction with the University Registrar.

W—A "W" grade indicates administrative approved withdrawal without penalty from the course or courses.

S-U GRADE SYSTEM

Certain courses have been designated by the University Senate or Graduate Council as S-U courses. The "S" and "U" grades are used to indicate the student's final grade. These S-U courses are identified each quarter in the University Class Schedule. No grading system option is available to students or faculty in these courses.

Effective Quarter I, 1970, the university initiated on a trial basis a Satisfactory-Unsatisfactory grading system that would allow students to enroll in most courses utilizing the S-U grading system. Excluded courses are: CBS 401, the Internship Block in the College of Education, and "S"-"U" PEB courses necessary to fulfill graduation requirements. Participation in this system is at the discretion of the college, department or individual (student or faculty). It is the responsibility of the college to notify students during the first class session if the course is to be offered on an S-U basis. It is the responsibility of the student to secure approval from the instructor to take the course on an S-U basis.

Quotas, exclusive of CBS 401, the Internship Block, and "S"-"U" PEB courses necessary for graduation requirements, will be one course per term with the maximum number of total hours not to exceed 15 quarter hours. The S-U courses required for graduation are not part of these quotas.

S-U grades do not affect the student's Grade Point Ratio since no grade points are assigned to either an "S" or "U" grade. However, the student will receive quarter hours credit for the course toward his degree if an "S" grade is attained.

GRADE POINT RATIO

The University has a system of grade points used in computing grade point ratios. (A=4 grade points, B=3, C=2, D=1, F=0.) Grade point ratios are computed by multiplying the number of credits assigned to each course by the point value of the grade given. The total of the credit points for all courses taken divided by the total number of quarter hours attempted equals the grade point ratio. For example, a student attempting five three-credit courses who earned two A's, two B's, and one F, would have a grade point ratio of 2.800.

If a student repeats a course for any reason, his grade point ratio will include each grade received. For example, if a three-hour course is repeated, it is computed as six quarter hours attempted.

ACADEMIC SERVICES

Computer Research Center

The University maintains centralized, high-speed electronic computer facilities for use in teaching, research, and administration. This Center has a Systems

Planning Department which assists University Administrative Offices, a Faculty Consulting Department responsible for facilitating the use of computers in relation to classroom teaching and research conducted by faculty and students and an education unit which sponsors non-credit seminars in computer languages such as FORTRAN and COBOL, as well as other subjects relative to the use of computers. Finally, a central corps of programmers service the University computer needs as expressed through the systems and consulting departments.

Computer facilities have expanded with the University from an IBM 1410 in 1969 to an IBM 360/65 system in 1970. As demand increases, remote batch processing terminals and other on-line terminals will be added and will use the centralized computer.

In addition to computer facilities, the Computer Research Center maintains keypunch, sorter and electronic calculator devices in "open use" areas on a 24-hour basis to assist students and faculty in preparation, processing and checking of their data.

Educational Resources

The Division of Educational Resources offers the following services:

Audio-Visual Services. Audio-Visual Services make a variety of equipment and instructional materials available for the classroom, University events, and other functions. Such equipment includes public address systems, tape recorders, and projectors of all kinds. Various types of audio-visual equipment can also be rented.

Production Services. Graphic, photo, and cinematography services for use in the classroom as well as the overall University program are produced here.

Broadcasting Services. Radio and television are a part of the Broadcasting Services. Radio WUSF is an FM stereo station operating on 89.7 mhz. WUSF-TV, Channel 16, UHF, is a non-commercial television station serving the University and the communities of the nine surrounding counties. These facilities are used as a laboratory for students enrolled in the broadcasting curriculum.

Instructional Materials Center. The Center maintains a collection of records, filmstrips, filmloops, tapes, transparencies, maps, slides, and a curriculum library of elementary and secondary instructional materials. All items circulate to students and staff for study and recreational use.

Film Library. A large collection of 16 mm films is maintained to support instruction. Preview, booking, scheduling and showing of films is offered. Films not a part of the University Film Library will be requested from other sources through this agency.

Learning Laboratory. A telephone dial-access audiovisual laboratory is available for instructional purposes. Over 190 different audio programs are accessible at one time. A switchboard handles outside calls for audio programs. Video tapes, 16mm films, slides, and television programs make up the 12 video sources available in the laboratory. These programs may also be channeled to on-campus classrooms via the closed circuit capabilities of the Learning Laboratory.

Student Production Center. The center offers both graphic and photo facilities for staff and student use.

Office of Evaluation Services

This office conducts testing programs, test scoring, and institutional research. Testing services consist of those for admission to colleges and special programs, graduate and professional school admission such as the Graduate Record Examination, foreign language proficiency, and many other special programs.

Test scoring, statistical analysis of tests, and advisory service in test construction are provided to faculty and other agencies.

The office serves as the research arm of the Institutional Research Committee in the evaluation of academic programs within the University.

The Library

It is important that a library should take into account not only the books on its shelves but also the people it serves. This point of view is central in the philosophy of the University of South Florida Library. A library is good, not because of the volumes it has, but because it is used by people who derive personal benefit from its use and who produce something as a result of its use that will be of benefit to our society.

The Library staff wants students to regard books as a way of life and use the Library regularly. One of the reasons for providing a library collection is to encourage students to buy, read and discuss books and feel bereft when deprived of books. The University expects students to become thoroughly familiar with the University Librarry book collection, to master the techniques of using it, and—before graduation—to achieve a familiarity with books which will carry over into later life.

The University Library has approximately 300,000 volumes and seating for 800 readers.

The Circulation desk, Reserve reading room, Special Collections, and recreational reading books are on the first floor. Special Collections include the Florida collection, rare books, University archives, and the Florida Historical Society Library.

The Reference collection and current periodicals are on the second floor. The Reference staff assists students in the use of Library materials and of the card catalog which is in the Reference department.

In addition to more than 3,000 periodicals, the Library subscribes to newspapers from Florida, major cities in the United States, and many foreign countries.

The circulating book collection is on the third floor and bound periodicals and U.S. government documents are on the fourth floor. The Library is a depository for U.S. government publications. All books, with the exception of reserve materials and Special Collections, are in open stacks. All students have the opportunity to become familiar with the Library holdings by browsing in the stacks.

Division of Sponsored Research

Research is an important aspect of the education programs at the University of South Florida. Faculty members are encouraged to pursue research ac-

tivities, and many students participate in research and training projects supported by funds given to the University by public and private granting agencies. Research is integrated with the instructional program in a very real sense.

The Division of Sponsored Research is the central coordinating unit for research and other sponsored educational activities on the campus. It provides information about granting agencies and serves as a consultation center for faculty who desire help in processing research proposals.

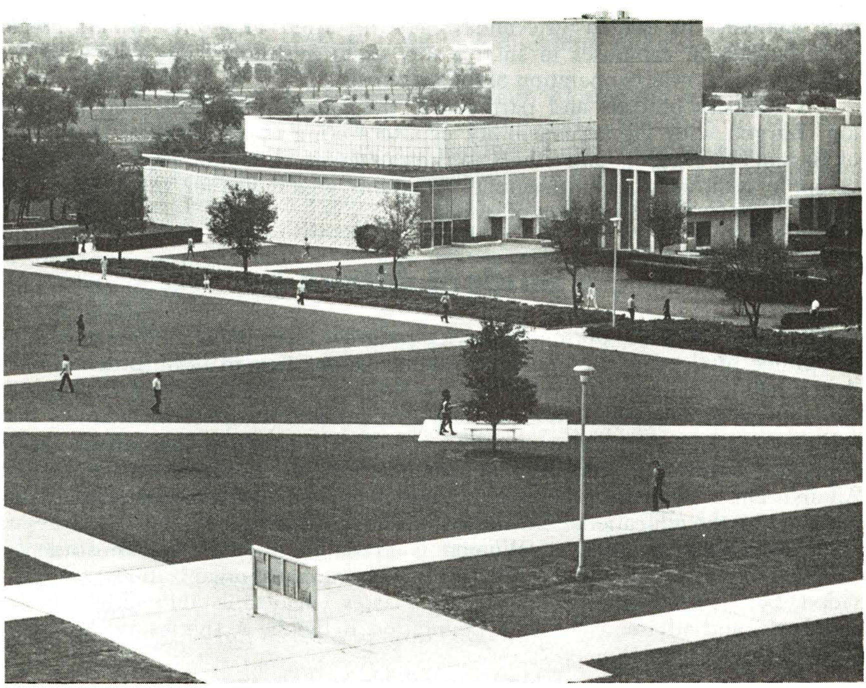
Although the Division of Sponsored Research operates primarily for the benefit of the faculty, students who have an appropriate interest in research are welcome to visit the office.

Center for Research and Development

In the spring of 1966, the University of South Florida Center for Research and Development was established to house multi-disciplinary sponsored projects such as Aging, Marine Science, Exceptional Children and Adults, Speech Pathology and Audiology, and Rehabilitation.

The USF Center is structured within the Office of the Vice President of Academic Affairs and is directed by an Assistant Dean of Academic Affairs. Faculty research positions are used to supply continuity for research and demonstration projects and to initiate new programs of benefit to the University and the State of Florida.

University Theatre/Auditorium



STUDENT WELFARE

The University of South Florida is dedicated to the intellectual, social, and moral development of students in order to provide responsible leaders who can work effectively in a democratic society. The university has a concern for the total life of the student as well as for his classroom performance. Diversity of opinion, criticism, and dissent are essential in discharging these responsibilities, and this has been set forth and safeguarded in the Board of Regents' Operating Manual.

As a condition for admission to one of the State Universities of Florida, students agree to abide by the policies of the Board of Regents and by the rules and regulations of the institution. The University has the right and responsibility to determine who shall be admitted to the institution; the conduct or behavior acceptable to the institution; and under what conditions one may continue as a student. Administrative due process and the right of review in all disciplinary hearings are provided by the University.

Academic freedom and free inquiry in the State Universities can be preserved only if protected from outside manipulation and subversion. The universities must be protected from those persons who would disregard normal channels by which grievances may be aired and who would create disturbances on campuses in such a way as to impede or interfere with the educational or orderly operation of the university.

University officials and particularly the Dean of Students and his staff are charged with the responsibility of interpreting the policies of the Board of Regents to students and others in the university communities, and with developing positive student personnel programs which further the intellectual, social, and moral development of students.

Student Affairs

Implementation of the personnel service program for students is the concern of the Office of the Dean of Student Affairs. Orientation of new students, residence hall programs, University Center programs, scholarships, financial aid, student health, student activities, student organizations, class attendance, disciplinary action, personal counseling, physical education, recreation, intercollegiate athletics, and student publications are programs of Student Affairs. The University provides the leadership and professional services for maintaining the educational philosophy of this program.

The Office of Dean of Women is available to help women students. Personal counsel and advice about student women's organizations are provided by this office. Attendance in classes, academic difficulties, social standards, and advisement to the Council on Religious Activities are also concerns of the Dean of Women.

The Office of Dean of Men is available to help men students. Personal

counsel, advice about organizations, social standards, and orientation of new students are concerns of the Dean of Men. This office also serves in an advisory capacity for foreign students and fraternities.

Experiences which develop in students a firm and enlightened belief in democracy, an understanding of its methods, and a sense of personal responsibility are essential for a free society. The social experiences of working in extra-curricular activities provide valuable personal understanding, emotional maturity, recreation, and social skills. Out-of-class activities of the University are related to these ends. Student activities, clubs, and organizations are incorporated in the University's total educational program through the staff of Student Affairs and faculty advisers. The Director of Student Organizations, Dean of Women, Dean of Men, and the University Center and residence halls are particularly concerned with this co-curricular area of student life.

Information and advice about student organizations are provided by the Office of Director of Student Organizations. The office assists in the organization of new groups and serves as an advisory center for programs of activities, membership requirements, names of student leaders, financial advice, and assistance for advisers. Active participation in student organizations is a valuable part of a student's total education, and develops desirable qualities and traits of leadership, personality, and character.

Student Conduct, Dress, and Discipline

Social standards governing activities of student groups have been developed jointly by students, faculty, and the Student Affairs staff. Social standards boards review violations of these codes. Self-discipline and awareness of social obligations are the objectives of the program.

Students attending the University of South Florida are considered to be responsible young adults studying with their faculty colleagues in search of knowledge. Rigid regulation of personal conduct should not be necessary.

Freedom must be balanced by individual responsibility and respect for the rights and freedom of others. Students will, therefore, be considered responsible for their own decisions and actions both on or off campus. Failure to assume this responsibility or actions which jeopardize the rights, freedoms and safety of others, and the integrity of the University will result in disciplinary review.

Just as the University expects high standards of academic performance, so does it expect high standards of individual conduct. Similarly, it expects dress to be appropriate to the activities in which the individuals are engaged.

Noticeable or gross departures from expected standards of conduct or dress on the part of students will first be considered errors in judgment. Advisers or other officers of the institution will discuss such lapses with the student concerned. Persistent violations of expected standards or established regulations will involve appropriate disciplinary action. The University may deny admission or continued attendance to those whose decisions and actions are contrary to the purposes and procedures of the University.

Students participating in the University's Cooperative Education Program will be expected to dress appropriately in accordance with the Cooperative Education Policy pertaining to dress and personal appearance.

Automobiles

Students may use automobiles on campus. Parking facilities are provided for resident and commuter students. All automobiles used on campus must be registered with the Security Department and the Traffic Regulations adhered to. There is a nominal charge for vehicle registrations.

Bicycles

Students may use bicycles on campus. Parking blocks, bicycle racks, and designated areas in parking lots are available to park bicycles. All bicycles used on campus must be registered with the Security Department and the Traffic Regulations adhered to.

Student Association

The Student Association includes all regularly enrolled students of the University. Each student carrying seven or more credit hours per quarter is a voting member of the University of South Florida Student Association. Through its councils and elected officers, the association directs many student activities. Elections for membership on college councils and for Student Association offices are held regularly.

Representation in the Student Association Legislature is based on proportional representation from the residence areas, the colleges, and commuters. College representation is based on the senatorial system.

The Student Association is the medium through which students participate in the program of University life.

Insurance

TRAVEL INSURANCE

Students may obtain accident insurance for a nominal charge at the USF Bookstore in the University Center for field trips and personal travel.

PERSONAL PROPERTY INSURANCE

Students living in the residence halls may obtain insurance on personal property at the rate of $7 for personal property valued up to $500. Applications are available in the Housing Office, and payment is made to the Cashier in the Finance and Accounting Office.

Orientation and Enrollment Program

At the beginning of each quarter, prior to the beginning of classes, all new students are expected to participate in the Orientation and Enrollment program of the University. This program is designed to help new students become acquainted with the university procedures and regulations and to learn of the University's expectations of its students. Those sessions which are information-gathering are necessary for enrollment, and those that are information-giving are considered the orientation aspect of the program.

Housing

The housing program of the University is part of the total educational plan. Functional, pleasant living conditions contribute to a student's scholarship, habits, and attitudes. The residence hall program emphasizes attractive surroundings, opportunity for group activity, self-government, and counseling services of professional people. Provision of adequate living conditions is a responsibility shared by students, parents, and the University.

Regularly enrolled students paying the registration fee for full-time attendance are eligible to live in University residence halls. An application for a room in University Residence Halls is sent with the Official Acceptance notification. Housing assignments are made without discrimination as to race, color, or national origin.

RESIDENCE HALLS

Accommodations for students are available in the University's modern residence halls. Residences are completely air conditioned and provide for the living, educational, social, and personal needs of students.

In general, rooms are furnished with beds, dressers, mirrors, desks, lamps, drapes, and chairs. Linen service is provided. In each living unit, composed of between 40 and 50 students, a Resident Assistant is available to assist students. A Resident Instructor for each hall is available for personal and academic counseling.

The University's residence halls are grouped in units called complexes. The first completed complex—Argos—includes three residence halls grouped around Argos Center, which serves as the living and dining rooms of these halls. In addition to the lounges and cafeteria, Argos Center has a recreation room, conference rooms, and Argos Shop (an annex of the University Campus Bookstore). The students residing in these halls live in study-sleeping rooms. An outdoor swimming pool in this complex is also available for student use.

Andros Complex—consisting of nine residence halls—provides a different type of living arrangement for students. Suites are designed to accommodate eight students—two students sharing a bedroom, four students sharing a study room, and eight students sharing a bath. In addition, each living unit has its own lounge. Andros Center is also considered the living and dining rooms of the students residing in this complex, and has most of the same facilities as the Argos Center.

OFF-CAMPUS HOUSING

The University has approved two private residence halls which have met University regulations pertaining to operation and staffing. Information regarding these facilities is available through the Housing Office.

The Housing Office maintains a list of off-campus housing. Listings are accepted only from householders and landlords that do not discriminate because of race, color, or national origin. Rental arrangements may best be made after personal inspection of facilities and conference with the householder before the University opens. Fall quarter arrangements may be made during the summer.

FOOD SERVICE

All students in residence halls on the campus have available three meals a day in cafeterias and snack bars. A variety of food plans are offered through two food service contractors. Several small dining rooms may be reserved

by committees or special groups wishing to take their trays to a private place for luncheon or dinner meetings.

Student Health Service

Comprehensive health care is provided for full-time students through the University Student Health Service.

A medical examination must be filed by each full-time student prior to registration, including certification of recent immunizations against smallpox, tetanus, and polio. The required form for the examination is provided by the Health Service.

An outpatient clinic, with laboratory and physiotherapy facilities, is maintained. Infirmary care is available for students with illnesses precluding attendance at classes. University physicians have daily office hours, except weekends; and emergency care in the Health Center is available continuously, including nights and weekends.

Counseling Center for Human Development

The Counseling Center, located in the Social Science Building, provides services for students desiring professional assistance in the areas of reading-study skills, vocational guidance, personal counseling, psychiatric consultation, tutoring, speech and hearing, and Vocational Rehabilitation. These services are available to assist students in evaluating and remedying problems which interfere with efficient learning and satisfying participation in campus life.

The Reading-Study Skills Service provides diagnosis and evaluation of reading skills and study habits. Two approaches are offered: (1) non-credit classroom courses are offered which include extensive instruction and practice in word attack, vocabulary, and comprehension skills; (2) an Independent Study non-credit course is available with the emphasis on the unique individual need. Reading-Study Skills Laboratory Service is available for all students enrolled in either the classroom or independent study sections. Regular registration procedures will be followed for either of the above courses. Visual screening is also available.

The Speech and Hearing Service offers diagnostic, evaluative, and therapeutic sessions for students whose speech and hearing interferes with effective communication, or may not meet later academic or vocational requirements. Speech and hearing screening is required for all new entering students. Individual therapy is available for students who are referred or feel a need for specific speech improvement.

Counseling Services are available in the Center (and in the Satellite Services in the residence complexes) to any student who wants personal or career counseling. Personal counseling is aimed at helping people understand themselves and achieve personal potentials. Career counseling utilizes interviews, diagnostic tests, and a career library to help the student reach his academic and career goals.

Students desiring special assistance in their courses may apply to the Counseling Center for tutoring provided by other students in various subjects and courses. Fees are charged by the tutors according to standard rates established by the Counseling Center staff.

Psychiatric Services aid the student when medication, hospitalization, or

psychiatric evaluation is needed. Evaluations by the Counseling or Psychiatric Services in conjunction with administrative decisions of the Dean of Students, Housing and Food Services, academic colleges or departments, and individual faculty will be rendered only at the request of the student and with a written "Release for Recommendation" signed by the student.

Vocational Rehabilitation is a State of Florida service located in the Counseling Center to facilitate the University students' utilization of aid available.

Application for any of these services of the Counseling Center may be made by any student at any time and as often as desired. Center staff and faculty limitations will restrict servicing of new applications to emergencies during peak periods.

Financial Aids

The student financial aids program at the University of South Florida is intended to assist qualified students to obtain a university education when they might otherwise lack financial resources. Financial assistance, with the exception of Service Awards, is granted on the basis of financial need, academic promise or attainment, and character.

Scholarships are available, suited to student financial need and academic promise. Registration-Fee Work Scholarships are awarded, which would require about four hours of work on campus per week. University of South Florida Foundation Grant-in-Aid Scholarships and Service Awards are available, if the student makes timely application and is qualified for the award.

Scholarship applications are accepted only once each year, and must be filed no later than February 1 for scholarships which will begin with the fall quarter.

National Defense Student Loan applications for the entire academic year and/or first quarter must be filed not later than March 1. Applications for other quarters may be filed at any time; however, availability of funds will be the controlling factor in granting loans after the original deadline date.

National Defense Education Act Student Loans permit entering freshmen, transfer students, and continuing students to borrow up to $5,000, with a maximum of $22 per quarter hour carried each quarter. Repayments begin nine months after the borrower ceases to be a full-time student, at which time the loan draws interest of three percent. Payment must be made within ten years. Part or all of this loan may be cancelled if a student teaches in a public elementary or secondary school, college or university after graduation, or by active duty in the Armed Services of the United States after receipt of the loan. Payment is deferred if the student enters the Peace Corps or *Vista*.

U.S. Cuban Education Loans are available to Cuban Nationals on the basis of financial need, and who have not attained permanent residency in any state. This program parallels the National Defense Education Act Student Loan qualifications, and the amount which may be borrowed.

Florida State Education Loans permit any student who has been a resident of Florida for a minimum of three years to borrow an amount, not to exceed $1,200 per academic year, on the basis of the financial need analysis of the student. Repayments begin four months after the borrower ceases to be a full-time student, at which time the loan begins drawing four percent interest. Repayment of the loan must be completed within five years.

The Law Enforcement Education Program (LEEP) has been established

under the Omnibus Crime Control and Safe Streets Act of 1968. It is administered by the Justice Department for the purpose of providing financial assistance to allow in-service law enforcement officers to continue their education at the college and university level, and to provide funds to encourage young men and women to criminal justice careers after they have achieved college degrees. Assistance is authorized in the form of grants and loans, up to a maximum of $1,800 for the academic year.

Additional long-term loans may be granted, subject to the availability of funds, from the following programs: USF Student Loans, USF Special Opportunity Loans, the Henry & J. Edward Rosenzvaig Memorial Fund of the National Council of Jewish Women, the Shane Fund, the Marty Starns Memorial Loan Fund, Sertoma Club of Tampa Loan Fund, James J. Love Memorial Scholarship Loan Fund, Selby Foundation Scholarship Loans, Pan-American Women's Club Loans, and B'nai-B'rith Women of Tampa Loan Fund.

Long-term loans may be available from home-town participating banks through the Federally Insured Student Loan Program. Loans are not payable until the student graduates, or leaves the University. More information on this Program is available in the Office of Financial Aids.

Short-term loans are available from the Louise Ramey Fund and the American Institute of Mining, Metallurgical and Petroleum Engineers, Inc. Junior-Senior Short-Term Loan Fund. Short-term loans are made available to foreign students through the Ann and Henry Jander Memorial Loan Fund.

The following scholarships are available to qualified students: Alcoa Foundation Scholarship; Grace Carlton Allen Scholarship; American Business Women's Association Scholarship; American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. Scholarship; Pauline Bush Scholarship; Elizabeth Cone Book Scholarship; Florida Accountants Association Scholarship, Gulf Coast Chapter; Fontana Hall Scholarship; Food Fair Stores Scholarship; General Telephone Company Scholarship; General Telephone Company All-Employee Chorus Scholarship; Patrick Gordon Estate Scholarship; Industrial Supply Corporation Scholarship; Knight & Wall Company Scholarship; Maas Brothers Scholarship; Pan American Petroleum Foundation Scholarship; Personnel Administration Association of Central Florida Scholarship; Pi Kappa Alpha Fraternity Scholarship; Pi Sigma Epsilon Fraternity Scholarship; Radio Station WTMP Scholarship; Readers's Digest Foundation Scholarship; Ione Lister Simmons Creative Writing Scholarship; SPARC Guild, Inc. Scholarship; Sun City Center Woman's Club Scholarship; Tampa Lakes Women's Club Scholarship; Tampa Panhellenic Association Scholarship; Tampa Wholesale Liquor Company Scholarship; Tampa Woman's Club Scholarship; University of South Florida Women's Club Scholarship; USF Registration-Fee Work Scholarship; and Winn-Dixie Stores Foundation Junior-Senior Scholarship.

Information on the following scholarships is available in the office of Financial Aids: Brecht Scholarship; John Stewart Bryan Memorial Scholarship; Delta Delta Delta Sorority Scholarship; Gulf Life Insurance Company Scholarship; Florida State Board of Regents Scholarship; Florida State Teachers' Scholarship; Model Cities Scholarship; Teachers of the Mentally Retarded Scholarship; and Winn-Dixie Stores Foundation Scholarship.

Applications for scholarships and/or student loans should be made to the Director of Financial Aids.

Student Employment under the College Work-Study Program, administered by the Office of Education, Department of Health, Education and Welfare, is available for students from families meeting the income require-

ment for eligiblity. Certification for eligibility must be received from the Office of Financial Aids.

Students with a minimum of twenty-four quarter hours of academic credit and a grade point average of 2.0 or better may apply for a Cooperative Education Team. Further information on the Cooperative Education Program is given on page 55.

Graduate assistantships, scholarships, and fellowships: Students should inquire directly to the head of the department in which they intend to major.

Children of Deceased Veterans should apply to: Mr. Melvin T. Dixon, Florida Department of Veteran Affairs, P. O. Box 1437, St. Petersburg, Fla. 33731.

The Florida Council for the Blind, P. O. Box 1229, Tampa, Florida 33601, provides financial help for blind students.

For the National Scholarship Service and Fund for Negro Students, applications should be made directly to this Fund: Address — 6 East 82nd St., New York, New York 10028.

The Vocational Rehabilitation Division, State Department of Education, Tallahassee, Florida, provides limited assistance to students who are handicapped.

Additional information on financial aid is available in the Office of Financial Aids.

In the award of financial assistance by the University, no student is discriminated against because of race, color, or national origin.

Career Planning and Placement Center

The purpose of the Career Planning and Placement Center division of Administrative Services is to assist students and alumni in realizing their career objectives. This office, together with the Cooperative Education Program and the Financial Aids Office, attempts to insure that economic considerations will not impede the progress of any student who is seriously in pursuit of a college education.

Every effort is made to insure part-time placement for undergraduate and graduate students who express a need for employment. Students may register for part-time placement both on and off campus, as well as for seasonal employment throughout the world. Up-to-date job listings are maintained during the year to assist the student seeking part-time employment.

One of the recognized goals of a college education is to maximize career satisfaction, and the Career Planning and Placement Center exists to facilitate the achievement of this end. The Career Planning Center provides the student with materials on vocational guidance, career opportunities, and employers. It is maintained in the Career Planning and Placement Center as an adjunct to the Graduate Placement Services, the Cooperative Education Program and the Counseling Center for Human Development, for the benefit of all students.

The Career Planning and Placement Center also serves as a central source of information on graduate schools and programs and maintains a variety of material on financial assistance available to graduate students. In addition to graduate school catalogs and information on individual college and university stipends, material and applications are maintained on such national and international awards as Fulbright and Rhodes Scholarships, National Science Foundation Fellowships, and many others. All students with an interest in at-

tending graduate school are encouraged to begin their investigation of opportunities in this office.

Students register with Career Planning and Placement Center early in their graduating year. This enables them to interview on campus with recruiters from educational systems, businesses, industries, and governmental agencies throughout the country. Every registrant receives 25 free copies of his personal resume. In addition, these credentials may be used when applying to graduate school. The above services are also available to alumni desiring career relocations.

University Center

The University Center serves as the hub of campus life outside of the classroom. It provides facilities, services, and programs to enhance the social, cultural, and recreational life of the University. The information service desk serves as the coordinating center for the numerous and varied services and activities of the University Center and out-of-class student life. It is here that student organizations schedule facilities and request services for their various activities. The master schedule of all student activities is maintained at this location.

Many of the University Center's facilities and services provide for personal and social needs. It has conference and activity areas, lounges, a cafeteria, dining rooms, a snack bar, student organization offices, craft and photography areas, a ballroom, book lockers, lounges and television listening, billiards, table tennis, table games, the University Campus Shop and Bookstore, Student Health Services, a magazine browsing library, campus lost and found, and various other services. Food Service, Bookstore and Health Service operations are coordinated through their respective University administrative areas, while the other facilities and services are coordinated by the University Center Director's office.

In addition to providing services and facilities, the University Center also functions as a program. The University Center Program Council is comprised of the chairmen of 10 student committees and three elected officers. The Program Council provides a social, cultural and recreational program under the guidance of professional staff advisers to make leisure time activities more meaningful. The overall program is designed to supply additional experience by providing opportunities for self-directed activities and the attainment of social skills and knowledge.

The Center's program contributes to achievement of the educational goals of the University by providing a laboratory for experience in citizenship —a community center where all may have a part in the direction of community enterprises. Academic and non-academic interests are related so that students' development may be well-rounded and complete. Enhancement of social skills and emotional development of the individual are also goals of the program.

The University Center Program Council has as its objective to provide a balanced program of activities reflecting the special social and recreational needs of all students' out-of-class interests. All activities are planned, arranged, and directed by student committees. A student may volunteer to serve on such committees as dance, hospitality, fashion, music, special events, arts and exhibits, movies, recreation, personnel, public relations and publicity committees.

USF Bookstore and Campus Shops

The USF Bookstore is located in the University Center Building.

The Book Department on the ground floor is stocked with textbooks only. The Merchandise Department on the first floor is stocked with general school supplies, required course supplies, art prints, USF monogrammed clothing, jewelry, sorority and fraternity items, cosmetics, records, greeting cards, sundries, etc. Typewriters, personalized stationery, desk pen sets, class rings, academic regalia, and many other items may be special ordered. Services such as check cashing ($50.00 limit), film development, copying machine, candy and cigarette vending machines are available.

Argos Campus Shop, located in the Argos Complex, has a large selection of hardbound and paperback general books, as well as trade books, children's books, and study aids. Books not in stock may be special-ordered.

The Bookstore for the St. Petersburg Campus, located in the Administration Building, is equipped with required textbooks and supplies, as well as nonrequired paperback books and sundries.

The Pro Shop at the USF Golf Course has a wide selection of golf clubs, bags, and applicable supplies and accessories. These are available to students, faculty, staff, and members of the USF Foundation.

Clubs and Other Organizations

Students have formed clubs, organizations, and councils in almost every field of interest. New groups are being formed and will continue to develop. Groups presently organized cover the most frequently desired kinds of activities.

DANCE, MUSIC AND DRAMA CLUBS

The excellent program in the Fine Arts and the facilities of the Fine Arts-Humanities Building and the Theatre and the Theatre Center have attracted students to various student interest groups. These student organizations—USF Dance Club for those interested in dance, Bay Players for those interested in Theatre, and Phi Mu Alpha and Sigma Alpha Iota for those interested in music—welcome all students to participate. Students are also welcome to join such academic units as the University Orchestra, the University Concert Band, and the University Community Chorus (see Music course descriptions); and Theatre USF and Experimental Theatre (see Theatre Arts course descriptions).

CULTURAL EVENTS

Many of today's outstanding visual and performing artists are brought to the University of South Florida campus each year. The Artist Series provides unusual opportunities for hearing the best music performed. The Exhibition Series provides unusual opportunities to view many varied and significant exhibitions annually in the University's three galleries. These and other programs conducted by the Florida Center for the Arts significantly contribute to the education of students and the general vitality of the campus.

In addition, the Division of Fine Arts arranges a full schedule of concerts, plays, lectures, films, and workshops which feature students, faculty and visiting artists. The events are presented both during the day and in the evening. Many are free of charge.

Most events are open to the general public. The University publishes a Calendar of Events which is available upon request to the Coordinator of Events, Florida Center for the Arts, USF.

STUDENT PUBLICATIONS

The University has encouraged and is developing a growing program of campus communication through various publications. These publications are all-University in approach and coverage. They are staffed by students under the general supervision of the Office of Campus Publications.

An 8-column campus newspaper, *The Oracle*, is published weekly during the school year. Containing 8 to 16 pages in each issue, it provides professional experience for those students interested in journalism. Any student interested in working on the newspaper in any capacity is not only encouraged but urged to participate.

A University yearbook, *The Aegean*, is produced each spring. All students are eligible to work on this publication and gain much valuable experience in photography, layout, editing, and business techniques.

A campus literary magazine, *South Florida Review*, is produced annually. While the magazine is sponsored by the Office of Campus Publications, anyone at the University may submit manuscripts, photographs, or drawings for consideration.

Interested students are invited to apply for staff positions on any campus publication.

FRATERNITIES AND SORORITIES

There are currently fourteen national fraternities and eight national sororities functioning on campus. They carry out a program of social, educational, service, and recreational activities for their members. Membership in these organizations is open to student, by invitation only, once the student has completed 12 credit hours with a 2.0 ("C") average or better. Their programs are coordinated through the Interfraternity Council and the Panhellenic Council with the advice of faculty and staff members.

RELIGIOUS ORGANIZATIONS

The University has encouraged student religious organizations to develop associations and centers. Denominations have built centers in a reserved area on campus. The Episcopal Center was dedicated in the fall of 1962 and the Baptist Center in the spring of 1964. The University Chapel Fellowship followed in 1966. (The center is an ecumenical campus ministry of the following denominations: Methodist, Presbyterian, Lutheran, and United Church of Christ). The Roman Catholic Center joined the others in the fall of 1967.

Student religious organizations active on campus include the Baha'i Club, Baptist Student Union, Campus Crusade for Christ, Catholic Student Organization, Christian Science Organization, Free Religious Fellowship, Hillel of University of South Florida, Independent Christian Church Fellowship, Student Vestry of the Episcopal Church, and the University Religious Council.

SERVICE AND HONORARY

Alpha Phi Omega (men's national service fraternity), Athenaeum (women's honorary), Campus Gold (women's service group), Circle K, Ethos, Gamma Theta Upsilon (geography honorary), Phi Kappa Phi honor society, Kappa Delta Pi (education honorary), Omicron Delta Kappa (men's leadership honorary), Phi Mu Alpha Sinfonia (men's music honorary), Pi Mu Epsilon (mathematics honorary), Pi Sigma Epsilon (marketing honorary), Women of Pi Sigma Epsilon, Psi Chi (psychology honorary), Sigma Alpha Iota (women's music honorary), provide associations for leadership and University service experience.

SPECIAL INTEREST AND ACADEMIC ORGANIZATIONS

Students have organized and continue to organize clubs covering a broad range of special and academic interests. Membership is usually open to anyone having an interest in the club's activities. Clubs active at present include the Action Party, Aero Club, A.I.E.S.E.C. of USF, Afro-American Society, USF Amateur Radio Club, Art Vanguard, Bay Players, Board of Directors, Classical League, COETTS, Computer Club, Environment '70, International Revolutionary Melodious Marching Caucus, Pacifist Action Council, USF Parapsychology Society, Political Union, Radical Action Coalition, Student American Civil Liberties Union, USF Student Missionaries of the New Truth, Student Mobilization Committee, Students for Responsible Government, Student Sociological Association, United Native Americans, Veterans Club, Vocations for Social Change, Whole Earth Cult, USF Young Democrats, USF Young Republicans, Youth International Party, Young Americans for Freedom.

ACADEMIC ORGANIZATIONS

Anthropology Club, Asssociation for Childhood Education, Bay Players, USF Chemical Society, USF Dance Club, Economics Club, Florida Engineering Society, Forensics Club, Geology Club, German Club, Gerontology Club, Italian Club, Library Education Audio-Visual Organization, Marine Biology Club, Masters of Business Association (MBA), Pre-Medical Society, Readers Theatre Guild, Russian Club, Senior Accounting Organization, Student Florida Education Association, Student Guidance Organization, Student Music Educators National (SMENC).

SPORTS CLUBS

Archery Club, Barbenders Club, Competition Karate Club, USF Girl's Karate Club, Hatha Yoga Club, Judo Club, USF Karate Club, USF Parachute Club, Sports Car Club, Tai Chi Chuan Club, USF Water Ski Club, Windjammers Club, Wrestling Club, Women's Extramurals Club.

COUNCIL AND SPECIAL SERVICE ORGANIZATIONS

In addition to the organizations mentioned above, a number of groups provide programs, information, and governmental experience for the students at the University. These include the Aegean (yearbook); College of Basic Studies College Council; Council of Fraternal Societies Student Advisory Board, College of Business; College of Education Council; Cooperative Education Student Council; Engineering College Association; Liberal Arts Dean's Student Advisory Board; Interfraternity Council; Inter Residence Hall Council; The Oracle (campus newspaper); Panhellenic Council; Residence Hall Centers; Senior Class; Student Association; University Center Program Council; University Religious Council; World Affairs Council; and the Management Student Advisory Council.

Recreational Sports

The University of South Florida provides a variety of physical and recreational activities designed to meet the needs and interests of students. Believing that a sound and complete education includes a proper balance of work and study with physical activity, the University program includes Intramural Sports competition for men and women, Sports Clubs, and other recreation activities, in addition to basic instructional programs in physical education.

The activities represent a broad selection of sports ranging from those of a highly competitive nature to those of a non-competitive type and include individual, dual, team, and aquatic sports. Through participation, students, faculty, and staff will increase physical fitness, augment leisure time skills, and develop a wholesome attitude toward physical activity.

The Intramural Sports Program emphasizes activities that are especially suited to the Florida climate. Competition is scheduled in such individual sports as swimming, tennis, track, golf, cross country, table tennis, bowling and archery, as well as the team sports of touch football, basketball, soccer, volleyball, and softball. Competition is scheduled through fraternal societies, residence halls, and independent divisions. Team and individual awards are presented.

The Sports Club Program includes groups of students, faculty, and staff who have a special interest in a particular sports activity. They are organized for the purpose of increasing skills and augmenting knowledge through a continuing in-service training and competitive program. Each sports club is assisted by the coordinator of sports clubs in the selection of a faculty adviser and the initial organization of the club is governed by University regulations. Students with special sports abilities or interests are encouraged to make them known so that when sufficient need and interest warrant, new sports clubs may be formed. Present clubs include: fencing, gymnastics, judo, karate, sailing, sports car, water skiing, and weight lifting.

The Special Events Program is geared to provide the University community with a variety of informal recreational activities. Some of the activities are: open tournaments, trips to special athletic events, splash parties, picnics, camping, boating, coed activities, and other special project activities related to the development of campus recreation.

Intercollegiate Athletics

The University of South Florida fields intercollegiate teams in baseball, basketball, cross-country, golf, soccer, swimming, and tennis. South Florida is a member of the National Collegiate Athletic Association and has sent several teams each year to the national tournaments. Schedules are arranged to include quality competition which reflect the high standards of the University. Women's athletics are encouraged and held to the same rules that apply to men's athletics.

ACADEMIC PROGRAMS

The University of South Florida programs are currently conducted through seven colleges. The College of Basic Studies provides the basic general education needed by all students. The College of Business Administration offers professional courses leading to the bachelor of arts and several master's degrees. The College of Education offers professional courses leading to the bachelor and master of arts and Ph.D. degrees. The College of Engineering offers programs leading to bachelor's and master's degrees in engineering. The College of Liberal Arts offers courses in the arts and sciences, including a variety of professional and preprofessional programs, on the baccalaureate and master's levels, and offers the Ph. D. degree in biology, chemistry, English, mathematics, and psychology. The College of Medicine is dedicated to the preparation of students for the practice of medicine and confers, upon successful completion of the program, the M.D. The College of Nursing offers a four-year program leading to the bachelor of science degree. Each of these colleges has its own requirements and standards. However, all share University-wide emphases and certain common requirements for graduation. Several institutes offer master's degrees in specialized fields.

Each college has prepared its course offerings with strong undergraduate programs clearly in mind. Students are urged to make their college education a broad one, reserving intensive specialization until they are on a job or have gone on to graduate or professional school.

Each college accepts the idea that a college education begins with a broad base of general courses, proceeds to more specialized work and ends with a formal effort to bring together the many separate threads of an education into a significant pattern. Thus, all students enroll first in basic studies courses, then in courses in the college where they wish to concentrate, and finally in a senior integrating seminar. It is hoped that students will constantly attempt to synthesize their education as they move along and that they will have had considerable experience by the time they reach their senior seminar.

Summer Session

The Summer Session (Quarter IV) constitutes an integral part of the academic program of the University of South Florida. Summer courses are identical with those offered at other times during the academic year and are taught by the regular University instructional staff and by outstanding visiting teachers. In addition to regular courses, there are various credit and non-credit workshops, institutes and conferences conducted by specialists.

While the Summer Session serves as a continuation of study, as the fourth quarter of the academic year for regular students, attempts are made to make the schedules of many courses and programs attractive to in-service teachers, junior college transfer students and beginning freshmen just graduated from high school.

The Evening Sessions

The Evening Sessions of the University of South Florida are designed to meet educational needs of people within commuting distance.

The admission requirements, the deadlines and other University regulations for the Evening Sessions are the same as those for other students. Evening students must complete an application for admission to the University of South Florida and present all material required and described under Admission to the University.

Degree seeking students may be assigned an adviser shortly after admission to the University and continue with the assigned adviser unless the student or adviser requests a change. Advisers are available on the basis of the educational objective of the student.

Students admitted to the Evening Sessions may select courses to fit their needs with the adviser's approval and with the consent of the instructor. However, students who do waive these requirements must possess sufficient background and experience to compensate for them. The student and his adviser should determine the need for prerequisites and the level of courses in which he will enroll.

(Registration for courses in the evening is held during the same period as registration for day sessions.) The courses of the Evening Sessions contain the same material and requirements as the equivalents offered during the day. Each student will be expected to meet the same standards of performance and pass the same examinations full-time day students are required to complete. Grades and progress will be based on the same system applicable to full-time students.

Students may enroll in courses offered by any of the colleges of the University. As a general rule, part-time students attending night classes are encouraged to take no more than two courses.

Students seeking degrees through the Evening Sessions must meet the same degree requirements as day students. These requirements are set forth under the curricula of the various colleges.

Continuing Education

LOCATIONS

Programs described below are available in many geographical areas but coordination of these programs is handled through the Center for Continuing Education located on the Tampa campus, the St. Petersburg campus, and the Sarasota Office for Continuing Education. Individuals desiring more information may contact any of these offices.

CREDIT COURSES

The University of South Florida serves the in-service and continuing educational needs of its ever-expanding professional and occupational community which encompasses 12 counties: Charlotte, DeSoto, Hardee, Hernando, Highlands, Hillsborough, Lee, Manatee, Pasco, Pinellas, Polk, and Sarasota.

Both degree and non-degree seekers may participate in the University's Continuing Education Credit Program. A part of an individual's master's degree credit may be earned by taking off-campus credit courses. This individual, however, is encouraged to apply for graduate status at an early date so that these courses may be considered for inclusion in his planned and approved grad-

uate program of studies. Acceptance for enrollment in a course does not itself constitute acceptance to the University.

To assure quality of instruction, the continuing education credit courses for the most part are taught by the regular faculty of the University. When this is not possible, outstanding instructional personnel are recruited from neighboring accredited institutions. In addition, the University System Extension Library makes available for each continuing education course the latest in reference and audio-visual instructional materials.

The academic calendar for courses scheduled off campus is essentially the same as for the University's on-campus credit program. Classes are generally scheduled once a week.

Although some continuing education credit courses are generated by the University itself, most originate through requests which are initiated by individuals or interested groups. Requests for continuing education courses in the area of education should be submitted to the County Extension Coordinator designated by the county superintendent of schools. Requests for continuing education courses in all other areas should be transmitted by individuals, groups, companies, agencies, etc., directly to the Coordinator of Off-campus Credit Courses, Center for Continuing Education, University of South Florida.

NON-CREDIT PROGRAMS

A variety of non-credit educational programs (conferences, workshops, short courses, certificate programs, etc.) of varying lengths are scheduled throughout the year, making it possible for the University to serve greater numbers of adults with richer and more diversified programs. The programs vary in length from one day to ten weeks, and the subject matter is concentrated as needed for the group being served.

The Center for Continuing Education develops programs for business and industry, government, professional, civic and service groups. A variety of instructional methods are used to assure maximum participation in the educational programs. Distinguished faculty members from the several colleges of the University, faculty from other institutions of higher education as well as national and international resource persons, serve as consultants, instructors and lecturers for the programs.

Professional program coordinators are available to provide technical assistance in program planning, budget preparation and evaluation, and to assist organizations in developing programs consistent with the needs of the group and the overall educational objectives of the University.

The Center also offers a number of non-credit certificate programs and courses designed to meet various educational needs of individuals. Emphasis is placed upon quality classes for professional advancement, personal improvement and cultural enrichment.

Registration in these classes is open to all adults with a desire for knowledge and interest in the subject matter.

SARASOTA OFFICE FOR CONTINUING EDUCATION

The Sarasota Office for Continuing Education was established to offer University services in Sarasota and Manatee Counties and to coordinate credit and non-credit courses in that area. The Sarasota Office is located in a building on the Sarasota High School campus and classes are held in the high school.

CHINSEGUT HILL CONFERENCE CENTER

The Chinsegut Hill Conference Center is the University of South Florida's

educational center, available for conferences, workshops, planning meetings, seminars, retreats, and field trips. Chinsegut Hill is a 180-acre tract surrounded by a 6,000-acre federal agricultural and beef cattle experiment station, wildlife refuge, and forest reserve. It is located five miles north of Brooksville, Florida, off U.S. Highway 41 by way of State Road 581.

The manor house at Chinsegut Hill has indoor facilities to accommodate 50 to 60 people, with maximum single room capacity of 35. The mansion's long verandas are also suitable for meetings. Overnight groups of up to 20 persons can be housed in the mansion. Arrangements to use the Chinsegut Hill Conference Center should be made through the Center for Continuing Education.

Bachelor of Independent Studies Degree Program

The Bachelor of Independent Studies Degree Program is designed especially for adults twenty-five or over who are unable to dedicate a block of time in residence to complete a regular degree program. The BIS Curriculum consists of study in four areas: The Humanities, Natural Sciences, Social Sciences and Inter-area Studies.

The BIS Adult Degree Program does not involve specific courses, credit hours or letter grades. The student's work is rated as satisfactory or unsatisfactory. The Program is administered through the USF Center for Continuing Education and is academically responsible to the College of Liberal Arts.

The BIS Degree candidate pursues each of the four areas of study through two approaches. The first phase of work for each area consists of *guided independent study*. The student proceeds under the guidance of a faculty adviser who furnishes directions relative to reading assignments, methods of reporting and other study projects. When the student and his adviser feel that he has attained adequate competence in the area of study, the student is invited to take an Area Comprehensive Examination.

The second and final phase of work for each area consists of an *area seminar*. An area seminar represents a period of intensive residential learning under the direction of a team of USF faculty members. Required residence associated with the seminars totals thirteen weeks. The seminars for the first three areas are three weeks in length. The fourth area seminar requires four weeks in residence.

Those seeking admission to the BIS program must qualify for admission to the University of South Florida and for admission to the BIS Adult Degree Program. The USF Director of Admissions rules on the admission of an applicant to the University. The BIS Adult Degree Program Council rules on admission of an applicant to the BIS Degree Program.

On successful completion of the four study areas and on recommendation of the BIS Council, the Director of the BIS Program certifies the candidate to the Dean of the College of Liberal Arts, who makes the final recommendation that the degree be conferred. BIS Degrees are conferred at regular graduation ceremonies at the University.

Fees for the BIS Degree Program are as follows:

Application Fee	$ 15.00
Pre-Enrollment Procedures	50.00

1st Area Enrollment	
Independent-study	250.00
Seminar	250.00
2nd Area Enrollment	500.00
3rd Area Enrollment	500.00
Inter-Area Enrollment	
Independent-study	250.00
Seminar	300.00
TOTAL*	$2115.00

*Please note that the fees listed do not include such additional expenses as books, travel, and living expenses during seminars.

Students may not transfer credits (from the University of South Florida or any other institution) into or out of the BIS Program.

Cooperative Education Program

The Cooperative Education Program is an academic program open to majors in all disciplines offered at the University. The program's objective is a balanced education where occupational experience is an integral part of formal education, and theory is blended with practice. In addition to regular classroom and laboratory exercises, it acquaints the student with the world of work and a professional environment. The ultimate objectives of the program are to provide relevance in the educational process, direction in career planning, and bringing business, industry, and governmental agencies close to the educational program of the University and have the graduates absorbed into permanent employment of the leading employers.

The Cooperative Education Program is particularly designed for recent high school graduates rather than older, more mature students with considerable work or professional experience. It also requires students of demonstrated academic ability. A student must have a minimum of 24 quarter hours of academic work completed with a grade point average of 2.0 or better before being assigned to an employer. The program is open to all students regardless of major, undergraduate and graduate as well.

Students transferring 24 or more hours of credit from another school are eligible immediately to enter this program.

All University of South Florida cooperative programs are approximately four years in length except in the field of engineering, which is approximately a five-year program. Following two or more quarters on campus the student is assigned to a team and alternates between quarters of training (paid employment) and quarters of study until he reaches the senior level, when he returns to the campus to complete his academic requirements.

The University will assign students to training programs relevant to their educational and professional goals. Usually students are first placed on assignments where they can learn the fundamentals. They may then advance in the type of assignment from training period to training period.

Many types of enterprises have joined the University as cooperative employers. Those currently having cooperative programs and accepting University of South Florida students in these training programs include: public utilities, financial institutions, chemical plants, department stores, school systems, aircraft and automobile manufacturers, insurance firms, chemical, biological, and nuclear laboratories, and many governmental agencies including the U.S. Food and Drug Administration and the National Aeronautics and Space Administration. Five of NASA's centers currently have University of

South Florida students in their training programs as well as NASA Headquarters in Washington, D.C.

Students are encouraged to make application for placement in the program during their first quarter on campus even though they must complete at least 24 hours of academic work before being assigned to an employer.

Once a student is accepted into the program, the training assignments become a part of his academic program leading to a degree. The student must remain on the alternating pattern of training and study until he reaches senior level or is released from the Cooperative Education Program by the director. Students signing an agreement covering training periods are obligated to fulfill their agreement.

Students who fail to report for a training period after signing an agreement, who fail to keep their agreement to remain with an employer to the end of a given training assignment, or who fail to remain in the program until they reach senior level, will not be permitted to register as full-time students during their next quarter on campus.

Cooperative Education students are encouraged to take one course during each training period. This may be a regular course taken by class attendance, by independent study, or credit by examination at the University of South Florida or any other accredited college or university, a course by home study or correspondence, or a special problems course in an area appropriate to the student's major interests. Most of these special problems courses at the University of South Florida carry a title of individual research and a course number at the 400 level. They may be repeated and credit may vary from one to five hours per quarter for Cooperative Education students, the amount to be determined at the time of advising.

A special course is available for Cooperative Education students—CBS 400, Cooperative Education Report (1-5 credits). This course is designed specifically for Cooperative Education students in which the student pursues a subject dealing with his training assignment and/or his major area of professional interest. The Cooperative Education student is assigned to a professor in his major field and will confer regularly with him on the subject, structure and content of the project. The findings of this project would be embodied in a written report. This course may be used with prefixes other than CBS if approved by the dean and department head of the college and area concerned. Further information may be obtained in the Office of Cooperative Education.

The registration fee for the training period is $40.00 and, in general, covers the fee for one course up to five hours in value (see Cooperative Education Handbook for exceptions), student publications, use of the Library, Student Health Service, and all privileges enjoyed by other full-time students including the use of recreational facilities,) golf course, etc. Transfer students are welcome to select the program and should make application during their first quarter at the University.

The Cooperative Education Program also serves those students who desire one-term placement with an employer, a term of travel or research, or one of the other methods of opportunity offered by Cooperative Education.

Employers who have working agreements with the University of South Florida and who have served as cooperative employers during the past year in the University's Cooperative Education Program include:

Alton Box Board Co., Jacksonville
Atlanta Public School System, Atlanta, Ga.
Bonwit-Teller, New York, N.Y.
Bramlett Mfg. Corp., St. Petersburg
Continental Baking Co., Tampa
Continental Can Co., Tampa
Diamond Shamrock, Maryland

E. I. duPont de Nemours & Co., Aiken, S.C.; Florence, S.C.; and Chattanooga, Tenn.
FMC Corp., Lakeland
Florida National Bank, Jacksonville, Fla.
Florida Pollution Ctr., Tallahassee
Florida Power Corp., St. Petersburg
Florida Power & Light, Miami and Sarasota
Florida Dept. of Transportation, various locations
Ford Motor Co., Atlanta, Ga., and Dearborn, Mich.
General Telephone Co., Tampa
Georgia Fish and Game Commission Brunswick, Ga.
Georgia Power Co., Atlanta, Ga.
Congressman Gibbons' Office, Washington, D.C.
Hillsborough Cty. Clerk of the Circuit Court, Tampa
Hillsborough Cty. Health Dept., Tampa
Hillsborough Cty. Hospital & Welfare Board, Tampa
Hillsborough Cty. Juvenile & Domestic Relations Court, Tampa
Hillsborough Cty. Planning Commission, Tampa
Hillsborough Cty. Pollution Control, Florida
Hillsborough Cty. Pollution Commission, Florida
Honeywell, St. Petersburg, and Tampa
Insurance Co. of North American (INA), Tampa
S. H. Kress, Tampa, New Orleans, La., Savannah, Ga.
Lockheed-Georgia Co., Marietta, Ga.
MacDonald Training Ctr., Tampa, Fla.
Martin E. Segal, New York
Montgomery Wards, Tampa, Fla.
North American Rockwell, Cocoa Bch., Fla.
Pan American Airways, Florida
Peat, Marwick and Mitchell, Tampa
Polk Cty. Public Health Dept., Florida
Pratt and Whitney Aircraft, West Palm Beach
Princeton - Pennsylvania Accelerator, Princeton, N.J.
South Florida, University of, Computer Research Center, Tampa
South Florida, University of, Instructional Material Center, Tampa
South Florida, University of, Procurement, Tampa
South Florida, University of, Div. of Purchasing, Tampa
Tampa Electric Co., Tampa
The Tampa Times, Tampa
Texas Parks and Wildlife Service, Rockport, Tex.
WTVT-TV, Tampa
WFLA Television, Tampa
Westinghouse Corp., Tampa
Yarborough Dennard and Tench, Clearwater, Fla.
Arthur Young and Co., Lakeland, Jacksonville, Tampa

U. S. FEDERAL AGENCIES

Air Force Eastern Test Range, Patrick AFB, Fla.
Army Missile Command, Huntsville, Ala.
Bureau of Commercial Fisheries, Pascagoula, Miss., and St. Petersburg Bch., Fla.
Central Intelligence Agency (CIA), Washington, D.C.
Comptroller of the Currency, Atlanta, Ga., and Jacksonville, Tallahassee and Tampa
Corps of Engineers, Jacksonville, and Tampa, Fla., and Atlanta, Ga.
Defense Personnel Support Center, Philadelphia, Pa.
Food and Drug Adm., Atlanta, Ga., Washington, D.C., and St. Louis, Mo.
General Services Adm., Washington, D.C.
Internal Revenue Service, Tampa, Jacksonville, and Miami, Fla.; and Washington, D.C.
National Aeronautics and Space Administration, Hampton, Va.; Greenbelt, Md.; Cape Kennedy, Fla.; Houston, Texas; Huntsville, Ala.; Wallops Island, Va.; and Washington, D.C.
National Institute of Neurological Diseases and Stroke, Bethesda, Md.
National Park Service, New York, N.Y. and Washington, D.C.
National Security Agency, Maryland
Naval Air Rework Facility, Jacksonville
Naval Ordance Station, Indian Head, Md.
Naval Ship Research & Development Ctr., Washington, D.C.

Naval Training Device Ctr., Orlando
Office of Education, Washington, D.C.
Passport Agency, U.S. Dept. of State, New York, N.Y., and Philadelphia, Pa.
Picatinny Arsenal, Dover, N.J.
Social Security Administration, Atlanta Ga., and Baltimore, Md.
Tennessee Valley Authority, Knoxville, Tenn.
U. S. Coast Guard, Washington, D.C., and Alexandria, Va.

The Library

College of BASIC STUDIES

The College of Basic Studies provides that part of a formal university education which should be common to all graduates of the University of South Florida. All students enter the college as freshmen and complete most of its requirements before entering one of the other colleges of the University.

Lower division courses are offered by the college in eight areas plus Physical Education.

The Basic Studies requirements for most majors are the completion of six out of the following eight areas over a four-year period:

AREA	COURSES OFFERED	NUMBER REQUIRED	TOTAL CREDITS REQUIRED	MUST BE TAKEN IN NUMERICAL SEQUENCE
Freshman English (Required of all students)	CBS 101, 102	2	8	yes
Behavorial Science	CBS 201, 202, 203	3	9	yes
Functional Math	CBS 109, 110	2	10	yes
Modern Languages	See pages 164-5	2	7, 8, 9, or 10	yes
Biological Science	CBS 205, 255, 206, 256, 207, 257	3	9	no
Physical Science	CBS 208, 209, 210	3	9	yes
*American Idea	CBS 301, 302	2	9	yes
*Humanities	CBS 308 and 315, 316, 317	2	9 or 10	no

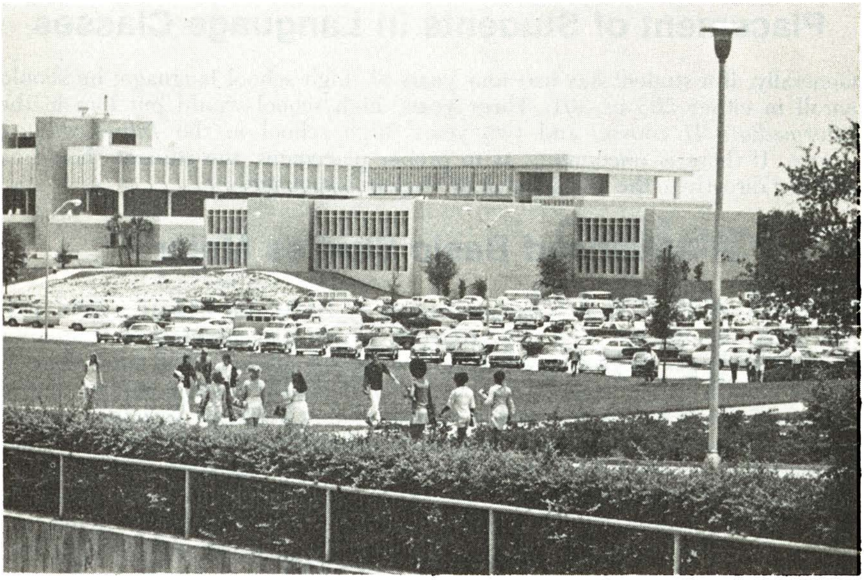
*Note: Freshman English must be completed before these areas are taken.

Some major areas require the completion of particular Basic Studies courses. Engineering, Business and Elementary Education are three such areas. Students should therefore check the catalog for their own areas of interest to determine what is required in their own situations.

In Modern Languages the student has a selection from more than one language (a year of Latin or Ancient Greek may be substituted for a functional modern language course); but only one language can be used to satisfy basic studies requirements. The Physical Education requirement is explained in detail on page 62.

REQUIREMENTS FOR WAIVING COURSES

Course	Prefix and Number	On Basis of Past Experience	On Basis of Other Courses to be Taken at USF
Freshman English	CBS 101-102	No Waiver	No Waiver
Behavorial Science	CBS 201-202-203	Evidence of competence acquired elsewhere. See course chairman.	No Waiver
Biological Science	CBS 205-206-207	Minimum of 3 years in high school, including Biology, Chemistry, and one additional unit other than General Science.	Pass Biology 201, 202, and 203 with a minimum "C" average.
Physical Science	CBS 208-209-210	Minimum of 3 years in high school including Chemistry, Physics, and one additional unit other than General Science. *NOTE: The same high school courses may* not *be used to waive both the Biological and Physical Science.*	*Pass any* 2 of the following 4 sequences with a minimum "C" average: Chemistry 211-212-213 Physics 301-302-303-304-305-306, or 201-202-203-204-205-206 Geology 201-301 Astronomy 301-302
Functional Mathematics	CBS 109-110	Minimum of 3 years in high school including 2 years of Algebra, one semester each of Trigonometry and Geometry.	Pass *either one* of the following 2 sequences with a minimum "C" average: Mathematics 302-303-304 Mathematics 211-212-213
Modern Languages	See course descriptions	Minimum of 3 years of one foreign language.	Two quarters appropriate level of one language.
American Idea (Not available to Freshmen)	CBS 301-302	Minimum of 4 years of high school Social Studies, including one year each of World and American History.	No Waiver
Humanities (Not available to Freshmen)	CBS 315-316-317-308	Evidence of competence acquired elsewhere. See course chairman.	No Waiver



Social Science, Faculty Office, and Business Administration Buildings

Ordinarily a student would seek to complete his basic studies courses by the close of the junior year. It is recommended that the "300" level basic studies courses, American Idea and Humanities, be scheduled in the junior year. All students must register for CBS 401, Senior Seminar, during their senior year.

Waiver

Some entering students have already achieved competence in one or more areas of the basic studies. These students may request waiver of one or more of the basic studies requirements. However, a specific high school unit may not be applied toward a waiver of more than one basic studies area. For example, high school chemistry may not be used toward the waiver of both biological and physical science. Applications for a routine waiver must be completed in the Admissions Office during the first quarter the student is in attendance at the University. Transfer students and students who feel that they have special reasons for waiver should apply in the college office. Routine approval will be granted when applicants meet the following conditions: (1) a score of 425 or higher on the Florida State-Wide Twelfth Grade Tests, 24 on the ACT, or 1075 on the CEEB; (2) a grade of "C" or higher in each of three or four years of relevant high school work. A course which has been waived may not subsequently be taken for credit. Requirements specific to the area in which the waiver is requested are shown in the chart on the opposite page.

Lower division basic studies requirements may be satisfied by independent study or credit by examination, according to the procedures described on pages †of this catalog. Students who have completed more than two college courses in the field of study concerned may not earn credit by examination. They may, however, take the examination and secure a waiver by scoring a "C" or higher.

Placement of Students in Language Classes

Generally, if a student has had four years of high school language, he should enroll in either 203 or 301. Three years' high school would put him in the *Intermediate II* course, and two years' high school in the *Intermediate I* course. If there is uncertainty as to proper placement, the student should be referred directly to the Department of Modern Languages.

Advanced Basic Studies Major

An Advanced Basic Studies Major consists of HUM 311-312-313, CBS 403-404, CBS 405-406-407, and CBS 409-410, plus a concentration of 18 quarter units in an upper level program approved by the adviser. Not more than 36 credits from a single program can be counted toward a basic studies degree unless the student is completing a double major. Students seeking a double major may petition to the dean's office to waive the 36-credit limit. Students interested in an Advanced Basic Studies major are urged to inquire at the Basic Studies college office.

Humanities Major

Requirements for a major in humanities are 45 credits of upper level humanities courses (400- and 500-level), including HUM 591, plus 9 credits in the creative or performing arts. A graduate program leading to a Masters of Arts in Humanities Education is available; for requirements, see College of Education.

Basic Physical Education

Physical Education offerings in the College of Basic Studies include two lecture-laboratory courses which present the rationale for incorporating activity into modern life, and a wide range of activity courses which can facilitate accomplishment of goals set forth in the primary courses.

A four-course requirement (PEB 101, PEB 102, PEB 230, and optional activity) applies to all students under age 21 at first full-time USF enrollment. Course work will be determined individually for handicapped students by joint decision of the student, physical education representative and the Director of Student Health Services. Transfer students should note the information on "Evaluation of Transferred Credits" and then contact the Division of Physical Education for program evaluation.

The primary courses (PEB 101 and PEB 102) are normally taken during the freshman year.

Swimming ability is the third physical education requirement, and can be satisfied by taking appropriate course work or through credit by examination. The fourth course is elective and may be selected from the broad listing of activity courses. The physical education requirement should be completed before entering an upper level college. Enrollment in course work past that mentioned above is encouraged and counts as elective hours.

Each Basic Physical Education course receives one (1) hour credit. PEB 101 and PEB 102 receive letter grades and enter into the grade-point ratio (GPR). All other courses are graded on a pass-fail basis and do not affect the GPR.

College of BUSINESS ADMINISTRATION

The College of Business Administration offers courses of study leading to both undergraduate and graduate degrees. These programs are designed to prepare individuals for business and government careers, and graduate education. It is the philosophy of the College of Business Administration to devote its resources to the continued growth of high quality undergraduate and graduate programs.

The undergraduate curriculum leads to a Bachelor of Arts in one of the following five major fields: Accounting, Economics, Finance, Management, and Marketing. The undergraduate programs are structured to accomplish the following objectives:

1. To give the student a broad foundation in general and liberal education, a thorough grounding in basic business courses, and some specific competence in at least one significant functional area of business.
2. To strengthen students' powers of imaginative thinking, creative, independent analysis, and sensitiveness to social and ethical values.
3. To instill in each student a desire for learning that will continue after he has graduated and taken his place in the community.
4. To convey to each student the spirit of pioneering, risk taking and progress which are essential to the continued development of the free enterprise system.

The graduate programs are structured to accomplish the following objectives:

1. To make professional education available to those qualified individuals who have selected specific career objectives in fields of business, government or education.
2. To support adequately the research activity so vitally necessary to maintain a quality graduate faculty and program.
3. To foster independent, innovative thinking and action as a professional individual.

UNDERGRADUATE ADMISSION AND DEGREE REQUIREMENTS

A program of education for business leadership must be based on a foundation

of comprehensive general education; consequently, most of this basic work must be taken prior to admission to the college. It should be further noted that approximately one-half of the work leading to the bachelor's degree in business is required from academic areas outside of business.

Upon application, students who have fulfilled the following requirements will be admitted to the College of Business Administration:

1. Total of 90 quarter hours of credit with a grade point ratio of 2.0 or better.
2. Those holding an A.A. degree from a junior college or university in a parallel program.

Transfer Students

From Junior Colleges: Junior college students should complete the program of general education as required by the junior college. Certification to this effect will be accepted as fulfilling the general education requirements of the University of South Florida. Furthermore, the student should follow the business parallel program indicated in his junior college catalog, to assure graduation from the University of South Florida in minimum time. Should the junior college catalog not specify pre-business courses, we recommend the student take two semesters of mathematics, two semesters of economics, two semesters of accounting, and one semester of statistics while still at the junior college.

Business is requiring more and more analytical functions of its management-level personnel each year. One of the most basic analytical tools is mathematics and more and more higher mathematics is being required as prerequisite for business courses. The student is therefore encouraged to complete more than the minimum requirements of mathematics and add beginning calculus to his curriculum at the junior college.

All transfer students, particularly those not pursuing the parallel program should note that a maximum of nine quarter hours will be allowed for courses taken during the first two years of junior college study which are available only as 300 and 400 level courses in the College of Business Administration at the University of South Florida. However, of these nine hours no more than five quarter hours may be transferred for credits in the student's major field.

From Non-Junior Colleges: Students attending a four year college who wish to transfer should follow a program in general education similar to that required at the University of South Florida. The prerequisite courses in business subjects of accounting principles, economics principles, and mathematics should also be included in the first two years of study. Transfer credit will be allowed for all of the above courses. Any remaining courses after fulfilling the general education requirements and business prerequisites should be taken in such areas as mathematics, the natural sciences, the social sciences, and the humanities.

BUSINESS PRELAW

Those students intending to go on to law school after obtaining a B.A. degree in a business major should so indicate on their Application to Upper Level. Special counseling will be provided. Unless a specific degree in Accounting, etc., is desired, an explicit Pre-Law inter-disciplinary set of existing courses will be arranged under the Finance major.

Requirements for Graduation

Graduation requirements are 180 academic hours plus physical education requirements (See page 62 for further definition of P.E. requirements).

Of the 180 hours, the Business course credits may vary from 87 minimum to 100 maximum. Consequently, non-business courses may vary from 93 to 80. This variance depends upon the major field chosen and differences in mix of General Electives and Business Electives. If the student enters USF as a freshman, his requirements for graduation are:

(1) 57 hours of Basic Studies;
(2) 23-36 hours of General Electives;
(3) 53 hours of Business Core, which includes 9 hours of Accounting (ACC 201, 202, 305); 8 hours of Economics (ECN 201, 202); 5 hours of Intermediate Price Theory (ECN 301); 8 hours of Statistics (ECN 231, 331); 5 hours of Finance (FIN 301); 5 hours of Management (MAN 301); 5 hours of Marketing (MKT 301); 5 hours of Law (GBA 301); 3 hours of Computer Application (GBA 333);
(4) 20-27 hours in the major area as stipulated under each major with a 2.0 GPR in these courses. See curricula nand programs following;
(5) 14-20 hours of Business Electives.

Students transferring with General Education Requirements met need not adhere to the Basic Studies hours but rather need total non-business courses within the range of 80-93 hours. Business course requirements are the same as those for an entering freshman. Students transferring in excess of six quarter hours of Elementary Accounting must still complete ACC 305 in the Business Core. The extra hours of Elementary Accounting transferred will apply toward the Business Electives requirements. Those bringing Elementary Statistics will receive credit for ECN 231. Extra hours of Elementary Statistics will apply toward Business Electives requirements. These students, however, must take ECN 331 unless the equivalent has been taken at a senior institution. All business graduates will be required to take the Computer Application course, GBA 333. Courses taken elsewhere in Data Processing may be applied toward elective credit, depending upon the nature of the courses.

CURRICULA AND PROGRAMS

1. ACCOUNTING

Major Requirements: 27 hours in Accounting including ACC 301, 302, 411, 421, 423, and two of the following: ACC 401, 402, 405, 412, 424, 425.

Business Electives: 14-20 hours of courses in College of Business Administration (other than accounting).

It is strongly recommended that all accounting students take either GBA 371, Business Communication, or ENG 325, Advanced Expository Writing.

2. ECONOMICS

The Economics Department is committed to preparing the student, both major and non-major, with a strong background in the science of Economics.

Proper investigation of any science entails a universal presentation of the analytical and factual material of the subject matter.

With this thought in mind, the subject matter is taught emphasizing a the-

oretical framework which will allow the individual student to identify and solve economic problems.

Major Requirements: ECN 323, 401, and 17 hours of other Economic courses.

Business Electives: 14-20 hours in the College of Business Administration.

General Electives: These 23-36 hours must be taken outside the College of Business Administration.

3. FINANCE

Major Requirements: FIN 321, 411, 421, and 8 to 15 additional hours of upper level finance courses.

Business Electives: A minimum of 14 hours and a maximum of 20 hours of College of Business Administration courses outside of the Finance department.

General Electives: A minimum of 23 hours and a maximum of 36 hours may be taken outside the College of Business Administration. MTH 211, 212, 213 are strongly recommended.

4. MANAGEMENT

Major Requirements: All majors take 18 common hours: MAN 311, 321, 331, 341, 421, 431. Each major then selects 9 additional hours from one of three options:

Behavioral Science—MAN 451, 453, 489.
Industrial Relations—MAN 461, 463, 465.
Management Science—MAN 471, 472, 473.

Regardless of the option selected, however, *all management majors receive the same degree:* a B.A. in Business Administration with a major in Management.

Business Electives: 14-20 hours of courses in College of Business Administration (other than Management) to be selected in consultation with assigned major adviser, GBA 351 and GBA 371 *are strongly recommended* for all Management majors. Other recommendations, depending upon option, are: FIN 411, 421, 351; MKT 413, 312, 403; ECN 431, 311, 313, 341, 343, 351, 361, 371, 401, 405, 411, 437; ACC 421, 422, 423, 425.

General Electives: 23-36 hours outside College of Business Administration. For those majors in Behavioral Science and Industrial Relations options, selections should be made primarily from Psychology, Political Science, Speech, and Sociology, in consultation with assigned major adviser; for Management Science option, MTH 211, 212, 213 are *strongly recommended* plus certain Engineering, and other courses, in consultation with assigned major adviser.

5. MARKETING

Major Requirements: Marketing majors are required to take the following 5 courses (18 hours): MKT 312, 315, 411, 413, and 419; and an additional 9 hours (3 courses) selected from MKT 311; 316, 401, 403, 405, 407, 409, 414, 417, 489 in consultation with their major adviser. Any substitutions for the elective courses must be approved in writing by the adviser and the chairman of the Marketing Department.

Business Electives: 14 to 20 hours of courses in the College of Business Administration to be selected in consultation with major adviser. Suggested selections from: GBA 351, 371, 362; MAN 311, 321, 341; FIN 411, 421; ACC 305, 421, 422; ECN 341, 351, 431, 437.

General Electives: Courses outside the College of Business Administration. It is recommended that marketing students select from courses in Psychology,

Sociology, Speech, English, Engineering, Mass Communications, and Math in consultation with their marketing adviser. Strongly recommended are MTH 211, 212, 213.

GRADUATE ADMISSION AND DEGREE REQUIREMENT

Courses are offered in the College of Business Administration leading to one of five Master's degrees—the Master of Accountancy, the Master of Arts in Economics, the Master of Business Administration, the Master of Business Administration with specialization in Marketing and the Master of Science in Management. Applicants must meet the University minimum requirements listed on page 150. However, for programs in this College except the M.A. in Economics, a score of at least 450 on the Admission Test for Graduate Schools of Business must be substituted for a score of at least 1,000 on the Graduate Record Examination. These prerequisites are the following eight courses, or their equivalent: ACC 501, 502; ECN 501, 502, 503; FIN 501; MAN 501; and MKT 501. However, depending on the student's undergraduate degree and the Master's degree he is seeking the amount of prerequisites will be determined in conference with the student's adviser. Courses in this College numbered 501-509 are ineligible for credit in the graduate programs of this College.

All graduate programs are to be completed with an overall "B" average (3.0 grade point average), and the student must give a satisfactory performance in a comprehensive examination after completion of all coursework.

Master of Business Administration

The M.B.A. program requires that a student satisfactorily complete a total of 48 quarter hours beyond the prerequisites listed above for graduate admission. These 48 hours include ACC 601, 602; ECN 605, 607; FIN 601, 602; GBA 603, 605, 615; MAN 601, 602; MKT 601, 602; and 9 elective credits in their coursework selected with the adviser's approval.

Master of Accountancy

It is contemplated that students applying for admission to this program will have a baccalureate in Business Administration which includes a minimum of 36 quarter hours credit in accounting. Students applying for admission who do not meet these prerequisites will be required to take additional courses. The number of additional courses deemed necessary will depend on the academic background of the individual students, and may vary from 27 quarter hours for a non-accounting business major to 61 quarter hours for a non-businesss major.

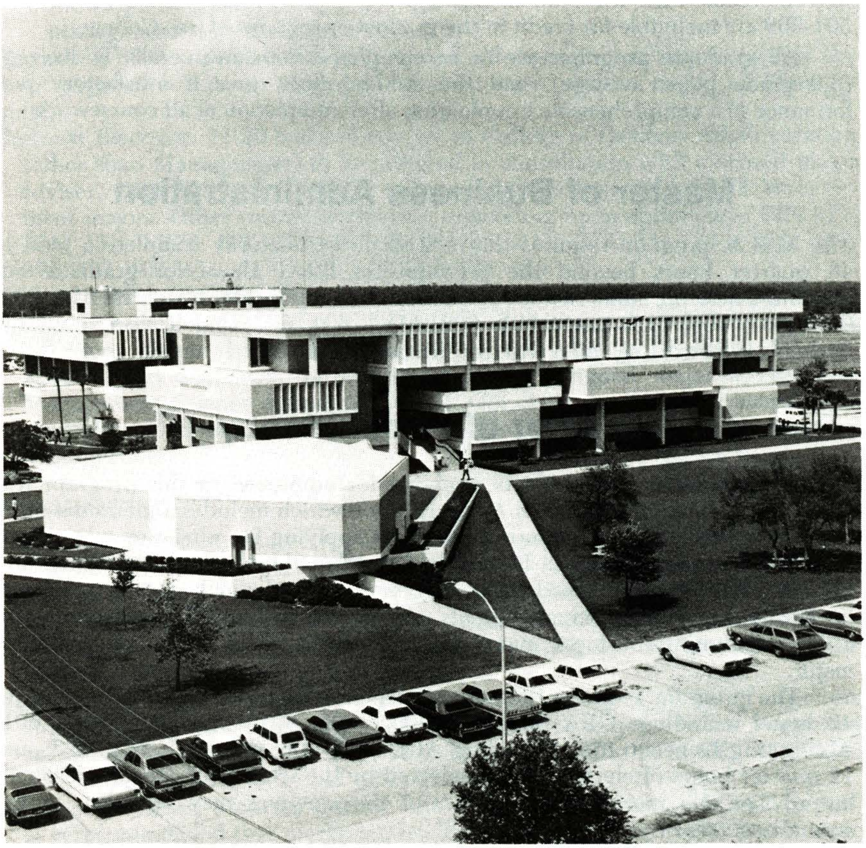
The program requires that the student satisfactorily complete a total of 48 hours including: GBA 603, 605; ECN 605, 607; MAN 602; FIN 601; Accounting Concentration including ACC 605, 606, 607, 611, 621, 623; and 12 quarter hours of electives to be selected by the student in consultation with his adviser. No more than six hours of the electives may be taken in the accounting area.

Master of Arts in Economics

The student in the M.A. in Economics program must complete a minimum of 45 quarter hours, including both coursework and thesis. The curriculum of 45 credit hours has four parts comprised of core courses, economics electives, general electives, and a thesis. The core courses, required of all students, include the following 14 credit hours: ECN 602, 603, 605, and 607. The economics electives involve a minimum of 15 credit hours where the student must select one of the following five credit hour courses: ECN 561, 623 or 625; and obtain the remaining ten hours from the following list: ECN 531, 561, 601, 604, 610, 623, 625. The general elective requirement may be satisfied when the student, with an adviser's approval, can obtain a maximum of ten hours of electives in coursework outside the area of economics. Depending upon the degree of difficulty or complexity involved, thesis credit may range from six to nine quarter hours.

Ideally, the applicant's undergraduate training should reflect a strong background in economic theory, supplemented with mathematics and statistics. An undergraduate major in economics is not required. Serious background deficiencies may require additional coursework.

Business Administration Building



Master of Science in Management

The Master of Science program builds specialized skills in characterizing and solving problems of administrative decision and action. Its foundations are behavioral science and quantitative analysis. While admission standards coincide with those of the M.B.A. program, the curriculum is distinct. Courses reveal the motivational and logical structures which underlie the various functional contexts in which managerial behavior takes shape. Additionally, courses are designed to foster facility, rigor, and independence in applied research. Supervised selection and systematic investigation of a significant problem is an integral part of the curriculum.

The program requires completion of not less than 48 quarter hours course work and satisfaction, by enrollment or waiver, of the following: (1) six graduate courses in administrative studies outside the field of Management, equivalent to ACC 601, ECN 607 or ECN 605, FIN 601, GBA 603, GBA 605 and MKT 601, and (2) ten graduate courses in Management, consisting of MAN 601, MAN 602, MAN 603, MAN 607, MAN 615, MAN 699 (6 hours), plus three management electives. On the basis of their academic backgrounds students may apply for waivers to the Director of Graduate Studies of the College of Business Administration.

The MBA with Specialization in Marketing

This specialized master's degree program provides the opportunity for students to develop knowledge and proficiency in the field of marketing while acquiring a useful understanding of the other major functional areas of business, the environment within which the firm operates, and the tools of analysis essential for making sound marketing decisions. This program allows students to have specific objectives and to broaden their employment opportunities in marketing and other business fields.

Students desiring a marketing emphasis should enroll in the M.B.A. program. The degree with specialization requires the completion of a minimum of 48 hours of graduate level courses including 15 hours of marketing courses. Students are required to take MKT 601 and 602, and select their elective courses (9 hours) in consultation with a marketing adviser from the following: MKT 603, 605, 607, 609, 611, 683.

College of EDUCATION

The College of Education places an emphasis on each student learning what is relevant for the world of today and on his getting deeply involved in his own educational process. Thus, the emphasis is on the student learning to do his own thinking about himself and his universe.

The College of Education is committed to a continuous and systematic examination of the professional program of teacher education. Promising programs are examined experimentally under controlled conditions, which make possible an objective appraisal of effects in terms of learning outcomes.

The University of South Florida follows a University-wide approach to teacher education. Its programs for the preparation of teachers represent cooperative effort in planning and practice by faculties of all academic areas, coordinated through the University Council on Teacher Education. Courses needed by teacher candidates but designed also for other students are offered outside the College of Education. Courses in the University which are primarily designed for teacher candidates are taught by the College of Education.

In the total teacher education program there is a special concern for developing in the student a deep interest in intellectual inquiry and the ability to inspire this interest in others. It is the task of the College of Education to give leadership to the instruction in subject matter and process, which means the total teacher education program.

BACHELOR OF ARTS DEGREE PROGRAM

The undergraduate teacher education program leads to the Bachelor of Arts Degree. It is an upper division program.

Admission Requirements

While each student admitted to the University is expected to have the qualifications to graduate, this does not necessarily mean that he has the qualifications to become a teacher.

Prospective secondary and K-12 teachers are enrolled in teacher education programs involving both the College of Education and the College of Liberal Arts.

Admission to the upper level teacher education program is contingent upon meeting the following minimum requirements:

1. Completion of a College of Education upper level application form.
2. Completion of a majority of Basic Studies.
3. Completion of a minimum 75 quarter hours.
4. An overall grade point ratio of 2.0

5. Additional criteria at the discretion of the admissions and selections committee (i.e. Health Center, Student Affairs, Speech and Hearing Clinic, etc.).

Handicapped Students — Application will be reviewed by the admissions committee. Acceptance of the application of the student will be determined by the following:

1. The judgment of the committee that the student will be able to carry out the duties of a teacher.
2. An assurance from the public schools that an internship contract will be offered.

Deadline: The student should initiate his application with the College of Education Central Advising Office (EDU 112) no later than the second week of the quarter in which he is eligible for admission.

Admission to Supervised Teaching Experience

A minimum of 12 credits of observation and supervised teaching in elementary or secondary schools is required. Time and sequence of the experience may vary among programs. (Refer to the specific program.)

Special requirements for enrollment in the supervised teaching and seminar courses are:

1. Admission to the College of Education.
2. Completion of an application for supervised teaching.
3. Completion of the professional education sequence and at least two-thirds of teaching specialization with a minimum 2.0 grade point ratio in each.
4. An overall 2.0 grade point ratio.

Deadline: Application for student teaching should be made two quarters prior to term in which experience is desired. Forms and specific completion dates may be obtained in the student teaching office.

College Requirements for Graduation

A student to be certified by the College of Education as having completed its requirements must have earned 180* credit hours with a minimum overall grade point ratio of 2.0. An average of 2.0 or better also must be made in the student's professional education sequence and in his teaching specialization courses. Satisfactory completion of supervised teaching is required. A student must also have completed the major requirements in an approved teaching program (which includes general preparation, teaching specialization, and professional preparation) and passed the senior seminar in the College of Basic Studies. A minimum of 12 credits in professional courses in addition to internship and 18 credits in specialization courses must have been earned in residence. The student must complete a minimum of 45 hours after admittance to an upper level program.

SPECIFIC REQUIREMENTS

A minimum of 180* quarter hours including:

General Preparation .... 58 or 59 hours
Professional Education Core .... 36 quarter hours
Teaching Specialization .... 46 to 73 quarter hours

(*plus physical education requirements)

Degree Validation and Certification Programs

VALIDATION

Baccalureate and master's degrees received from non-accredited schools which are listed in the *Education Directory* of the U.S. Department of Health, Education, and Welfare may be validated. Before beginning course work for validation, the degree holder must submit a planned program to the Central Advising Office in the College of Education. The program will consist of a minimum of 18 quarter hours. To validate a baccalaureate degree the 18 credits must be in upper division and/or graduate work with no grade below "C". To validate a master's degree the 18 credits must be in 600-level courses with no grade below "B".

CERTIFICATION

A person who has previously earned a bachelor's degree and has a desire to satisfy teaching requirements may enroll in courses in which he has met the course prerequisite.

A holder of a bachelor's degree wishing to enroll in EDC 498 and 499 should file an intent to student teach with the College of Education Central Advising Office. Approval of the application by the Selections Committee of the College of Education and satisfactory completion of 12 quarter hours of course work in residence are prerequisite to registration in EDC 498 and 499 by students in this non-degree seeking category.

Teacher Education Curricula and Programs

There are three distinct areas in the teacher education program, and all teacher candidates must meet certain minimum requirements in each. The three areas and their requirements are as follows:

1. GENERAL PREPARATION (58 or 59 quarter hours)

Six areas of Basic Studies are required (by course work or waiver) plus the physical education requirements.

The six areas of Basic Studies shall be:

For students in Mental Retardation or any elementary program:

1. English
2. Behavioral Science
3. American Idea
4. Humanities
5. Biological Science or Physical Science
6. Math

For students in programs other than the above:

1. English
2. Behavioral Science
3. American Idea
4. Humanities
5. Biological Science or Physical Science
6. Math or Foreign Language or a second science sequence.

2. PROFESSIONAL EDUCATION CORE

The required courses in the professional education core are EDF 305, EDF 307, EDC 401, EDC 498, EDC 499 or the appropriate intern course described in the Catalog, plus the Methods course (s) appropriate to the student's specialization and an additional four quarter hours of approved education credits. Some of the areas in which the student might profitably elect courses are: Foundations, Library, Reading, and Special Education.

3. TEACHING SPECIALIZATION PREPARATION (up to 73 credits)

Course requirements in the area of teaching specialization vary according to subject. The different specialization requirements are listed on the following pages.

A. Elementary Education

The program of elementary teacher education provides five quarters of continuous daily laboratory experiences in the public schools. A minimum of two hours daily is spent by the student in a variety of classroom situations. The continuous laboratory experience replaces the full quarter of internship and related aide assignments. Students entering this program must be eligible for admission to the College of Education (see admission requirements) and maintain a 2.0 average.

Program exceptions may be discussed with personnel in the Office of Advising of the College of Education.

(1) ELEMENTARY SPECIALIZATION

The major consists of an elementary specialization sequence.

The 45 hours of elementary specialization courses include EDE 409, 411, 413, 415, 417, 419, 421, 423, 424, 425, 440.

Students are encouraged to choose a concentration in a subject taught in the elementary school. With careful planning, a student may receive dual certification in elementary education and a secondary education field.

(2) ELEMENTARY-EARLY CHILDHOOD

Students interested in early childhood teaching which includes pre-school and grades 1-3 should pursue a program leading to certification both in early childhood and elementary education. This program includes 50 hours of course work as follows: EDE 409, 413, 415, 417, 419, 425, 426, 431, 433, 529, 531 and EDE 440.

Students who desire to add early childhood specialization to an existing major in elementary education may complete a planned program in consultation with their adviser.

(3) LIBRARY-AUDIOVISUAL-ELEMENTARY

Information on course work leading to dual certification in elementary and library education-audiovisual education is given in Section B-3.

B. Kindergarten through Twelfth Grade

Candidates meet teaching requirements for all grade levels from kindergarten through the senior year of high school.

(1) ART EDUCATION

The Art Education student may elect to emphasize painting, sculpture, graphics, ceramics, or photography/cinematography by selecting the appropriate courses.

The following courses consitute a program of study:

Art Education: EDA 377, 379, 441 and 498

Studio Art: ART 201, 202, 301, 302, 401, 402, 411, 421, 431, 441, 451 plus nine credits of studio electives.

Art History: ART 476 plus six credits of art history electives.

Fine Arts: FNA 543, 553

Music, Theater, or Dance: six credits from any two areas.

At the time of application to upper level each Art Education student must submit slides or portfolio to Head of Department. To assist transfer students in selection of courses, they must submit work prior to or during registration.

(2) PHYSICAL EDUCATION

A two-year program is offered at the junior and senior year level which provides a daily internship experience in the local schools for prospective physical education teachers. Students may enter this program only during the first quarter of each year and should be prepared to spend a minimum of two hours per day in a physical education teaching situation during each of the six quarters. The continuous field experience is in lieu of the usual quarter of full-day internship and the teacher aid assignments. Those requirements (see admission to supervised teaching experience) which are necessary for admission to the supervised teaching experience must be met before a student will be allowed to register in EDP 331, EDP 421, and EDP 431. Due to the uniqueness of this program, interested students should request a detailed description of the program in advance of enrolling.

Direct requests to: Coordinator
Professional Physical Education Program
College of Education

The following are the required courses in the physical education program of study:

EDP 255, 311, 321, 331, 312, 322, 332, 314, 365, 411, 421, 431, 412, 422 and 432.

Courses in the coaching of athletics may be taken by all students, including physical education majors.

(3) LIBRARY-AUDIOVISUAL EDUCATION (MULTIMEDIA)

Dual certification in Library-Audiovisual Education and Elementary Education requirements include the Education professional core, the Elementary Education Program and a total of 36 quarter hours in Library-Audiovisual courses.

The required EDL courses meet Rank III certification in Library-audiovisual services, grades K-12. These courses are EDE 413, EDL 411, 412, 419,

513, 515, 517, 518, and choice of one of the following EDL electives: 514, 523, or 524. Field work is arranged at the need of the individual student.

(4) SPECIAL EDUCATION

Mental Retardation

A student may enter the Mental Retardation Program in order to prepare for becoming a teacher of the Mentally Retarded. This planned program provides for six quarters of course work in the major area of specialization and in the required elementary area as indicated below. Upon completion of this planned program, the student will be certified in the area of Intellectual Disabilities (K-12).

Junior Year: Quarter I — EDS 311, EDF 305, and two courses chosen from *Required Elementary Courses. Quarter II — EDS 329, 322, EDF 307, and one course to be chosen from *Required Elementary Courses. Quarter III — EDC 401, EDS 312, and two courses to be chosen from *Required Elementary Courses.

Senior Year: Quarter I — EDS 423 I & II, EDF 303, and one course to be chosen from *Required Elementary Courses or **Suggested Electives. Quarter II and Quarter III — Courses below to be taken in Blocks only as indicated. Blocks "A"and "B" are interchangeable in Quarter II and Quarter III. *Block* "A" — CBS 401, EDC 498, EDC 499. *Block* "B" — EDE 531, REH 502, EDS 531, and one course of **Suggested Electives.

Required Elementary Courses: EDE 409, 415, 421, 425, 433.
**Suggested Electives: EDS 511, EDS 561.*

Speech Pathology

Prepares professionals to work with speech, language and hearing impaired children and adults. A five-year program terminating in an M.A. degree in Special Education: Speech Pathology.

The following courses, or their equivalents, constitute the course of study—EDS 311, 322, 611, 699 and/or 579, 479, 531, or PSY 431.

SAI 301, 302, 311, 312, 313, 511, 513, 571, 572, 573, 574, 575, 576, 577, 578, 579, or 675, 580, 589, 683; EDF 305, 307; EDC 401, 498 EDE 531; SSI 301; PSY 335; and the Process Core for the M.A. in Education.

Supervised clinical work in school environments is done in EDS 479 and 579.

Completion of requirements for the master's degree is required prior to certification for employment in the schools.

(5) MUSIC EDUCATION

Instrumental music students must take MUS 201, 202, 203,301, 302, 303, 401, 402, 403; eight minor instruments outside the family of the student's major instrument; 30 credits of Performance (MUS 204, 304, 404, 504), with a minimum of 4 credits of MUS 504; three credits each in theatre arts, visual arts, and dance courses; FNA 543, 553; EDM 431, 432, 433.

Vocal music students must take MUS 201, 202, 203, 301, 302, 303, 401, 402, 403; piano; 30 credits in Performance (MUS 204, 304, 404, 504), with a minimum of 4 credits of MUS 504; three credits each in theatre arts, visual arts, and dance courses; FNA 543, 553; EDM 435, 437, 439.

Special requirements for all music education majors: Placement examinations are required of all new registrants in musical styles (theory and history), and in performance, (completion of the examinations is required before registration in music courses is permitted); successful

completion of the piano proficiency requirement as defined by the music faculty before admittance to upper level; participation in a performing ensemble and the corresponding reading ensemble every quarter, excluding the internship quarter only; the presentation of one-half hour recital in the major performing medium during the senior year; attendance at on-campus musical events (i.e. student recitals, Music Forum events, faculty recital, and Artist Series concerts).

C. Secondary Education

Candidates are required to meet specialization requirements in broad subject fields or in subject combinations. It is also possible for prospective secondary school teachers to add elementary school certification by following an approved program. The secondary school specialization requirements can be satisfied in more than 15 subject areas in eight broad fields.

(1) CLASSICS AND ANCIENT STUDIES

Latin-English Education

CLS 301, 302, 303, 401, 402, 403, 411, 412, 413, 517, 571, and EDX 465; ENG 201, 203, 307, 312, or 305 or 306, 321 or 325, 411, 517, or 535, 585 (Theory of Fiction), SPE 201, and EDT 447.

Latin-Modern Foreign Language Education

CLS 301, 302, 303, 371, 401, 402, 403, 411, 412, 413, 517, 571, and EDX 465. In the modern foreign language a minimum of 26 quarter hours above the basic CBS courses are required. The required courses are: 203, 301, 303, 401, 403, 405, 406 (prefix determined by language selected), and EDX 449.

(2) ENGLISH AND ENGLISH RELATED PROGRAMS

English Education

ENG 201, 203, 307, 312 or 305 or 306, 321 or 325, 411, ENG 313 or 335 or 336 or CLS 351, ENG 517 or 535, 585 (Theory of Fiction), LIN 540 or COM 301, COM 300 or 351, SPE 201, 321, one 400 or 500 level English elective and one elective from English, Speech, Mass Communication, Theatre Arts, Language Literature Interdisciplinary, Philosophy, Classics and Ancient Studies, Education, American Studies and one of the following: EDR 509, EDT 531, or EDL 518. (Note: The internship is ordinarily a three-quarter continuous experience.)

English Education-Journalism

ENG 201, 203, 307, 312 or 305 or 306, 313 or 335 or 336 or CLS 351, 411, 517 or 535, 585 (Theory of Fiction), a 500 English elective, SPE 201 and 321 and COM 300, 330, 331, or 321, and 433 and EDT 463. (Note: The internship is ordinarily a three-quarter continuous experience.)

(3) FOREIGN LANGUAGES

Foreign Language-English Education

ENG 201, 203, 312 or 305 or 306, 313 or 335 or 336 or CLS 351, 321 or 325, 411, 517 or 535 and SPE 201. If an elective is needed, SPE 321 is recommended. A minimum of 36 quarter hours in a modern foreign language above the basic CBS courses is required. The required courses are 203, 301, 303, 401, 403, 405, and 406 (prefix determined by language selected), plus a minimum of

10 additional selected hours of advanced courses in the modern foreign language (ROM 517 and ROM 518 may be used in the selected hours), plus EDX 449 and EDT 447.

Two Foreign Languages

Requires basic studies language requirements (or their equivalent). In the major language (French, German, Italian, Russian, or Spanish) the student must earn 35 upper level credit hours, and in the second language 26 upper level credit hours.

The required language courses are 203, 301, 303, 401, 403, 405, and 406 (prefix determined by language selected), plus a minimum of 10 additional selected hours of advanced courses in the major language.

Single Foreign Language

After consultation with adviser, the Dean may give permission for a student to elect a single foreign language major. A minimum of 45 quarter hours must be earned in the language beyond the basic studies requirements. Among the 45 quarter hours must be the following:

French: FRE 203, 301, 303, 305, 401, 403, 405, 406, and 516.
German: GER 203, 301, 303, 305, 401, 405, 406, and 516.
Italian: ITA 203, 301, 303, 305, 401, 405, and 406.
Russian: RUS 203, 301, 303, 305, 401, 405, and 406.
Spanish: SPA 203, 301, 303, 305, 401, 403, 405, 406, 516, and 561 or 562.

A native speaker must substitute a literature or a romance linguistics course for the first conversation course (203). Moreover, in cases where a native speaker has received his secondary and/or advanced education in his native country, he must substitute a literature or a romance linguistics course for the first composition course (301).

(4) LIBRARY-AUDIOVISUAL EDUCATION WITH A SPECIALIZATION IN ENGLISH EDUCATION

Candidates meet Rank III Library-Audiovisual requirements which certifies K-12 in school libraries. Candidates also meet the 36 hours required in the secondary English program.

Required Library-Audiovisual courses are EDL 411, 412, 419, 513, 514, 515, 517, 518 and EDC 481—Field Work in School Libraries. Electives may be chosen with consent of the adviser. Required English course are ENG 201, 203, 307, 312 or 305 or 306, 313 or 335 or 336 or CLS 351, 321 or 325, 411, 517 or 535 and SPE 201.

(5) MATHEMATICS

The typical program for prospective mathematics teachers consists of a minimum of 47 quarter hours in mathematics above the 100 level. The required courses are MTH 302, 303, 304, 305, 309, 323, 423, and 424. MTH 345 and 420 are strongly recommended. The student has the option of completing a divisional major with a concentration in mathematics. This requires a minimum of 36 quarter hours in mathematics and a minimum of 24 quarter hours in the Division of Natural Sciences outside of mathematics. These latter 24 hours must be approved by the student's adviser and must include a minimum of three quarter hours at the 300 level or above.

(6) SCIENCE

A student planning to teach science at the secondary level should complete the departmental major in the corresponding science area. Requirements for these programs are listed in the catalog under the science departments of the Natural Science Division. EDN 427 is recommended for biology teachers, EDN 425 is recommended for physical science teachers.

An alternate program is available in which the prospective teacher must meet the minimum requirements of the Divisional Major in the Natural Sciences. This requires 36 quarter hours in the discipline of major concentration and 24 quarter hours within the Natural Science division outside the concentration area. These latter 24 hours must be approved by the student's adviser and include at least one 300 level course. (Total program, 60 hours minimum.) Concentrations are available in biology, physics, and chemistry. A typical program for a divisional biology concentration includes BIO 201, 202, 203, 331 and 445 with BIO 351. Additional selections from BOT 302 or 311, BOT 421, ZOO 311 or 313, BIO 421.

Courses outside biology would normally include CHM 211, 212, 213, 331-2, 333-4.

(7) SPEECH-ENGLISH EDUCATION

Speech 201, 203, 321, 361 or 365, 491 and 492, two 5-hour upper division Speech Electives, TAR 303, ENG 201, 203, 307, 312 or 305 or 306, 313 or 335 or 336 or CLS 351, 321 or 325, 411, 517 or 535 and EDC 515.

(8) SOCIAL SCIENCE

To teach at the secondary level the minimum requirements of a Social Science divisional major must be met. All programs in the Social Science divisional major specify 64 credits or more in the Social Sciences. A teaching emphasis requires 24 credits in one discipline within an approved program that includes courses in at least four disciplines. The student will take courses which will lead to certification in the broad area of social sciences but may concentrate his studies in the specialized areas of History, political Science, or Geography.

The social science internship is a three-quarter continuous experience program where a candidate works part of each day in a school for three quarters. The program provides both junior high school and senior high school experience. The one-quarter internship may be taken only by permission of the chairman of social science education.

Social Science Programs

Social Science

ECN 201, ECN 202, GPY 301, GPY 302, HTY 100, HTY 211, HTY 212, HTY 231, HTY 232, POL 201, POL 203, SSI 361 and one of the following, SOC 261, SOC 331, SOC 341, SOC 541, SOC 543. Ten additional hours of upper level courses in the social science division are also required.

Social Science—History Emphasis

ECN 201, ECN 202, GPY 301, GPY 302, HTY 100, HTY 319, HTY 320, HTY 587, POL 201, POL 203, POL 331, SSI 361, and one of the following, SOC 261, SOC 331, SOC 341, SOC 541, SOC 543. Twelve hours of upper level History other than American are also required.

Social Science—American History Emphasis

AMS 301, ECN 202, GPY 301, GPY 302, HTY 100, HTY 211, HTY 212, HTY 587, POL 201, POL 203, or POL 453, POL 331 or POL 445. Three courses selected from three of the following five pairs of courses-1) HTY 301, HTY 302, 2) HTY 303, HTY 304. 3) HTY 315, HTY 316, 4) HTY 319, HTY 320, 5) HTY 411, HTY 412; and one of the following-SOC 261, SOC 331, SOC 341, SOC 541, SOC 543. Additional hours of any upper level courses in the Social Science Division are required to bring the total social science hours in the program to 64.

Social Science—Political Science Emphasis

ECN 201, ECN 202, GPY 301, GPY 302, HTY 211-212 or HTY 411-412, HTY 231-232 or HTY 251-252 or HTY 431-432, POL 201, POL 203, POL 331 or POL 338, POL 431 or 432, POL 461 or POL 462 or POL 463, SSI 361, and one of the following—SOC 261, SOC 331, SOC 341, SOC 541, SOC 543. Four additional hours of upper level Political Science courses are also required.

Social Science—Geography Emphasis

ANT 201, ECN 202, GPY 301, GPY 302, GPY 303, 371, 405, HTY 211-212 or HTY 411-412, HTY 231-232 or HTY 431-432, POL 201, POL 331, one of the following: SSI 341, SSI 343, SSI 345, SSI 347; and one of SOC 261, SOC 331, SOC 341, SOC 541, SOC 543.

D. Vocational and Adult Education

Candidates planning to teach in county-wide adult and secondary education programs, junior college associate of arts and area vocational schools, continuing education centers, model cities programs, and other vocational, adult and technical schools may pursue one or more of the following specializations:

(1) ADULT EDUCATION

Master of Arts degree program only

(2) BUSINESS AND OFFICE EDUCATION

To complete program requirements leading to Rank III certification in the broad field of Business Education, students must take 73 hours of course work in the business area and 36 hours of professional education courses. Requirements include ACC 201, 202, 203, ECN 201, 202, GBA 361, 371, EDV 141, 143, 251, 252, 351, 361, and 461. EDV 141 and 251 may be replaced with special permission by electives in general education or liberal arts (e.g., EDC 101, EDF 303, EDL 419, SPE 201). Two special methods courses are included in the professional education sequence.

(3) DISTRIBUTIVE EDUCATION

To qualify to teach in the area of Distributive Education students must take 62 hours of course work. They must take 32 hours of business administration courses including ACC 201-202-203; ECN 201-202; and MKT 301-311-315. The remaining 30 hours will be in Distributive Education and approved electives, and must include EDV 407, EDV 506, EDG 401 and EDF 303 or ECN 331. In addition, they must fulfill the state requirement of two years of distributive on-the-job work experience or complete 2100 hours of acceptable training. EDV 431, Supervised Field Experience: Distributive Education and

Cooperative Education training experience are offered as suggested avenues to meet this requirement. (Acceptability of work experience will be determined by the Adult and Vocational staff at the University of South Florida.)

(4) INDUSTRIAL-TECHNICAL EDUCATION—(TBA)

Master of Arts Degree Program

ADMISSION

Candidates for admission for graduate study must present satisfactory evidence of:

1. Undergraduate grade point ratio on the last half of the B.A. of 3.0 (B) or better, or GRE-aptitude score-1000 minimum, or equivalent.
2. Receive favorable recommendation from program chairman.

FILING OF PROGRAM

During the first term of graduate study the candidate for the Master's degree must file a planned program of studies. This report of Graduate Advisory Conference is to be completed in consultation with the advisor. The completed report should be filed with the Coordinator of Graduate Studies in EDU 112.

QUALITY OF WORK

Candidates for a master's degree must maintain a 3.0 GPA. At the end of any term in which the student's GPA falls below the required minimum, the student will be placed on probation for a period of one term. If the GPA is below 3.0 at the end of the probationary term the student will be reclassified as "non-degree" and remain in that status until the GPA meets the required minimum.

A maximum of 12 quarter hours may be transferred from non-degree to degree seeking status.

RESIDENCY

The candidate for the master's degree will be required to meet the residency requirement established by each program area. Consult the appropriate program area for details.

COMPREHENSIVE EXAMINATION

During the last term of enrollment, prior to completion of degree requirements, the candidate must perform satisfactorily on a comprehensive examination.

PROCESS CORE EXAMINATION

Graduate students with sufficient undergraduate background may take the Process Core Examinations after consultation with their advisors. Successful performamce on the examination enables a student to waive the course requirement, but he must take elective courses in lieu of the hours required. The Process Core Examinations are in the Foundations of Measurement, Psychological Foundations and Social Foundations of Education. Graduate students on a Plan II Master's Program are not eligible to take the Process Core Examinations unless they have a comparable course at the undergraduate level.

Plan I

A program of graduate studies designed for those with appropriate certification who desire to increase their competence in a subject specialization or receive professional preparation in one of the service areas of education.

Plan II

A program of graduate studies designed for the holder of a non-education baccalaureate who desires to meet initial certification requirements as part of a planned program leading to the master of arts degree. (This program is not available in the area of elementary education.)

Qualified persons may pursue graduate study in the following majors:

- Art Education
- Elementary Education
- English Education
- Foreign Language
- Guidance
- Humanities Education
- Library and Audiovisual
- Mathematics Education
- Music Education
- Physical Education
- Reading Education
- Science Education
- Social Science Education
- Speech Education

Special Education with programs in:

- Emotionally Disturbed
- Gifted
- Mental Retardation
- Potentially Handicapped, N-3
- Speech Pathology

Vocational and Adult Education with programs in:

- Adult
- Distributive
- Business and Office
- Industrial-Technical

Junior College Teaching:

- Astronomy
- Botany
- Chemistry
- Engineering*
- English
- French
- Geography
- Geology
- History
- Mathematics
- Microbiology
- Physics
- Political Science
- Psychology
- Sociology
- Spanish
- Speech
- Zoology

* Engineering bachelor's degree required.

Additional programs for Junior College teachers will be added to those listed as other instructional divisions of the University are approved to offer the master's degree. General University rules for graduate study may be found in the Graduate study section of the catalog.

PROGRAM DESCRIPTION

Master of arts degree programs consist of a minimum of 45 quarter hours, 24 hours of which must be at the 600 level. Most specialization areas include the option of a thesis of three to six credit hours.

Plan I

A. PROCESS CORE (16 hours)

Students will take a minimum of one process core course prior to the 12-hour level. All students will be required to take EDF 607, Foundations of Educational Research, as part of their graduate program. Competencies indicated by undergraduate background will determine waiver of, or enrollment in:

a) EDF 605, Foundations of Measurement
b) EDF 611, Psychological Foundations of Education; or EDF 613 Principles of Learning
c) EDF 621, Socio-Economic Foundations of Education; or
EDF 623, Historical Foundations of American Education; or
EDF 625, Philosophical Foundations of American Education.

B. CURRENT TRENDS COURSE IN TEACHING SPECIALIZATION (4 hours)

C. SPECIALIZATION (27 hours minimum)

The following areas of specialization are suggested programs of study. Individual programs will vary depending on background, experience, and specific interest.

(1) Art Education

In consultation with a graduate advisor, a student may develop a program in art education with a specialization in one of three areas:

a) Studio/new media
b) Art Administration, Supervision & Curriculum Innovation
c) Research Methods for Art Education

A portfolio or slides of recent creative work must be submitted prior to admission into the program. The departmental requirements for all degree seeking candidates are:

Art Education 12 credits (EDA 660, 661, 682)
Art Studio 12 credits (minimum)
Art History 3 credits (minimum)

The remainder of the credits, totaling a minimum of 54, may relate to one of the three areas of specialization.

(2) Elementary Education

This program requires full certification as an elementary education teacher for admission. Students pursuing the master's degree in elementary education are required to present credit in the following courses: EDE 603, 609, and 613.

(a) Elementary Curriculum Emphasis: At least three courses must be selected from EDE 611, 615, 617, 619, and 621. Additional work is available through consent of the adviser as part of a planned program.

(b) Reading Emphasis: Three courses from EDR 530, EDE 611, EDR 631, EDR 632, and EDL 518 or EDL 605 are required.

(c) Supervision Emphasis: EDC 661, 671, and EDE 641 are required.

(d) Early Childhood: Individually planned program to include EDE 527, 529, 531, 539.

(3) English Education

Candidates must score at least 500 on the Verbal Aptitude section of the GRE or 550 on the Advanced Literature test of the GRE.

PLAN I —Required for admission: A Bachelor's degree in English Education from a recognized institution, or Rank III certification in English from the State of Florida or other equivalent certification. Students holding a Bachelor's degree and qualified for Rank III English certification except for the required Education courses may enroll as non-degree seeking graduate students and complete certification requirements. After obtaining certification, they may transfer to degree-seeking status and apply up to 12 quarter hours of relevant work in Education on this degree. Plan I requires at least 32 hours of English as specified below.

PLAN II —Required for admission: A Bachelor's degree in English from a recognized Liberal Arts institution of higher learning. Requires at least 28 hours of English as outlined below.

Course Sequence for both plans: Process Core (16 hours), EDT 631, ENG 585 (Theory of Fiction), ENG 583 (Advanced Composition for Teachers), One advanced course in linguistics, depth preparation in two English areas (minimum of two courses in each) from among the following: 1) Old English-Middle English (to 1500); 2) Renaissance (1500-1660); 3) Restoration-Eighteenth Century (1660-1780); 4) Nineteenth Century British (1780-1890); 5) American Literature (to 1920); 6) Twentieth Century British (after 1890); 7) Stylistics. Plan II students also take EDC 501 and participate in a 12-hour internship which is required for certification but not for the degree.

(4) Foreign Language Education (French, German, or Spanish)

The candidate's baccalaureate degree must be (1) in his chosen foreign language or (2) in foreign language education from an accredited institution of higher learning. Candidates must present a score of 460 or higher on the verbal portion of the Graduate record examination.

Each candidate will be assigned a major adviser in the College of Education and, to facilitate selection of the most appropriate foreign language courses, a co-adviser in the foreign language department of the College of Liberal Arts. Since identical lists of foreign language courses are not prescribed for all candidates, and since each candidate's program is designed individually to satisfy individual needs, the specific foreign language courses are selected in consultation with advisers. Candidates should meet with both advisers before registering each quarter.

The M.A. in foreign language education requires a minimum of 27 quarter hours in 500 level and 600 level foreign language courses. Foreign language requirements, however, may go as high as 36 hours, depending upon the individual candidates' background and strengths. Unless otherwise approved by adviser, at least 21 hours in French should be on the 600 level; in German at least 15 hours should be on the 600 level; in Spanish at least 18 hours should be on the 600 level.

(5) Guidance

The guidance program typically requires seventeen credits from the process Core including EDF 605, EDF 607, EDF 613, and one of the following: EDF 621, 623, or 625. Additional course requirements depend upon the major emphasis in either elementary school guidance or in secondary school guidance.

Elementary School Guidance Emphasis: Requirements in specialization

and related courses total 38 credits and include EDG 581, 603, 607, 611, 613, 617, 621, 625, 633, and PSY 433.

***Secondary School Guidance Emphasis*:** Requirements in specialization and related courses total 39 credits and include EDG 581, 603, 607, 611, 619, 623, 627, 633, PSY 433, and an approved elective.

Plan II is available in both emphases and requires EDC 501 and EDC 691 in addition to minimum requirements.

The Guidance Program has no full-time residency requirement. Students who are gainfully employed on a full-time basis are limited to one course per quarter. Exceptions are made only with permission of the Guidance Program Committee.

(6) Humanities Education

A teaching certificate in fine arts, language, literature, music, or in special cases in a related subject is required for admission. The program in Humanities consists of 27-45 quarter hours selected from the following with the advice of the adviser in the field of specialization: HUM 535, 536, 537, 539, 540, 541, 542, 543, 545, 581, 611, 623, 681, 683. Up to nine hours may be substituted for the above from courses outside of Humanities with the consent of the adviser in Humanities.

(7) Library-Audiovisual (Media) Education

Basic courses are required for all students with a choice of specialization for work in one of the following programs: School Library—Audiovisual (Media); Public Library; Academic Library; Special Library.

The School Library—Audiovisual program also meets Rank II certification requirements for the State of Florida.

The minimum number of graduate course work hours required in all programs is 45. In extreme cases the maximum may range to 75. Thesis hours, when elected (4-6), are in addition to course work. This maximum is only for those people with no course work in Education or in Library—Audiovisual Education at the time they are admitted to the graduate program.

Required courses for students in all Library programs are EDL 600; EDL 601; EDL 513; EDL 515 (or their equivalents as determined by the Library—Audiovisual advisor) and one audiovisual course. If EDL 513, 515, 615 and the audiovisual course were taken at an undergraduate level, with the consent of the advisor, alternative courses may be chosen as substitutes.

Administration courses recommended for each specialization are: EDL 612 (for School Libraries); EDL 621 (for District or system School Media Centers); EDL 640 (for Public Libraries); EDL 650 (for Academic Libraries).

School Library—Audiovisual Certification requires courses in materials for children and in materials for young adults. Electives may be chosen from any of the other Library—Audiovisual courses. School Library—Audiovisual students are subject to the same core Education requirements and/or waivers as all other graduate education students.

Public, Academic and Special Library students are exempted from the Education core. Among recommended courses for them in lieu of the Education core are: EDF 502-*Adolescence* (Education); EDH 651-*The Junior College in American Higher Education* (Education); SSI 503 - *Contemporary American Culture* (Liberal Arts).

With the consent of his advisor any student may choose one or more cognates from courses offered outside of the department.

Criteria for admission are those specified by the College of Education.

All students must take a comprehensive examination administered by the Library—Audiovisual Department before graduation. A Thesis or a Master's Essay may be chosen with the consent of and under the guidance of the graduate advisor. These are subject to the criteria determined by the University.

(8) Mathematics Education

This program requires a minimum of 51 quarter hours. Before the 12-hour level the student must demonstrate that he has the competence in mathematics to undertake the program. MTH 405, 406 and any MTH course from the 500 and 600 level and above may be included in the planned program.

(9) Music Education

Programs in both instrumental and vocal music are offered. At least 27 hours are taken in one of these areas. A placement examination is required of all new registrants in musical styles. Each candidate must meet the undergraduate level of piano proficiency before the quarter in which he expects to graduate. Participation in emsembles is required for at least three quarters. Three plans are available to the candidate: 48 hours plus thesis, 51 hours plus recital, or 54 hours without thesis or recital.

Vocal Majors: 7 to 14 credits in music education, including EDM 601, 635, and 614,; 4 to 8 credits in music literature, including MUS 603; at least 4 credits in music theory; and at least 4 credits in applied music.

Instrumental Majors: 7 to 14 credits in music education including EDM 601, 603, 617, 633; 4 to 8 credits in music literature, including MUS 601; at least 4 credits in music theory; and at least four credits in applied music.

(10) Physical Education

Areas within the program in which a student may focus study are Elementary Physical Education, Secondary Physical Education, or Physical Education for the Handicapped.

Enrollment in EDP 600, Professional Assessment, is required of all students. Preferably this course will be completed during the first quarter of Study in the program and not later than the completion of eight quarter hours of credit in the physical education curriculum area.

(11) Reading Education

Specialization in Reading Education shall include a minimum of 36 hours selected from EDE 609 or EDR 509, EDR 631, 632, 633, 634, 635, EDF 605, 617 and EDL 518. (Candidates who have had a children's literature course at either graduate or undergraduate level may take an elective in lieu of EDL 518.) Suggested electives are ENG 517, EDE 611, EDE 531, EDS 571, EDS 574, EDS 676, EDC 661, PSY 613.

(12) Science Education

Concentration in Biology, Chemistry, or Physics are available in a cooperative program with the Natural Science division. In each instance before admission to the degree program the student must satisfy the Biology (Chemistry, Physics) adviser that he has the competence to undertake the program. Specialization shall consist of at least 27 quarter hours approved by the adviser in the discipline. Satisfactory completion of the program must be certified by both the Division of Natural Science and the College of Education.

A program with a concentration in Marine Science is available through

cooperation with the Marine Science Institute. Before admission to the program the student must satisfy the Director of the Marine Science Institute of his competence to undertake the program. Twenty-seven hours designated by the Marine Science adviser will constitute the minimum specialization. This will include at least two of the Oceanography courses. Satisfactory completion of the program must be certified by both the Marine Science Institute and the College of Education.

(13) Social Science Education

Advanced training for the purpose of becoming better teachers of social studies in grades 7 through 12.

Plan I

For students who are certified to teach secondary social studies or one of the separate subject areas of economics, geography, history, political science, or sociology.

Each student will select at least seven courses at the 500 or 600 level from anthropology, economics, geography, history, psychology, sociology, or social science (interdisciplinary). Three or more courses must be at the 600 level.

This part of the program will be individually designed in consultation with the adviser. Courses must be selected from at least four disciplines and no more than one half of the specialization may be in any one social science discipline.

(14) Special Education

The Emotionally Disturbed

The purpose of this program is to train educators for emotionally disturbed children. An individualized program is available under both Plan I, for certified and experienced teachers, and Plan II, for those with a non-education baccalaureate.

Plan I

Through a Plan I program, a certified, experienced teacher may satisfy the requirements for graduation within four quarters. Of the minimum 48 hours, at least 30 hours are allocated to the area of specialization. EDS 531, 610, 611, 632, 633, and 639, or equivalents, are required of all students. Additional courses, including electives, are planned jointly by the student and his adviser.

Plan II

The student with a non-education baccalaureate may meet initial certification requirements through a Plan II program. The individually designed course of study will include the minimum 30 hours in the area of specialization (as outlined above) plus such other courses planned jointly by the student and his adviser, which may be necessary to meet certification requirements in the student's chosen subject area. This program will require more than four quarters of attendance for completion.

The Gifted

The Gifted Child Teacher Training program provides advanced training for experienced teachers to work with gifted children and other teachers on a consultant or teacher-leader basis.

There is also an inexperienced teacher-training program which is designed

to prepare Liberal Art majors or education majors to work with classrooms of gifted children.

Emphasis is on the development of subject matter specialization and specific skills to:

1. identify the gifted,
2. make an individual diagnosis of cognitive and affective strengths and weaknesses, and
3. modify the educational program to develop the gifted child's potential.

Plan I

Through a Plan I type of program an experienced, certified teacher can anticipate preparing for teacher-consultant roles in the area of the gifted in four quarters.

A minimum of 28 credit hours in the area of specialization is required. Included among the courses usually required are EDS 531, 541, 550, 551, 559, 610, 611, and EDC 552.

An individually tailored, Liberal Arts sequence of from 14 to 28 quarter hours is also a requirement of the program.

Plan II

An individual with a Liberal Arts undergraduate major may prepare as a teacher-consultant of the gifted through Plan II.

The student will be expected to take a minimum of 28 quarter hours in the area of specialization. In consultation with his adviser, he will choose from the following: EDS 531, 541, 550, 551, 559, 611, 610; EDR 631, 632; EDT 631; EDN 637, 639, 641; EDE 611, 613, 615, 617, 619; EDW 643; and EDC 552.

Mental Retardation

The course of study is designed to prepare the student to become a more effective teacher or supervisor of teachers for the retarded.

It is highly recommended by the Department of Mental Retardation that any student who is about to apply for Graduate work in the area of Mental Retardation contact that office for advising purposes before any courses are taken or application made for admission.

Plan I

Through a Plan I Program, a certified teacher may satisfy the requirements for graduation within four quarters.

Process Core Requirements (16 hours).

At least 30 hours are allocated to the area of specialization with an emphasis on Mental Retardation — Required: EDS 620, 621, 622, (12 hours) and Written Comprehensive Examination. Select 18 hours from the following: EDS 529, 531, 541, 511, 550, 560, 561, 562, or 676.

Plan II

The student with a non-education baccalaureate may meet initial certification requirements through a Plan II Program as follows:

(1) Basic Elementary Required: EDE 409, EDS 322, EDS 423 I.
EDS 423 I may be counted for Master Credit.
(2) Process Core Required (16 hours).

(3) Required Courses in Mental Retardation: (38 hours)
EDC 501, EDC 691, EDS 610, 620, 621, 622, 676, 529.
(4) Electives: (Select eight hours)
EDS 611, 613, 531, 541, 550, 560, 561, 562.
(5) Written Comprehensive Examination.

Potentially Handicapped: Varying Exceptionalities

The course of study is planned for advanced training to prepare teachers and supervisors of teachers of Varying Exceptionalities.

Plan I

A minimum of 30 quarter hours in the area of specialization is requisite to successful completion of the Plan I program for teachers of Varying Exceptionalities. Individualized program will include courses to be taken from the following: EDS 531, 541, 550, 551, 610, 611, 612, 620, 622, 632, 649, 676, and PSY 613. Additional courses, including electives, are planned jointly by the student and his advisor.

Plan II

Individuals with a non-education baccalaureate may prepare for the teaching of Varying Exceptionalities through Plan II. Ordinarily, it will take more than one academic year to complete the Program. Individually designed course of study will include a minimum of 30 credit hours selected from special education courses with an emphasis on Varying Exceptionalities.

Speech Pathology

A five-year program terminating in an M.A. in Special Education: Speech Pathology is available to undergraduate students. See Undergraduate Section. Students who already have a baccalaureate degree in Speech Pathology or a related area (such as Speech, English, Psychology, Education, Nursing, and others) are encouraged to enter the graduate program in Speech Pathology. They must take the requirements of the fifth year of the Speech Pathology sequence. The prerequisites to the courses in the fifth year may be waived by demonstration of proficiency or by electing suitable substitutes.

Requirements of the fifth year are EDS 531 or PSY 431; EDS 611, 699 or 579; SAI 576, 577-578, 579, 580 and the process core for the M.A. in education. In addition, three to six hours must be taken in SAI 698: Practicum in Speech Pathology.

Planning of such a graduate program must be approved by a speech pathology adviser.

(15) Vocational and Adult Education

Adult Education

1) In consultation with the graduate advisor, a program will be planned which will include a minimum of 45 quarter hours. Specialization requirements of 27 quarter hours in Adult Education are designed to provide competencies in organization and administration, supervision, adult learning characteristics, curriculum development, program planning, methods of teaching and research techniques as each of these relate to adult education programs. Generally, specialization courses will be selected from the following, depending upon the individuals background of experience: EDV 445, 503, 506, 631, 661, 671, and 687.

2) Requirements in a related area may include a concentration of courses in one of the following areas: psychology, sociology, guidance, administration, complementary basic, or a vocational field.

Business and Office Education

1) Appropriate College of Business Administration courses in accounting, economics, business law, business communications, finance, management, marketing, and office administration (22 quarter hours maximum). Any deficiencies in basic business courses needed for business teacher certification or deficiencies in the functional business administration courses must be included in the Master's candidate's program.

2) Business Education—minimum of 12 quarter hours from EDV 506, 503, 507, and EDV 687.

3) Selective courses from which to choose in Vocational and Adult Education—EDV 407, 511, 431, 445, 480, 503, 504, 506, 621, 641, 651, 661, 671.

4) Selected courses in one related area such as Guidance, Special Education, Business Administration, Junior College, Administration or Supervision (4-12 quarter hours).

Distributive Education

1) Appropriate College of Business Administration courses in accounting, economics, finance, management, marketing, and office administration (22 quarter hours maximum).

2) Distributive Education—minimum of 12 quarter hours from EDV 507, 506, 445, 511, 671, 661, 431, 651, 480, 621, 641, 504, 503.

3) EDV 687 Seminar in Distributive Education Research.

4) Selected courses in a related area such as Guidance, Special Education, Business Administration, Junior College, Administration or Supervision (4-12 quarter hours).

Industrial-Technical Education

Before admission to a degree program, a student must have met certifiable vocational or industrial work qualifications. In addition to the Process Core requirements, EDV 631, 651, 661, 671, and 687 are specialization requirements. Courses totaling a minimum of 45 quarter hours will be a part of the student's program which he will plan with the graduate advisor for industrial education.

Related electives (0-16 quarter hours). See areas of specialization listed above. The Plan II program in Vocational and Adult Education is designed primarily for non-certificated teachers. The candidate is required to complete additional professional education courses—usually EDC 501 and EDC 691, which are in excess of the normal Process Core requirements. A student will be advised of other courses which he must complete. Master's Degree candidates wishing to be ceritified must meet the state's minimum certification requirements in the area of specialization.

Plan II

The program outlined below is designed for the person who has completed a bachelor's degree with little or no work in professional education and who desires to earn a master's degree and meet certification requirements for

secondary school teaching. Completion of an undergraduate major, or its equivalent, in the intended teaching field is assumed.

A. PROCESS CORE (21 Hours)

EDC 501, Curriculum, and Instruction: Secondary
EDF 605, Foundations of Measurement
EDF 607, Foundations of Educational Research
EDF 611, Psychological Foundations of Education
EDF 621, Socio-Economic Foundations of Education; or
EDF 623, Historical Foundations of American Education; or
EDF 625, Philosophical Foundations of American Education.

B. CURRENT TRENDS COURSE IN TEACHING SPECIALIZATION (4 hours)

C. SPECIALIZATION (minimum 27 hours)

An individually planned graduate major in the College of Liberal Arts in the teaching field or in an appropriate College of Education program for K-12 specialists. See Specialization section under Plan I, above, for description of major requirements.

D. INTERSHIP (9 hours)

Enrollment will be in EDC 691 which involves planned observation and supervision by a member of the University faculty and a secondary school staff member. In-service teachers are required to complete this assignment over two quarters.

Junior College Program

The University of South Florida has developed a program for junior college teachers which leads to the master of arts degree and Florida State Department of Education certification at this level. The College of Education, in close cooperation with the Colleges of Business, Engineering, and Liberal Arts, has formulated the program.

The Junior College programs include:

Astonomy	Geography	Physics
Botany	Geology	Political Science
Chemistry	History	Psychology
Engineering*	Mathematics	Sociology
English	Microbiology	Spanish
French		Speech
		Zoology

* Engineering bachelor's degree required.

A. ADMISSION AND ADVISING

Because of the unique character of the Junior College Program which integrally involves two colleges of the University, there are admission and advisory regulations which go beyond those listed in the section dealing with Graduate Study.

While application for admission to the program may be made in either the Office of the Dean of the College of Education or in the divisional office of the student's field of specialization, action on all applications is the joint responsibility of the two colleges. Admission to the program requires the

minimum score of 1000 on the combined verbal and quantitive aptitude tests of the Graduate Record Examination. Duplicate sets of the student's complete record will be on file in both offices, with the College of Education charged with the responsibility of making official recommendations for the granting of the degree to the Vice President for Academic Affairs and to the Registrar.

Students in this program will have two advisers, one in the College of Education and one in the area of the student's major field. The education advisor is the Chairman of the Junior College Program or one assigned by him; the major field adviser will be assigned by the departmental chairman of the student's substantive field. The two will constitute the student's inter-college committee which supervises the student's individual progress, plans his program and recommends him to the deans of the two colleges, or their representatives for graduation.

B. THE PROGRAM

Consists of a minimum of 45 quarter hours, plus an internship of (0-9) hours if deemed necessary.

1. Specialization (36 hours)

Typically, the student's program will include 36 quarter hours of graduate work in a field of specialization. The specialization sequence to be completed will be worked out in consultation with a designated major field adviser. This "typical" program is based on the assumption that the student has an undergraduate background in his specialization area which is roughly equivalent to the pattern of the appropriate University of South Florida major. Students admitted without such preparation may be required to correct deficiencies. By the same token, the unusually well prepared student may be permitted to take fewer courses in his specialization area, substituting approved electives from other fields of study.

2. Professional Education (9-18 hours)

(a) Courses in Higher Education (9 hours)
EDH 651, The Junior College in American Higher Education (4)
EDH 653, Seminar in College Teaching (5)

(b) EDC 691, Internship (0-9 hours)

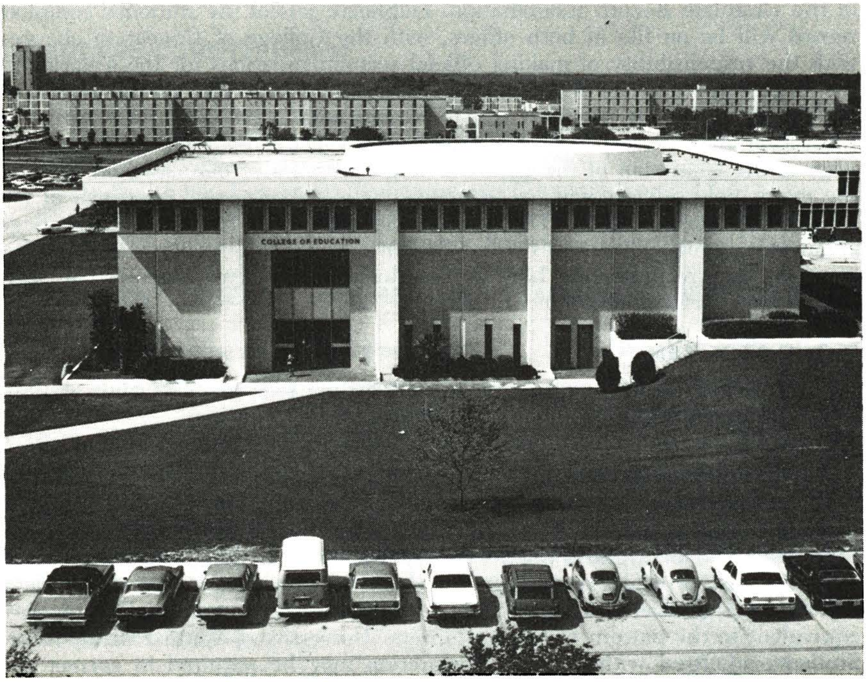
Those students who have not met the internship requirement for certification (up to nine hours credit in internship or two years or more of successful full-time teaching experience) must complete EDC 691, Internship. Typically, the internship will consist of full-time supervised teaching for one quarter or part-time teaching for two quarters. At least one-half of the internship must be in a junior college, the other half being left to the discretion of the student's committee.

Those students who have met an internship requirement or who have had two years or more of successful full-time teaching experience prior to admission to the program will not normally be required to take EDC 691, Internship. This does not preclude the possibility of an internship for less than 9 quarter hours if the advisers deem it to be desirable.

Ed. S. Program

The Education Specialist (Ed.S.) program has been developed to provide for the new state-approved Rank 1-A certificate.

Education Building (residence halls in background)



Ph. D. Program

PRE-SECONDARY EDUCATION

This concentration in the Ph.D. program will prepare Early Childhood and Elementary Education specialists in a variety of sub-specialties. Presently offered are programs in Early Childhood education, Reading and Language Arts, Mathematics education, Special Education, and Urban Research.

The Urban Research program will provide preparation for a variety of tasks in public school research centers and in higher education. Candidates will have breadth of preparation necessary to apply techniques from the social disciplines which are relevant to the complex needs of urban education. The candidates will be members of task-oriented seminars studying inner-city problems of the Tampa Bay area. The three-year post-master's sequence will require a one-year internship as a member of the research staff.

College of ENGINEERING

Engineering Program Information

The College of Engineering takes a modern approach to the education of tomorrow's engineers which provides for individual development both in technical competency and in human values. As our society has become more complex, so has the array of problems to be solved by the engineer. Even now, research engineers are working on such projects as nuclear spin gyroscopes to provide guidance for spacecraft, and on the development of instrumentation for exploration deep in the oceans. Others are engaged in developing artifical body organs such as hearts and kidneys, while some are designing bridges and highways. Still others have become manufacturers and sales engineers. Many have assumed top managerial responsiblities in almost all fields of endeavor.

The College has developed its programs with an emphasis in three broad groupings of engineering activity—design, research and the operation of complex technological systems. Students who are interested in advanced design or research should pursue the Five-Year Program leading to Master of Science in Engineering. Others students interested more in operational responsibilities may wish to complete their initial engineering education at the baccalaureate level. For this purpose a Bachelor of Science in Engineering is offered which provides the student a broad education with sufficient technical background to effectively contribute in many phases of Engineering not requiring the depth of knowledge needed for advanced design or research.

While the baccalaureate degree is considered the minimum educational experience for participating in the Engineering Profession, students are strongly encouraged to pursue advanced work beyond the baccalaureate either at this or other institutions. It is becoming increasingly evident that a large segment of today's Engineering Profession is involved in some form of post baccalaureate study. Engineers are earning advanced degrees in ever increasing numbers in order to obtain the information and training necessary to meet tomorrow's technological challenges. All are faced with the continuous problem of refurbishing and updating their information and skills and most are obtaining advanced information by means of seminars, special institutes and other such systems designed for this purpose.

Because of the broad range to today's engineering activity and the increase in scientific knowledge with its many inter-relationships, it has become increasingly difficult to maintain the traditional identification of engineering effort such as electrical, mechanical, and so forth. Many users of engineers have abandoned such descriptions of engineering work in favor of

more functional descriptions of their activities. The College has therefore organized its programs on a somewhat different arrangement than those providing traditional degrees and awards degrees with a unified designation, M.S. in Engineering and B.S. in Engineering.

Both the Master of Science and Bachelor of Science programs have as their foundation a core of subject material encompassing Humanities, Social Science, Mathematics, Science and Engineering which is required of all students. In addition to the core subject material, each student will complete a program of specialization that has been approved by his upper level advisor. Students wishing to pursue course work commonly associated with such traditional degree programs as aerospace engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, mechanical engineering, etc. can do so within the framework of the program; however, each department of the College has program flexibility. Students wishing to arrange individual programs of an inter-departmental or inter-College nature can do so with the approval of his upper level advisor. For the student following the Five-Year Program leading to the Master of Science degree, a design or research project is completed during the senior and fifth year which enables the student to focus attention on an Engineering problem of major interest. The problem selected may relate to any topic of engineering endeavor (space, the oceans, nuclear power, urban transportation, microelectronics, etc.) for which there is sufficient faculty experience to guide the project.

The five-year program leading to the Master of Science in Engineering degree is an integrated program of 246 quarter hours and the Bachelor of Science in Engineering degree program requires 201 quarter hours. Both programs include the common course work core of 152 quarter hours.

Other Program Information

The College of Engineering offers several degree programs and serivce minors which are designed to meet the needs of business, industry and the academic community. A more detailed description of the programs can be found under the title of Applied Science and Technology later in this section of the catalog. Present offerings include:

Computer Languages
Computer Science Minors-Senior and Graduate
Bachelor of Engineering Technology

General Engineering Requirements

The College of Engineering is organized as a professional upper division and graduate college within the University. Students will normally be admitted to the college upon successful completion of a minimum of two years of college level work, and the following the completion of their third year (junior level) requirements will elect, with the advice and approval of an engineering faculty committee, to pursue either the five-year program in engineering leading to the master's degree or to terminate their programs with a baccalaureate degree.

The high school student anticipating a career in engineering should elect the strongest academic program that is available while in high school. Four

years each of English, mathematics and science, as well as full programs in the social sciences and humanities, are most important to success in any engineering college. A foreign language, while not a necessity, provides a desirable background for students, many of whom will continue for advanced study.

Junior college students planning to transfer to the University of South Florida's engineering program at the junior level should plan to graduate from their respective junior colleges, thus completing their general education requirements and as much of the mathematics, science and engineering core course work as is available to them. The University's College of Engineering is available to assist junior colleges in the development of course material and in the training of staff for their offering of applicable core pre-engineering course work.

Some prospective students who are considering pre-engineering at the University of South Florida may lack certain preparation in high school and may elect to follow several programs which will assist them in overcoming their deficiencies. One alternative might be that such a student would select a summer program at the University of South Florida to update himself in mathematics and the physical sciences. Another alternative might be for the prospective engineering student to take some remedial work and a less accelerated program at the University of South Florida. For financial or other reasons, students may wish to avail themselves of the state's system of junior colleges which offer a wide range of course work, and many of which offer full programs in pre-engineering (first two years' course work).

Engineering Advising

Freshman and sophomore engineering students as well as prospective engineering students should contact the Chairman of Engineering Advising, 974-2528, for the assignment of an adviser.

All students admitted to upper division status will be assigned an adviser at the time of their admission. As specialization programs are established only with the approval of the upper level adviser, this initial step is most important. Upper level students will be assigned an adviser based upon their indicated interests. Students may change advisers providing the proposed new adviser is willing to accept the student and the change is approved by the Office of the Dean. Students should report to the Office of the Dean to confirm their adviser assignments.

Departments

The supervision of the academic program for the College is the function of five organizational units, each having a chairman responsible for the programs, faculty, laboratories and students assigned to the unit.

PRE-ENGINEERING

This unit will assist the student prior to his admission to upper division engineering. Basic course work is offered in Engineering Graphics and Engineering Analysis. The chairman of pre-engineering serves as chairman of the undergraduate advising and registration committee. This department does not offer a degree program.

ELECTRICAL AND ELECTRONIC SYSTEMS

The programs of this department provide upper level and graduate study in all areas fundamental to Electrical Engineering and the electrical sciences; circuit analysis and design, electronics, communication, electromagnetics, control, solid state, systems analysis, electronic computer design, etc.

ENERGY CONVERSION AND MECHANICAL DESIGN

This department offers upper level and graduate instruction pertinent to the analysis and design of machines and systems needed by our modern society. In addition to courses dealing with the classical Mechanical Engineering subjects of lubrication, vibration and fatigue analysis, machine design, thermodynamics, heat transfer, environmental control and power systems, it provides instruction in other fields of increasing importance to the engineers of the future. Some of these fields are computer simulation, instrumentation, automatic control, power utilization, acoustics, chemical and nuclear engineering.

INDUSTRIAL SYSTEMS

Upper level and graduate programs are provided by this department relative to the design, evaluation, and operation of a variety of industrial systems ranging from manufacturing plants to service industries. Such topics as plant facilities design, production control, measurement and methods design, economic evaluation, etc. are studied along with computers, operation research and statistical techniques. Industrial Engineering programs are available as well as advanced work systems analysis and Engineering Administration.

STRUCTURES, MATERIALS & FLUIDS

Contemporary problems in engineering tend to be interdisciplinary in nature and frequently require the understanding and effective application of the principles of structures, engineering materials, fluid and solid mechanics. In the formation of the College, these subjects have been collected and unified into one department—Structures, Materials and Fluids (SMF). In addition to traditional Civil Engineering, Engineering Mechanics, and Materials Science disciplines, the department offers curricular elements to serve the Aerospace and Hydrospace technical fields.

Upper Division Engineering Admission

Students may be admitted to the College of Engineering upon completion of a minimum of 90 quarter hours of college level course work with an average of 2.0 on a 4.0 system ("C" average). All admissions are subject to the regulations of the University and the approval of the academic committee of the College. It is expected that students seeking upper level college admission will have completed their basic studies core requirments (general education requirements for transfer students) and will have made substantial progress in fulfilling their lower division mathematics, science and basic engineering course work requirements in order to complete their professional program or baccalaureate in minimum time.

Engineering Core and Specialization

Both the four-year and the five-year curricula of the College of Engineering are founded on a common core of course work which is required of all students and provides for a broad education as well as a foundation for the work in the several areas of specialization. Students who meet the requirements for upper level admission but who have a deficit in the lower level material may complete this work while registered in the College and will be assigned to a special adviser who will assist them in problems that may exist in arranging their programs and courses. Course work identified as 400 or higher is considered as professional level work and students enrolling for this work must have either been admitted to the upper level or have received permission from the Office of the Dean to attempt this work.

The core and specialization requirements for both the master's degree and the baccalaureate program are as follows:

1. Core Requirements (152 quarter hours minimum)

Basic Studies Core Requirements (35 quarter hours minimum)

Prospective engineering majors must take CBS 101-102, 301-302-303-304, any two of CBS 308-315-316, and nine quarter hours of Behavioral Science, Biological Science, or a foreign language. Freshmen and sophomores will normally fulfill the additional basic studies requirements in Physical Science and Functional Mathematics by completing the mathematics and science core course work required in the engineering program with a grade of "C" or higher in each. Those not meeting these conditions will be expected to complete CBS 208-210 and 109-110 either by examination or by enrolling in these courses. Basic Physical Education requirements must also be completed.

Mathematics and Science Core Requirements (49 quarter hours minimum)

The student must take MTH 302, 303, 304; CHM 211, 212, 213; PHY 301, 302, 303, 304, 305, 306. Students must also take MTH 305, 401, and PHY 323 or appropriate individual substitutions as approved by their upper level advisor.

Engineering Core Requirements (56 quarter hours minimum)

The prospective engineering major must take EGB 101, 102, 203, 231, 232, 311, 312, 313, 321, 322, 325, 337, 340, 341, 342, 343.

Humanities or Social Science Core Requirements (12 quarter hours minimum)

The Student must take nine quarter hours of approved electives at the 200 level or above from these areas, and he must also take the Senior Seminar (CBS 401) required of all degree candidates.

2. FOUR YEAR PROGRAM (Baccalaureate Degree)

The program consists of a minimum of 152 quarter hours of core course material plus 49 quarter hours of specialization approved by the student's upper level adviser. The degree, Bachelor of Science in Engineering, is awarded upon successful completion of the program.

3. FIVE YEAR PROGRAM (Master's Degree)

This program consists of a minimum of 152 quarter hours of core course material plus 94 quarter hours of specialization including a maximum of 18 hours of design or research project. Students are admitted to this progrm early in the beginning of their fourth year of study based on an evaluation by the faculty of their department. Unlike the traditional master's degree which is attempted as a fifth year after completion of the baccalaureate degree, in this program both the fourth and fifth years are open to graduate level course work and additional calendar time is available for design or research projects.

The program leads concurrently to both the Master of Science in Engineering and the Bachelor of Science in Engineering with the specialization phase of the program being individually arranged and involving course work, design, research and/or operational experience. Should the student be unable to complete his full five years, the baccalaureate can be awarded. Either an engineering report or a research thesis is required. See later section relative to master's program for additional information.

Other Requirements for Engineers

HUMANITIES AND SOCIAL SCIENCE REQUIREMENTS

While the engineering undergraduate student is expected to complete certain requirements during his first two years of study which are directed toward the humanities and social sciences, and which are fulfilled by the completion of his basic studies requirements at the University (or general education requirements at other institutions), the University of South Florida expects more of its prospective engineering graduates than this minimum. The engineer must not only be a technically competent individual, he must also be a person who can understand, adjust and contribute to his social environment. The undergraduate engineering program at the University requires, in addition to the general education program, twelve credit hours of study in the humanities and social sciences during the engineering student's junior and senior years.

ENGLISH REQUIREMENT

Students who have been admitted to the college of Engineering may be required to take an examination in order to evaluate their preparedness in the use and understanding of the English language. This examination will be administered by the faculty of the University's English program and students evidencing a deficiency will be required to initate the necessary corrective programs, with the assistance of their advisers. Correction of any deficiency must be effected prior to recommendation of the student for graduation by the faculty of the College.

MATHEMATICS REQUIREMENT

Students who are pursuing an engineering program are expected to acquire a facility for the rapid and accurate solution of problems requiring the use of mathematics. This requirement includes the ability to translate physical situations into mathematical models. Students evidencing a lack of manipulative ability or the ability to apply mathematics will be required to take remedial course work in engineering analysis that is over and above their

regular degree requirements. Faculty of the College who encounter students who are deficient in their mathematical ability will refer such cases to the Office of the Dean.

CONTINUATION REQUIREMENTS

All undergraduate students registered in the College of Engineering are expected to maintain the minimum of 2.0 average ("C" average) for all work attempted while registered in the College. Students who do not maintain this requirement will be declared ineligible for further registration for course work and degree programs in the College unless individually designed continuation programs have been prepared by the student's adviser and approved by the academic committee of the College.

REQUIREMENTS FOR GRADUATION

In addition to the completion of the course work and/or project requirements of the respective programs of the College, students must be recommended for their degrees by the faculty of the College. It is expected that students completing their master's program would have completed their advanced work with a minimum average of 3.0 or "B". The awarding of a baccalaureate degree requires a minimum average of 2.0 or "C" for all work attempted while registered in the College. Students attempting but no completing their professional master's requirments may elect to request the awarding of the bachelor degree.

Engineering Master's Degree Programs

The College of Engineering offers three programs leading to a degree at the master's level. These are the post-baccalaureate Master of Science in Egineering program, Master of Engineering Program, and the Engineering Five-Year Master of Science Program. Each upper level department may elect to award one of these degrees depending upon prior arrangements with the student. Admission to the Master's program is dependent upon a favorable evaluation by the department concerned. Applicants are expected to meet the minimum requirements outlined below and in addition any special requirements specified by the departments and reported to the Dean of the College. Other requirements may be considered.

Post-Baccalaureate Master of Science in Engineering

This graduate program of the College is designed for those students wishing advanced study which is research or design oriented.

ENTRANCE REQUIREMENTS

1. A baccalaureate degree in engineering from an approved institution is required, Degrees in Mathematics, Physics, Chemistry and other fields may be accepted on an individual basis to meet this requirement. In such cases it is probable that remedial work in engineering will be necessary.

2. A minimum total score of 1000 on the verbal and quantitative portions of the Graduate Record Exam is expected.

3. A minimum grade point average of 3.0 out of a possible 4.0 for all work attempted during the last two years of undergraduate work is required.

4. Those who do not meet the regular entrance requirements may attempt a trial program as non-degree seeking students. Up to 12 hours of work attempted on this basis may be accepted into a graduate program upon satisfactory completion. Before attempting such a trial program the student should determine from his departmental adviser a list of courses and performance criteria for his admission.

PROGRAM REQUIREMENTS

1. A minimum of 45 credits of approved course work is required.
2. An overall grade point average of 3.0 is required for all work attempted in the program. No grade below "C" may be accepted in a graduate program. In the event that a student's average drops below 3.0 he will be placed on a probationary status and must obtain a directed program from his adviser approved by the Dean, prior to continuing his course work toward the degree.
3. All students are required to pass a final comprehensive examination which may be written and oral prior to awarding the degree. These examinations are arranged and administered by the student's graduate committee.
4. Students in this program must complete a design or research project on which up to 9 credits may be used to fulfill his degree requirements. The course 699 with the appropriate departmental prefix is to be used for this purpose.
5. If a thesis is submitted it must be in accordance with the Handbook for Graduate Theses and Dissertations, University Graduate Council. For design projects a comprehensive report must be filed with the Office of the Dean of Engineering following where practical the guidelines of the handbook.

The students working on design and research projects must register for a minimum of 3 credits of course 599 or 699 with the appropriate departmental prefix during each quarter he uses the facilities and laboratories of the College whether or not he has accumulated the maximum credit allowed for research or design toward his degree. All students must register for 3 credits of course 698 or 699 with the appropriate departmental prefix during the quarter in which they apply for the master's degree.

Master of Engineering Program

This program is designed primarily to meet the needs of engineers actively engaged in the profession who wish to pursue graduate study at the master's level.

ENTRANCE REQUIREMENTS

Entrance requirements for the Master of Engineering program are the same as those for the post-baccalaureate Master of Science in Engineering program. It is usually expected that those applying to this program will be experienced or actively engaged in the engineering profession.

PROGRAM REQUIREMENTS

1. A minimum of 45 credits of approved course work is required.
2. Students must maintain overall grade point average of 3.0 out of a possible 4.0. No grade below "C" will be accepted in a graduate program. In the event that a student's average falls below 3.0 he will be placed on

probationary status and must obtain a directed program from his advisor and approved by the Dean prior to continuing further course work toward the degree.

3. All students are required to pass a final comprehensive examination which may be written or oral prior to awarding the degree. These examinations are arranged and administered by the student's department.

4. Students in this program must register for 3 credits of course 698 with the appropriate departmental prefix during the quarter in which they apply for the degree. This will be used as preparation for and administration of the final examination. This credit may not be used as part of the course work requirement.

The Engineering Five-Year Master's Degree Program

This program consists of a minimum of 246 credits of course work and results in concurrent awards of the Bachelor of Science and Master of Science in Engineering degrees. Unlike traditional master's programs following the baccalaureate degree, in this program both the fourth and fifth years are open to graduate level study and additional calendar time is available for research or design projects.

ENTRANCE REQUIREMENTS

1. Students who have senior standing (135 credits) with at least 24 credits completed at the University of South Florida in the engineering curriculum may apply for admission to the Five-Year Program.

2. A minimum total score of 1000 on the verbal and quantitative portions of the Graduate Record Examination is expected.

3. Above-average performance in the engineering program is expected.

PROGRAM REQUIREMENTS

1. A minimum of 246 credits of approved course work must be compiled. Of this total 152 credits must comprise the engineering central core with an additional 94 credits of specialization. A maximum of 18 credits may be allowed for design and research.

2. Students admitted to the five-year program are expected to maintain a superior level of academic performance. A 3.0 out of a possible 4.0 grade point average is expected on the courses in the student's graduate course of study. In the event that a student in the Five-Year Program fails to maintain the required academic standards, he will be placed on probation. Failure to comply with the terms of the probation will result in the student being dropped from the program.

3. Students in this program must complete a design or research project for which up to 9 credits of course 699 and up to 9 credits of course 599, with the appropriate departmental prefix, may be used to fulfill their degree requirements.

4. If a thesis is submitted it must be in accordance with the Handbook for Graduate Theses and Dissertations, University Graduate Council. For design projects a comprehensive report must be filed with the office of the Dean of Engineering, following where practical the guidelines of the handbook.

5. All students are required to pass a final comprehensive examination which may be both written and oral prior to awarding the degree. These examinations are arranged and administered by the student's graduate committee.

When a student is working on a design or research project he must register for a minimum of three credits of course 699 or 599 with the appropriate departmental prefix, each quarter he uses the facilities and laboratories of the College whether or not he has accumulated the maximum credit allowed for research and design toward his degree. All students must register for three credits of 698 or 699 during the quarter in which they apply for the master's degree.

Applied Science and Technology

A series of courses and several degree programs are offered by the College of Engineering with are designed for students who do not wish to pursue degree programs in engineering but who wish to obtain a technical background coupled with other interests.

Computer Service Courses

Recognizing that the general purpose digital computer has made significant contributions to the advancement of all elements of the academic community and that it will have an even greater impact in the future, the College of Engineering offers several levels of credit course work, undergraduate and graduate, to serve students of all colleges in order that they may be prepared to meet the computer challenge.

Computer-oriented courses are offered in two broad categories: (1) those courses which are concerned with the operation, organization and programming of computers and computer systems from the viewpoint of examining the fundamental principles involved in computer usage; and (2) those coursses which are concerned with computer applications to a variety of different disciplines, by means of user-oriented-languages such as FORTRAN, PL/1 and COBOL.

In order that the students may derive maximum benefit from the courses, according to their interests, the courses are further divided into two groups: (1) those courses of general interest to a wide variety of disciplines; and (2) those courses of particular interest to students in engineering and the physical sciences.

The service courses available for the non-engineering students include ESC 301, 302, 303, 304, 310, 311, 312, 501, 502 and 503. The courses designed for the engineering and physical science students include EGB 231, 232, EGS 423, 424, 425, 427, 533, 620, 621 and 622.

Bachelor of Engineering Technology

The College of Engineering has been authorized by the Board of Regents to initiate an experimental program leading to the degree, Bachelor of Engineering Technology. This program provides for a two-year (90 quarter hour) educational experience for students who have completed their Associate of Science Certificates in an engineering technological specialty from one of the programs of the State System of junior colleges.

The 90-quarter-hour University program relies entirely upon the course work and technical competency of the junior college to provide the basic information in the particular area of specialization. It is the primary purpose of this program to provide a broad educational base in the understanding of technol-

ogy, management, and the basic studies rather than to attempt to further develop a high degree of specialization. It should be noted by prospective students that this program is not intended to be an engineering degree program, rather, its function is to bridge the gap between the design or research engineer, the technician, and management. Students graduating in this program will have both their University degree and their transcript annotated as to the institution from which their technical training was received as well as their technical specialization as designated by that institution.

This two-year, post-Associate of Science program is comprised of a minimum of 30 quarter hours of Basic Studies, 30 quarter hours of Technology, and 30 quarter hours of Management or non-technical elective course work. Initially, the technical portion of the program will have a strong emphasis in the Computer Science area.

1. ADMISSION

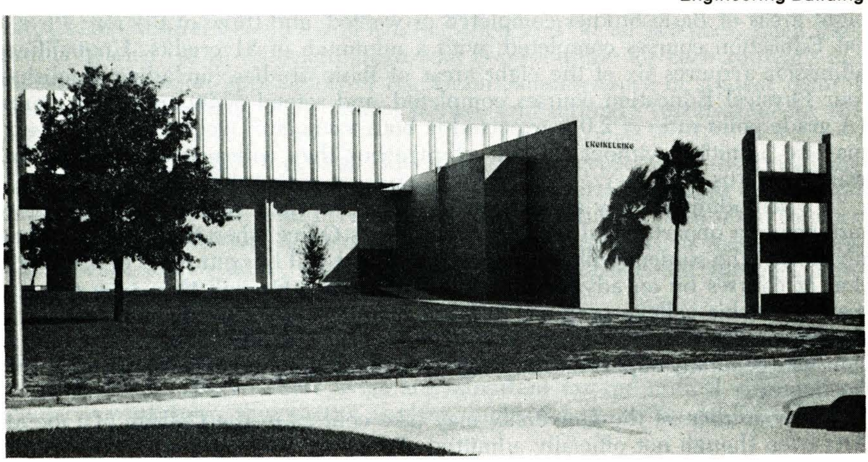
In general, students are expected to have attained a "B" average performance on their technical junior college course work and have at least 300 on their senior high placement test scores. A regular application for admission should be filed with the Office of Admissions and that application should be clearly identified as "Engineering Technology." As this program has unique transfer requirements, a special application must also be submitted and is available from:

Coordinator of Engineering and Technology
USF St. Petersburg Campus
830 First Street South
St. Petersburg, Florida 33701

2. LOCATION

The course work for this program will be operated primarily at the University of South Florida St. Petersburg campus although on occasion certain course work may be offered on the Tampa campus. It should be noted that the St. Petersburg campus does not have dormitory facilities and students must arrange to live off campus. The Center Administrator of the St. Petersburg campus will assist where possible in locating housing.

Engineering Building



College of LIBERAL ARTS

The College of Liberal Arts, as one of the seven colleges of the University, continues the general and liberal education begun in the College of Basic Studies. Here the student may explore further his vocational interests and develop a breadth of knowledge and precision of intellect necessary for responsible leadership in our society.

More specifically, the College seeks:

1. To help students continue the exploration of new subjects affording fresh ideas and talents enriching to life.
2. To enable students to try out several fields as a means of determining the wisest vocational choice.
3. To give sufficient development within the chosen vocational field that the student will be prepared to obtain a job upon graduation or move successfully into a graduate or professional school.
4. To collaborate with the other colleges of the University in providing liberal courses to reinforce required training in those professional schools.
5. To cultivate independent thinking, creative imagination and value commitment in order that students may become constructive leaders in their chosen activities.

Admission to the College

Provisional admission to the College of Liberal Arts is possible with four of the eight areas of Basic Studies completed or waived, and three of the four Physical Education courses completed, with a minimum of 81 credits. Unqualified admission requires six of the eight areas of Basic Studies (including English), four Physical Education courses completed, and a total of 90 credits or more. (A grade point ratio of 2.0 is expected in both instances.) Occasionally students may be admitted without the 2.0 average but they will automatically be on warning status.

Upon admission (by application to the appropriate divisional office in the instance of a departmental major, or the Dean's Office when the major is interdivisional) the student will declare his major and will be counseled in his selection of courses by an adviser from the major field. He will then plan the remainder of his college program to fulfill his educational needs and satisfy requirements for the bachelor of arts degree. The Associate Dean for the division will generally supervise his progress and ultimately certify the student for the degree.

Any student of the University may take courses in the College of Liberal Arts even though not officially admitted. Freshmen and sophomores may wish

to take liberal arts courses in addition to their basic studies program. Similarly students in other colleges or adults in the community will elect liberal arts courses of particular interest.

Graduation Requirements

The College of Liberal Arts currently offers one undergraduate degree: Bachelor of Arts. These requirements are referred to on page 26 of this catalog but are briefly summarized here:

1. 180 credits (plus 4 credits or equivalent in Physical Education) with at least a "C" average (2.0) in work done at the University of South Florida. At least 60 of the 180 credits must be in courses numbered 300 or above.
2. General education requirements of at least six areas fulfilled in the College of Basic Studies (or transferred equivalents), including CBS 101-102 (Freshman English), plus CBS 401 (the Basic Studies Senior Seminar). Proficiency must also be shown in four physical education areas.
3. Completion of a major in a subject or an integrated major involving several subjects. There must be at least a 2.0 average in this major for all USF work. To insure breadth of experience and to preclude undue specialization, a student must earn (or show competence in) a minimum of 120 academic credits outside his discipline of concentration, including at least 24 Liberal Arts credits outside the division of the major. In meeting this 24 credit requirement, work must be distributed with no more than 8 counting from a single department.
4. Work transferred from other schools will not be included in the grade point average computed for graduation. (However, graduation with honors requires a 3.5 average in USF work and also in any previous college work.)
5. A student must earn the last 45 credits in residence at the University of South Florida.
6. Completion of a senior appraisal is required. This is administered free to graduating seniors each quarter.

Organization and Special Features

The College of Liberal Arts is organized into four divisions for the administration of staff, courses, and student records. They are: Fine Arts, Language-Literature, Natural Sciences and Mathematics, and Social Sciences. Each division is headed by an Associate Dean who is responsible for each student's admission to a major, application of regulations, maintenance of student records (including the signing of all official forms), and ultimate certification for the degree.

The College, like the total University, is concerned with the broad development of students' knowledge. Thus, it offers several integrated courses and limits work in any one field. At the same time, the student must learn to work independently. The College emphasizes individual projects in many courses, laboratories, field studies, and the opportunity to earn credit through independent study and examination.

It is important that the student develop basic skills for research and creative scholarship; hence the provision of senior seminars and special courses on research methodology. These skills are important for the critical appraisal of scholarly work even though the student might not go on to graduate study.

There is opportunity from time to time for students to collaborate with their professors on research projects and to render essential intellectual services to the community. Note also the special programs below.

HONORS PROGRAM

The College of Liberal Arts offers a special program for superior students which will enable them to participate in special seminars emphasizing independent work and creativity.

Students participating in the honors program are expected to take honors seminars offered by the College and by their division in addition to the honors courses designated by their major department. Students may volunteer or be nominated by faculty members, after which a screening committee will select those to participate. Further information is available from the office of the Dean of the College of Liberal Arts.

OFF-CAMPUS TERM PROGRAM

The Liberal Arts college offers a program of study whereby all students are encouraged to spend at least one quarter engaged in personal educational pursuits away from the University campus. Students are offered a wide variety of opportunities which include jobs and internships, humanitarian action programs, foreign study-travel, independent research-study, and a variety of "self-initiated" programs designed to meet the individual needs of each student. An ususual amount of flexibility is possible in the planning of each program to ensure maximum relevance to student educational and life interests.

The full resources of the College of Liberal Arts, with special assistance from the International Studies and Cooperative Education programs are available to assist the student in his planning. Detailed information is available in DES 124.

Credit may be earned for independent study related to the program and may also be earned by taking the field course, OCT 401: Community Interaction, described on page 267. For further information, contact the OCT office or your major adviser.

TESTING PROGRAM

As part of its effort to render service to individual students, the College is developing a testing program whereby students may be measured with respect to academic attainment, vocational interest and educational outlook. The scores from these tests will help the student to compare himself with students on this campus and across the nation and make wiser judgments concerning his future plans.

CURRICULA AND PROGRAMS

Opportunities for Concentration

The College of Liberal Arts offers a major in 24 fields as described in the following pages. The student must fulfill all the requirements indicated or receive written permission from the department chairman for any substitution or exemption.

DIVISIONAL MAJORS

In addition to the departmental majors, there are interdisciplinary majors

available in several divisions. These include the programs in American Studies, Pre-Law, International Studies, the Social Science Divisional program, the Natural Science Divisional program, the Afro-American Studies program, the Religious Studies program, and the Bachelor of Independent Studies program.

LIBERAL ARTS MAJOR

The College offers a Liberal Arts major for students who wish a broad program tailored to their particular interests and not falling naturally into one of the departments or divisions. The major may have a pre-professional purpose or it may simply serve a student's desire to become better acquainted with himself and the world.

Persons interested in the Liberal Arts major should see the Dean of the College for admission and assignment to an adviser, and they should write out for approval a statement of the purposes underlying their proposed program and the combination of courses they deem most relevant. This should be done as early as possible and at least before earning 135 credits.

All the College rules for the B.A. degree apply likewise to this major: 180 credits with at least a C average, Basic Studies requirements fulfilled, at least 60 credits at the upper level (300 and above) and 24 Liberal Arts credits outside the division of greatest concentration. There must be at least 20 credits with a C average in one department to assure some anchorage in one field.

College-Wide Programs

AFRO-AMERICAN STUDIES

The major in Afro-American Studies seeks to extend knowledge of the Black experience as seen from the perspective of those who are a part of it, to provide instruction and facilities for specialized training and research into the various aspects of that experience, and to help realize the Afro-American's quest for identity with honor. The program provides an interdisciplinary focus which transcends departmental divisions. At the same time, the program recognizes the need for all people to acquire the intellectual tools and skills that are prerequisite for the building of social consciousness and creative lives.

The major consists of 56 hours, 28 of which must come from the core (AFA 130, 261-262, 302, 410, 481) and the remainder from the other three areas of the program: African studies, political and social issues, and humanistic studies. A close contact with the Black community of Tampa is an integral part of the program and each student is expected to participate fully in community activities.

It is required that each student pursuing this major will devote at least four hours to AFA 481 (Research and Field Studies) and present a senior paper to the faculty of Afro-American Studies on this work.

Each student's program must be planned with the Afro-American Studies advisor who may make appropriate substitutions when he deems these educationally advisable. Students desiring to enter this program should contact the Coordinator of Afro-American Studies for a full listing of courses offered.

LEISURE STUDIES

The Center for Studies of Leisure explores the functions of lesiure as a major manifestation of technology, particularly as related to changing social institutions and values. Its program is virtually unique among the universities

of America and is developed through field research, conferences, workshops, consultations, correspondence, lectures, publications, and seminars.

While its basis for field research is the West Central area of Florida, the Center has sponsored two major international conferences on campus and has participated in several conferences overseas working with other leaders in the field. Present research projects include studies in the arts, public recreation, military retirement, and the use of libraries. A newsletter is published several times a year.

In cooperation with other departments of the College, the Center offers courses to develop understanding and leadership in the field of leisure activity and plans are underway for instituting a graduate program in the field. For further information, consult with the director of the program.

BACHELOR OF INDEPENDENT STUDIES

The College offers a BIS Degree to adults 25 years of age or over who are seeking a liberal education but who are unable to attend regularly scheduled courses. The program is offered in collaboration with the Center for Continuing Education and is described in detail under *Academic Programs* (page 54).

Through this program, it is possible to explore the most significant avenues of thought in the Natural Sciences, the Social Sciences, and the Humanities, and their interaction. Each student does extensive reading under the guidance of a faculty adviser and reports to the campus periodically for seminars.

Division of Fine Arts

The Division of Fine Arts serves the three-fold purpose of providing courses of study, theatres of practice, and programs of events for the University family, the surrounding community and the citizens of the state of Florida.

Its prime objectives are: (1) to provide a broad but thorough training for those highly talented in the fine arts, (2) to offer guidance and training for those preparing for teaching, and (3) to provide curricular studies and extracurricular activities for general University students.

The division offers courses in art, dance, music, and theatre. Special programs designed for the preparation of public school teachers include (1) art, grades 1-12; (2) general vocal music, grades 1-12; and (3) general-instrumental music, grades 1-12.

DANCE

The dance curriculum is designed for students interested in dance as an art form. Their objectives may be to continue their education in graduate school, to teach in a college or a private school, or to pursue a career as a performer and/or choreographer.

Dance majors are required to take DAN 201, 202, 203, 301 (six credits), 302 (six credits), 303, 311 (three credits), 313, 401 (nine credits), 403, 413, 501 (nine credits), 503, 513, for a total of 60 hours.

Senior dance majors are required to choreograph and perform in a senior dance program.

For advanced placement, prospective students must contact the dance office (TAR 233) to arrange for an audition prior to registration.

Additionally, 15 credits are required consisting of: 9 credits in Visual Arts, Music and Theatre and 3 credits each of FNA 543 and FNA 553. Three to six

credits of FNA 443 and/or 3, 6 or 9 credits of FNA 453 may be substitutued for the Fine Arts departmental 9-credit requirement. Please refer to page 105 for additional requirements.

MUSIC ARTS

The music arts curriculum is designed for those gifted in performance on an approved instrument or in voice as preparation for graduate study to qualify as performing artists, college- or studio-teachers.

Requirements for the B.A. Degree:

A total of 60 quarter hours is required, distributed as follows: 24 in Musical Styles (MUS 201, 202, 203, 301, 302, 303, 401, 402, 403), 33 in Performance (MUS 204, 304, 404, 504— a maximum of three quarters at each level counted toward graduation), and three in Studio Teaching (MUS 505). Additionally required are 15 quarter hours consisting of: nine in ART, DAN, and TAR courses and three in each of FNA 543 and FNA 553. Three to six credits in FNA 433 and/or three, six, or nine credits in FNA 453 may be substituted for the nine-credit Fine Arts requirement in ART, DAN, and TAR courses. Please refer to page 105 for other general graduation requirements.

All new registrants are required to take placement examinations in musical styles (theory and history) and in performance. Students must obtain the dates for these examinations from the music office (FAH 204); completion of the examinations is required before registration in music courses can be permitted.

All students seeking a degree in music are required (1) to complete successfully the secondary piano requirement as defined by the music faculty, (2) to attend a prescribed number of representative on-campus music events (i.e. student recitals, Music Forum events, faculty recitals, and Artist Series concerts) as well as significant off-campus musical events, and (3) to present a faculty-approved public recital before graduation.

Requirements for the M.M. Degree:

General requirements for graduate work are given on page 151. In addition, the applicant will need to satisfy the following requirements in music before intitial registration: (1) Performance audition and (2) placement examinations in musicial styles (theory and history) and piano.

The specific program for each student will vary according to his needs and interests. Each program must be approved by the student's adviser in conformance with the guidelines established by the Graduate Music Committee made up of music arts and music education faculty members.

A minimum of 54 credits is required, and the student must be registered as a full-time student for a minimum of one quarter. The typical program for a performance major consists of: 16 credits in 600-level performance courses, a three-credit Recital, four credits in Graduate Ensemble, two credits in Graduate Seminar, and 29 credits in elective courses to be selected with the student's assigned advisor.

Programs for Teacher Education:

For the bachelor of arts degree for those preparing to become public school music teachers, see Education. For the master of arts degree for those preparing to become public school music teachers, see page 85.

THEATRE ARTS

All students will take TAR 203, 211, 221, 252, 339, 443, 471, 501 and

502, plus any two of the Theatre Literature courses. Depending upon choice of concentration, additional requirements are—performance majors: TAR 212, 311, 313, 411, 413, 511, 515, plus 6 hours elected in the discipline; technical majors: TAR 322, 429, 421, 423, 425, 529, choice of one of TAR 422, 424, 426, plus 6 hours elected in the discipline; playwriting majors: TAR 212, 444, 515, 543, 544, plus one additional Theatre Literature course and one beginning design course, with 6 hours elected in the discipline—for a total of 60 hours. Theory majors: TAR 311, 313, one beginning design course, four remaining Theatre Literature courses; for a total of 54 hours, plus an additional 12 hours of English electives selected from ENG 411, 426, 503, 519, 520, 559.

Additionally, 15 credits are required consisting of: 9 credits in Dance, Music and Visual Arts and 3 credits each of FNA 543 and FNA 553. Three to 6 credits of FNA 443 and/or 3, 6 or 9 credits of FNA 453 may be substituted for the Fine Arts departmental 9-credit requirement.

Please refer to page 105 for graduation requirements.

VISUAL ARTS

Requirements for the B.A. Degree:

The Visual Arts curriculum is designed for students interested in continuing their education in graduate or technical schools with the objective of college teaching, gallery or museum work, fine or commercial studio work.

The Visual Arts student may elect to emphasize painting, sculpture, graphics, ceramics, photography, cinematography, drawing or art history by selecting the appropriate sequence of courses.

A typical sequence would be: ART 201, 202, 301, 302, 401, 402, 411, 421, 431, 441, 461 (ART 501 may be substituted for one of the 400-level studio courses with the exception of ART 401 and ART 402); 12 credits in art history; 15 credits of the area to be emphasized: painting, sculpture, graphics, ceramics, photography, cinematography or drawing. Additionally, 15 credits are required consisting of: 9 credits in Dance, Music and Theatre and 3 credits each of FNA 543 and FNA 553. Three to 6 credits of FNA 443 and/or 3, 6 or 9 credits of FNA 453 may be substituted for the Fine Arts departmental 9-credit requirement. A typical sequence for the art history major would be ART 201, 202, 301, 302, 401, 402 and one advanced studio course; 39 credits to be divided as follows: 6 courses from the ART 470-477 sequence; 6 courses at the 500-level (ART 570 and/or ART 581); 3 hours in ART 573. The Department also requires of its art history majors a foreign language reading proficiency. German or French are especially recommended. Please refer to page 105 for additional graduation requirements.

All Art majors are required to present a portfolio of their work prior to entrance into upper level. The University reserves the right to retain selected student work done while registered at the University.

The requirements for the bachelor's degree in Art Education are listed under the College of Education.

Requirements for the M.F.A. Degree:

General requirements for graduate work are given on pages 151-53. It is additionally required that applicants submit examples of their work to the Department of Visual Arts before admission to the program.

A minimum of 72 credits is required. The typical program consists of 18 hours in *one* of the studio areas of painting, sculpture, graphics, ceramics, photography or cinematography, 15 in one or more of the remaining areas, 12 in the history of art and 9 each in research, thesis and a minor.

As part of the thesis requirement, the student must prepare and stage an exhibition of his thesis work in the last quarter prior to graduation.

The student must be registered as a full time graduate student for two quarters.

The requirements for the M.A. Degree in Art Education are listed under the College of Education.

Division of Language and Literature

The Division of Language and Literature offers courses in American Studies (AMS), Classics and Ancient Studies (CLS), English (ENG), Modern Languages (FRE, GER, ITA, POR, ROM, RUS and SPA), Linguistics (LIN), Mass Communications (COM), Philosophy (PHI), Religious Studies (REL), Speech (SPE), and Interdisciplinary Language-Literature subjects (LLI).

Majors are available in American Studies, Classics and Ancient Studies, English, French, German, Italian, Mass Communications, Russian, Spanish, Philosophy, Religious Studies, and Speech.

Six Master of Arts programs are also available: English, French, Linguistics, Philosophy, Spanish and Speech.

AMERICAN STUDIES

The American Studies major is designed for those students interested in studying the relationships among the important elements which shape American civilization. The American idea sequence, CBS 301, 302, 303, and 304 (or the counterpart in transfer work) is a prerequisite (or can be taken concurrently) for admission to the major.

To complete requirements for a major, a student must take (1) the following courses in American Studies: AMS 301, AMS 311-312-313, and AMS 491-492-493, (2) three courses from the following: ENG 305, HTY 411, HTY 421, HUM 535 or PHI 413; and (3) twenty-one hours of related elective courses, no more than nine hours in any one area, chosen in consultation with and approved by his major adviser from among the following list of courses: AMS 383, AMS 483, ANT 303, COM 301, ENG 306, ENG 307, ENG 425, ENG 426, ENG 517, ENG 527, ENG 528, EDF 575, HTY 301, HTY 302, HTY 315, HTY 316, HTY 409, HTY 410, HTY 412, HTY 422, HUM 536, HUM 537, PHI 413, POL 201, POL 431, POL 432, POL 441, POL 445, POL 455, POL 463, POL 540, SOC 201, SOC 261, SOC 341, SOC 371, SOC 563, SPE 345 and SSI 503. Descriptions of these courses may be found under the appropriate departmental course descriptions.

Each student's program must be planned with the American Studies adviser, who may make appropriate substitutions when new related courses are added to present University offerings and he deems such substitutions educationally advisable.

CLASSICS AND ANCIENT STUDIES

The Department offers a major in Classics and Ancient Studies. Requirements for the B.A. degree in Classics and Ancient Studies are: 48 quarter credits consisting of a core sequence of 22 credits plus one of three alternatives of 26 credits providing a choice of emphasis. The core sequence consists of CLS 301, 302, 303, 411, 412, 413, and 529. The alternative sequences are:

(a)—emphasis on Latin: CLS 321, 371, 401, 402, 403, 517, and 571;

(b)—emphasis on Latin and Greek: CLS 321, 331, 332, 333, 371, 527, 571;
(c)—broad scope with Latin, Greek, and Hebrew: CLS, 331, 332, 333, 341, 342, 343, 527, and 583 (Biblical Civilization).

Individual adaptations within the 26 variable credits to meet special student needs are possible with the consent of the Department Chairman.

Electives (where applicable) are: CLS 401-402-403; 331-332-333; 321, 371, 517, 527, 571; ART 313, 323; HUM 431-432; PHI 333, 415; REL 350.

For a combination major of Latin with a modern foreign language see page 114 under combined majors, MODERN LANGUAGES.

ENGLISH

Requirements for the B.A. Degree:

A major in English requires a sequence of courses in British and American literature. Advanced courses focus on the works of particular authors, genres, or groups of related authors. All English courses attempt to teach students how to think critically about literature and to fit the works studied into the economic, social, political, scientific, and religious contexts.

To accumulate the required 48 credits, all English majors must take the following seven courses: ENG 201, ENG 202, ENG 203, ENG 305, ENG 306, ENG 307, and ENG 411. In addition they must elect one of the following: ENG 319, ENG 321, ENG 325, ENG 335, ENG 336, ENG 337, ENG 437, ENG 459 and ENG 511; two of the following: ENG 429, ENG 500, ENG 501, ENG 502, ENG 503, ENG 504, ENG 505, ENG 506, ENG 507, ENG 508, ENG 515, ENG 519, ENG 520, ENG 521, and ENG 559 (a student cannot use both ENG 519 and ENG 520 in this group); and two of the following: ENG 415, ENG 416, ENG 425, ENG 426, ENG 430, ENG 513, ENG 517, ENG 518, ENG 523, ENG 527, ENG 528, ENG 531, and ENG 535.

Persons wishing to take English courses not on this list, or more than the specified number of courses in the above areas, may include them in the 12 hours allowed under the 60-hour maximum permitted in one department.

For the description of the combined major in English and Linguistics, refer to the Linguistics section of the catalog on page 115.

Requirements for the M.A. Degree:

Requirements for Admission. In addition to the general requirements of the University, an applicant must have an academic average of B in all English courses above freshman English, a minimum of 28 hours of literature in English above the freshman level, and a score of at least 600 on the Verbal Aptitude Test of the Graduate Record Examination and a total GRE score of at least 1000. All applications must be approved by the Graduate Committee of the Department of English.

Course Work. A master of arts degree in English requires 45 hours of course work from the following list of English courses: ENG 691; two ENG 683 courses; ENG 623 (or the bibliography test); ENG 531 (unless the student has taken a literary criticism course as an undergraduate); and any one of the following courses—ENG 515, ENG 517, ENG 518, ENG 535, LIN 540, or LIN 541 (unless the student has taken a linguistics or English language course as an undergraduate). All courses to be counted for the M.A. must be at the 600 level, except ENG 531 and a 500-level linguistics or language course. Each student is required to write a directed critical or analytical paper carrying one hour of credit (ENG 681). Students may substitute up to eight hours of courses acceptable for graduate credit in related areas, subject to approval by the Graduate Committee of the Department of English. A stu-

dent may not count toward his degree more than eight hours of ENG 683 or more than four hours of ENG 691.

Other Requirements. All candidates for a master's degree will be required to demonstrate reading proficiency in one of the following foreign languages: Latin, Greek, French, German, Spanish, Italian, or Russian. They must also pass a comprehensive examination, both oral and written. Specific information about these requirements is available from the Graduate Committee of the Department of English.

Requirements for the M.A. Degree in Junior College Teaching:

Requirements for Admission. See M.A. program above.

Course Work. A joint program with the College of Education, designed to provide competence in those areas of English most often needed by the junior college teacher: composition, language, literature in English, and world literature in translation. Courses in English: ENG 583, Advanced Composition for Teachers; ENG 601, Problems in College English Instruction: Composition; any one of the following courses the student has not taken previously—ENG 517, ENG 535, LIN 540, LIN 541; one course in English literature 1500-1660; one course in English literature 1660-1780; one course in English literature 1780-1890; one course in American literature; one course in twentieth-century literature; ENG 683, Selected Topics in English Studies (world literature). All literature courses must be taken at the 600 level. Courses in the College of Education: EDR 509, EDH 651, EDH 653, and EDC 691 (internship if required).

Foreign language requirements. None.

Other requirements. Each student must pass a comprehensive examination, oral and written. Specific information about this requirement is available from the Graduate Committee of the Department of English.

MODERN LANGUAGES

Instruction is provided in French, German, Italian, Portuguese, Romance Philology, Russian, and Spanish. Instruction in less commonly-taught languages such as Hindi and Japanese, and linguistics, language structure and development, is also available.

These programs are designed to meet the needs of students who desire competency in a language and an expanded understanding of its culture and literature. They are of particular interest to students who wish to teach languages, those who plan to further their studies in graduate school, and those who seek careers in various types of foreign employment.

Major programs are offered in French, German, Italian, Latin, Russian, and Spanish, and in combinations of any two of these.

Requirements for the B.A. Degree:

Modern language majors must complete at least 45 credits in the chosen language beyond the intermediate language courses. Among these 45 credits must be the following:

FRENCH: FRE 203, 301, 303, 305, 401, 403, 405, 406, and 516.
GERMAN: GER 203, 301, 303, 305, 401, 405, 406, and 516.
ITALIAN: ITA 203, 301, 303, 305, 401, 405, and 406.
RUSSIAN: RUS 203, 301, 303, 305, 401, 405, and 406.
SPANISH: SPA 203, 301, 303, 305, 401, 403, 405, 406, 516, and 561 or 562.

A native speaker must substitute another course for the first conversation course (203). Courses in translation may not be applied to the major.

Combined Majors

Combined majors are offered in any two modern languages or in Latin and a modern language, or in languages and linguistics. For a major in two modern languages, a student must take the courses required for the major in his first language and 301, 303, 305 and 401 in his second language. Students majoring in Latin and a modern language must take CLS 301, 302, 303, 371, 401-402-403, 517 and 571; and courses numbered 301, 303, 305, 401, 405 and 406 in the modern language. For a description of the combined major in Foreign Languages and Linguistics, refer to page 116.

Requirements for the M.A. Degree in French:

General requirements for graduate work are given on pages 151-53.

For admission to the M.A. program in French, a student must have previously taken the following French courses or their equivalent: FRE 303, 401, 403, 405, and 406.

For a master's degree in French, the following are required:

1) 45 credit hours in French courses, or:
   31-35 hours in French courses, plus 10-14 hours graduate-level work in a second field approved by the student's supervisory committee. Of the required work in French, FRE 601 and 689 and at least 12 additional hours must be at the 600 level.
2) Reading knowledge of a second foreign language approved by the student's supervisory committee.
3) A written comprehensive examination, based upon a reading list provided by the department, on French language and literature. A portion of the comprehensive examination must be written in French.
4) A thesis or thesis-type paper, written under the direction of an advisor assigned by the departmental chairman, and approved by the student's supervisory committee.

Requirements for the M.A. Degree in Spanish:

General requirements for graduate work are given on pages 151-53.

For admission to the M.A. program in Spanish, a student must have previously taken the following Spanish courses or their equivalent: SPA 303, 401, 403, 405, and 406.

For a master's degree in Spanish, the following are required:

1) 45 credit hours in Spanish courses, or:
   31-35 hours in Spanish courses, plus 10-14 hours graduate-level work in a second field approved by the student's supervisory committee. Of the required work in Spanish, SPA 601 and 689 and at least 12 additional hours must be at the 600 level.
2) Reading knowledge of a second foreign language approved by the student's supervisory committee.
3) A written comprehensive examination, based upon a reading list provided by the department, on Spanish and Spanish American language and literature. A portion of the comprehensive examination must be written in Spanish.
4) A thesis or thesis-type paper, written under the direction of an advisor assigned by the departmental chairman, and approved by the student's supervisory committee.

INTERDISCIPLINARY LANGUAGE-LITERATURE

While some departments give credit toward a major for some interdisciplin-

ary language literature courses, all LLI courses are designed as electives for students wishing to extend their understanding of a particular field in the Division and of its relationships to other fields. The courses are generally of two types:

I. Those in the history of ideas.
   LLI 301, 302 Main Currents of Western Thought I & II
   LLI 305 The Idea of Progress
   LLI 306 The Idea of Utopia
   LLI 315 The Idea of Freedom
   LLI 401 Three Central Ideas in Western Culture: Hierarchy, Mechanism and Organism
   LLI 402 Dominant Ideas in the 20th Century
   LLI 411 The Romantic Idea of the Self

II. Those relating a field outside the Division to work in it.
   LLI 321 Literature and the Occult
   LLI 383, 483, 583 Selected Topics
   (courses relating the film to literature and philosophy formerly under LLI are now under Mass Communications)

The courses in Group I combine literature, philosophy and criticism to provide broad perspectives. Those in Group II are more specialized, but still combine ideas in at least two specific fields.

LINGUISTICS

Linguistics is primarily an upper-level and graduate discipline with strong interdisciplinary concerns. Undergraduates interested in Linguistics must elect one of the three combined majors described below. Graduate students may effect complete specialization in the program leading to the M.A. degree in Linguistics.

Students interested in Linguistics are urged to acquire a broad language background in their undergraduate programs, especially if they intend graduate study. A classical language (Latin, Greek, Hebrew) or a non-Western language (such as Japanese and Hindi, which are offered in the Lingustics Program) are strongly recommended in addition to any modern European languages the student may have studied. Also, prospective graduate students are advised to obtain good foundations in Mathematics (MTH 309 and PHI 509 are especially recommended), in computer programming, statistics, and experimental design and methodology. All programs for any of the three majors below must be approved by an adviser from *both* of the disciplines concerned.

Requirements for B.A. Degrees:

1. *Anthropology-Linguistics Major.* This sequence is designed for students who are particularly interested in the role of language in human behavior and cultural development. It requires the following eight courses in Anthropology: ANT 201, ANT 202, ANT 203, ANT 302, ANT 311, ANT 313, ANT 325, and ANT 491; six Linguistics courses: LIN 301, LIN 530, LIN 551, and SPE 503, and *any two* courses from the following group: LIN 511, LIN 540, LIN 541, LIN 543, CLS 571, ENG 518, PHI 531, PSY 441 or SSI 311.

2. *English-Linguistics Major.* This sequence is designed for students who are especially interested in the role of linguistic studies in problems of English, grammar, composition, and literary structure and style. It requires six courses from the following literature group, of which ENG 201 and ENG 501 are required: ENG 201, ENG 202, ENG 203, ENG 306, ENG 307, ENG 411, ENG

501, and ENG 507; four from the language group, but *not both* ENG 517 and ENG 535: ENG 321, ENG 515, ENG 517, ENG 518, and ENG 535; and four of the following, of which LIN 540, and LIN 551 are required: LIN 511, LIN 530, LIN 540, LIN 541, LIN 543, LIN 551, CLS 571, PHI 531, SPE 503, and SPE 511.

3. *Foreign Language-Linguistics Major.* This sequence is designed for students who are especially interested in the role of linguistic studies in problems of grammar, composition, and literary structure and style. The student must elect one of the following language sequences:

FRENCH: FRE 301, 303, 305, 401, 403, 405, 406, and 516.
GERMAN: GER 301, 303, 305, 401, 405, 406, 513, and 516.
ITALIAN: ITA 301, 303, 305, 401, 405, and 406.
RUSSIAN: RUS 301, 303, 305, 401, 405, 406, 515, and 516.
SPANISH: SPA 301, 303, 305, 401, 403, 405, 406, and 516.

French, Italian and Spanish students must also take either ROM 517, or CLS 517. In the Linguistics sequence of the major, students must take LIN 301, LIN 551, CLS 571, and any two of the following: LIN 511, LIN 530, LIN 540, LIN 541, LIN 543, ENG 518, PHI 531, SPE 503, and SPE 511.

Students wishing to combine two modern foreign languages and linguistics must take one of the above sequences as the first language and the sequence 301, 303, 401, 403 (prefix determined by language selected), plus any phonetics, stylistics, or history of the language courses offered for that language. Students who intend to do graduate work are strongly urged to consider Latin or Classicial Greek as a second language. Sequences for these languages are listed under Classics and Ancient Studies. Students may also elect Japanese or Hindi, taught in the LIN 583 sequence, as a second language; six quarters satisfies the requirements for one of these. The Linguistics course requirements remain the same as for a single foreign language.

Requirements for the M.A. Degree:

Requirements for Admission. Undergraduate majors generally regarded as appropriate foundations for graduate study in linguistics are: anthropology, English, a foreign language, linguistics, and speech; however, a student with a baccalaureate degree in any discipline is eligible. In addition to the general requirements of the University, an applicant must have an academic average of B in all of his major courses and a combined score of 1000 on the aptitude section of the Graduate Record Examination (a minimum of 500 of the total must be earned on the verbal portion). If a student's undergraduate preparation has not included suitable introductory courses in general or descriptive linguistics and phonetics, he will be required to remedy the deficiencies by taking LIN 301 and SPE 503 (credit for the former may not be counted toward the degree requirements). The undergraduate study of one or more foreign languages, especially a non-Western language, is strongly encouraged.

Course Work. An M.A. degree in linguistics requires a minimum of 48 hours of course work of which LIN 551, LIN 601, LIN 602, LIN 611, LIN 612, and 8 hours of the thesis course LIN 699 are required. The remainder of the course work may be taken in linguistics courses (or closely related courses) in other departments, notably Anthropology, Classics and Ancient Studies, Education, English, Modern Languages, Philosophy, Psychology, Sociology, and Speech. The student may elect to take all of these remaining courses in one such department, or he may take them in several departments, but each program must be planned with and approved by the Linguistics adviser, who

may make appropriate substitutions when he deems these educationally advisable.

Foreign Language Requirement. The foreign language requirement is regarded as an integral part of the M.A. Program in Linguistics, and students must demonstrate a proficiency in one foreign language for the degree. However, students who intend to concentrate in historical-comparative linguistics will be expected to bring to the program an extensive undergraduate background in foreign languages, or else to remedy the deficiency after admission. Students who intend to concentrate their work in general-descriptive linguistics or other sub-specialties will have wide latitude in their choice of a foreign language to satisfy the requirement, and the study of a non-Western language is strongly encouraged. The choice of a language and the method for satisfying the proficiency requirement (e.g., course work, examination, etc.) will be determined on an individual basis by the student and his thesis committee.

Other Requirements. The student will present an acceptable thesis in the field of linguistic studies (8 hours credit are granted for this project through registration for LIN 699; see above under course work requirements). In addition, the student must pass a comprehensive examination in linguistics, both oral and written. If a student has elected to take as many as eight hours of course work in a department other than Linguistics in his program, then his examination will cover material from those courses also.

The following courses taught in other departments are also linguistics courses, or are closely related to linguistics: ANT 313, CLS 371, CLS 517, CLS 571, EDT 531, EDT 631, EDX 649, ENG 515, ENG 517, ENG 518,ENG 535, ENG 616, FRE 403, FRE 601, GER 513, GER 514, GER 601, PHI 531, PSY 441, ROM 517, ROM 518, RUS 515, RUS 516, SPA 403, SPA 601, SPE 503, SPE 511, SPE 603, SPE 611, SPE 612, SAI 623, and SSI 311. Descriptions of these courses may be found under the appropriate departmental headings.

MASS COMMUNICATIONS

(1) Mass Communications (journalism) offers a number of courses with a general liberal arts approach, from which any student may elect those suited to his interests or needs. Majors in Mass Communications will find, in addition, more specialized courses in advertising, film, magazine, news-editorial, and public relations areas. The following general courses are designed to introduce students to a broad perspective and understanding of the processes of communication and its effects upon society and the individual:

COM 300 Introduction to Mass Communications(3)
COM 301 The Popular Arts in America (4)
COM 351 Literature and the Film (3)
COM 403 History and Principles of Communications Law (4)
COM 451-452 Social History of the Film (4, 4)
COM 453 The Documentary Film (4)
COM 500 Theory of Mass Communications

(2) Majors seeking careers in the mass media will be directed to the various daily and weekly newspapers, radio and television stations, advertising agencies, magazines and public relations firms with which the department maintains close contact. Summer internships and part-time work in the media are available to qualified students.

Requirements for the B.A. Degree:

The necessary techniques that a major in Mass Communications will receive

are based on a knowledge of certain kinds of human behavior, especially as it relates to theory, principles, and practice of mass communications. Required courses and recommended electives offer students the widest possible freedom to explore their own areas of interest within a framework of the liberal arts. Majors will choose about 60 credits of electives; required are 22 credits in a Mass Communications "core," 13 credits in supporting courses, and 24 to 26 credits in a sequence, as follows:

Required Core Courses:
COM 300 Introduction to Mass Communications (3)
COM 330 Beginning Reporting (4)
COM 351 Literature & the Film (3)
COM 403 History and Principles of Communications Law (4)
COM 491 Senior Seminar: Intercommunications (4)
COM 500 Theory of Mass Communication (4)

Required Supporting Courses:
POL 201 American National Government (4)
POL 203 State-Local Government (4)
SPE 241 Introduction to Broadcasting (5)

ONE OF THE FOLLOWING FIVE SEQUENCES:

Advertising (25 q.h.):
MKT 301 Basic Marketing (5)
MKT 312 Principles of Advertising & Sales Promotion (3)
COM 313 Advertising Copywriting and Layout (4)
COM 341 Principles of Public Relations (4)
COM 375 Typography I (4)
MKT 413 Consumer Behavior (3)

Film (24 q.h.):
COM 345-355-356 The Film as Mass Communications I, II, III (12)
COM 451 Social History of Film to 1945 (4)
COM 452 Social History of Film to the Present (4)
COM 453 The Documentary Film (4) *or* COM 454 Film Criticism (4)

Magazine (26 q.h):
COM 321 Magazine Article & Feature Writing (4)
ENG 321 Advanced Writing (4), *or* ENG 235 Advanced Exposition Writing (4)
COM 325 Magazine Editing (4)
COM 371 Photojournalism I (4)
COM 375 Typography I (4)
COM 425 Magazine Planning and Production (4)

News-Editorial (26 q.h.)
COM 331 Advanced Reporting (4)
COM 338 Newspaper Management (2)
COM 371 Photojournalism I (4)
COM 375 Typography I (4)
COM 433-434 News Editing I, II (8)
COM 539 Seminar: News-Editorial Problems (2)

Public Relations (26 q.h.):
COM 341 Principles of Public Relations (4)
COM 441 Public Relations Writing (4)
COM 541 Public Information (4)
12 hours of related electives

SECONDARY EDUCATION MAJORS

English-Education majors, or those who wish certification in Journalism under the English-Journalism-Education program, are referred to the College of Education section of this Catalog.

Descriptions of these courses may be found under the appropriate departmental course descriptions.

Each student's program must be planned with the Mass Communications adviser who may make appropriate substitutions when he deems it educationally advisable.

PHILOSOPHY

The philosophy program includes five major areas of study: (1) logic and scientific method, (2) history of philosophy, (3) theory of knowledge, (4) theory of reality, and (5) theory of value. Majors in philosophy must complete at least

45 credit hours in the program, with the following courses required: (1) PHI 303; (2) PHI 333, 334, and 335. In addition to (1) and (2) we urge all majors who are going to graduate school in philosophy to take at least one course in all areas. At least nine credits must be taken above the 500 level, including two seminars. No more than two of PHI 301, 311, 317 will be counted toward the major. Credit toward a major in philosophy will be extended for LLI 306 or 315. Students may substitute PHI 583 (selected topics) for any requirement above, with approval of the Department Chairman.

The Department of Philosophy offers the philosophy major the opportunity of participating in the Philosophy Department Honors Program. A student may graduate with departmental honors if he: (1) is accepted by the Department as an honors candidate, (2) completes 4 honors courses with a grade point average of 3.5 or better, and (3) completes the courses necessary for a philosophy major with a grade point average of 3.2 or better. The 4 honors courses will consist of 3 upper-level courses in which the student attends regular class sessions but makes arrangements with the instructor for additional work. Honors courses carry 1 additional hour credit. Instead of enrolling in the course under the usual number, the student will enroll in, e.g., PHI 383-05, 483-05, or 583-05. The fourth honors course will be a research project, and the student will enroll for the project under PHI 583-03.

RELIGIOUS STUDIES

The major in religious studies is offered to those students who are interested in the vital role of religious thought and practice in shaping the cultural patterns of various peoples and in its relationship to the merging patterns of contemporary life. This major might be elected out of personal interest in religion, or as the undergraduate preliminary for a master and doctoral program in religious studies, or as a valuable background for semi-professional and professional work in religion; e.g., teaching in public schools, junior colleges, universities, the religious education departments of churches and synagogues.

The program is designed to give the student a substantial background for further study in the field, and at the same time permit considerable freedom for study in the fields which are related to religion; e.g., sociology, anthropology, literature, humanities, philosophy, classics, history, etc.

There are three major divisions to the program, each of which answers one of the following questions: (1) What is religious thought? (2) How can it be analyzed? (3) What are its applications?

A total of 49 quarter hours are required for the major, divided as follows:

I *The Basic Documents Underlying Religious Thought* (17 quarter hours required): REL 300, REL 310, REL 315, REL 325, REL 327, REL 328, REL 350, REL 351.

II. *Analysis of Religious Thought* (16 quarter hours required): REL 300, REL 329, REL 360, REL 370, REL 491, PHI 411, SOC 373 ANT 471 (Primitive Religion).

III. *Applications of Religious Thought* (16 quarter hours required): ENG 319, ENG 507, ENG 511, ENG 583 (Religious Literature), CLS 321, CLS 341, 342, 343, LLI 301, 302, PHI 321, PHI 333, PHI 521, ART 472, HUM 427, HUM 428, HUM 541, HUM 542, HUM 543, HTY 425, HTY 426, HTY 432, HTY 591 (religious history).

Descriptions of these courses may be found under the appropriate departmental course descriptions.

Each student's program must be planned with the Religious Studies

adviser, who may make appropriate substitutions when he deems it educationally advisable.

SPEECH

The Speech curriculum provides courses for all students interested in increasing their understanding and skills of oral communication, and offers major programs in general speech, rhetoric and public address, and broadcasting. In addition, two combination major programs are available: an English-Speech program, designed primarily, though not exclusively, for those preparing to teach in the secondary schools; and a Speech-Theatre Arts program.

A major in Speech requires a minimum of 45 credits; the combination English-Speech program requires 67 credits in English and Speech, and five credits in Theatre Arts; and the joint Speech-Theatre Arts program requires 61 credits.

Speech 201, 203, 491, and 492 are required of all majors.

General Speech sequence: SPE 201, 203, 321, 363, 491, 492 and 20 credits of Speech electives.

Rhetoric and Public Address sequence: SPE 201, 203, 363, 491, 492, 565, and 20 credits of Speech electives, 15 of which must be in rhetoric and public address and discussion.

Broadcasting sequence: SPE 201, 203, 241, 321, 491, 492, and 20 credits of Speech electives, 15 of which must be in broadcasting.

English-Speech sequence: SPE 201, 203, 321, either 361 or 365, 491, 492, and ten credits of Speech electives; ENG 201, 202, and 203; either 305 or 306; 307, 321, 411, and 517; and TAR 303.

Speech-Theatre Arts sequence: SPE 201, 203, 321, 491, 492, 521, and one 300, 400 or 500 elective in Speech: TAR 211, 221, 303, 311, 313, 411, and any two courses chosen from 431, 432, 433, 435, 436, and 437.

Requirements for the M.A. Degree:

Requirements for Admission. In addition to the general requirements of the University, an applicant must have an academic average of B in all Speech courses, a minimum of 18 quarter hours in Speech, and a score of 500 or higher on the verbal aptitude section of the Graduate Record Examination. All applications must be approved by the Department of Speech.

Course Work. A Master of arts degree in Speech requires 45 quarter hours of course work distributed in the following manner: 15 hours in Rhetoric and Public Address (to be selected from SPE 661, 662, 665, 667), 10 hours in Oral Interpretation of Literature (to be selected from SPE 521, 522, 523, 621), 5 hours of Speech Science (to be selected from SPE 501, 503, 511, 611), 5 hours in Speech Seminar (SPE 691) and 10 hours in graduate Speech electives.

For graduate Speech electives, students may substitute two courses acceptable for graduate credit in related areas, subject to approval by the Department of Speech.

Examinations. Each student is required to pass a comprehensive examination, both oral and written.

Other Requirements. Each student will select one of the plans listed below:

Plan A—An extended critical or analytical paper (thesis) in the field of Speech studies.

Plan B—Proof of a working knowledge of a computer language. (Cobol or Fortran) and ability to design a research program.

Plan C—Two courses (8 credits) in linguistics and one course (4 credits) in the structure of American English.

Plan D—Three courses (or 12 credits) in statistics.

Plan E—Three courses (or 12 credits) in Speech and/other academic disciplines if part of an approved planned sequence.

Plan F—At least 12 credits in a foreign language above Basic Studies level.

Division of Natural Sciences and Mathematics

The Division of Natural Sciences offers courses in astronomy (AST), biology (BIO), botany (BOT), chemistry (CHM), geology (GLY), mathematics (MTH), microbiology (BIO), physics (PHY), zoology (ZOO), and oceanography (OGY).

The courses are designed for students planning scientific careers or those technical careers having a considerable component of science, such as engineering or medicine. These students will typically major in one of the sciences or in a combination of sciences as preparation for employment, transfer to professional schools or admission to graduate school. Those seeking to transfer to another university to complete a course in agriculture, home economics, pharmacy, or one of the medical professions may begin their science work here before transferring.

Students seeking a general understanding of science but not technical competence will normally wish to take the basic studies courses in biological science, physical science, and functional mathematics, and augment their understanding by adding upper level courses in the Division designed for non-scientists.

The B.A. Degree Programs

The Division offers the bachelor of arts degree in the following departments: Astronomy, Biology, Chemistry, Geology, Mathematics, and Physics.

Candidates for the bachelor's degree must be admitted to the upper level as early as possible upon completion of their basic studies requirements and before the end of their junior year.

Even before admission to the Division, students preparing for a science or mathematics career must plan their courses from their freshman year because of the sequential nature of the science curriculum.

If students enter the University well prepared from high school, they may qualify for waiver in the basic sciences and/or mathematics courses as described in the section of the College of Basic Studies. To qualify for the basic studies Natural Science or Mathematics waiver, students must have a grade of 425 or higher on the Twelfth Grade Placement Test and three years in high school science or mathematics respectively with a grade of "C" or higher.

Students who do not qualify for a waiver but have good preparation in science and/or mathematics on the basis of the proficiency test and other evidence, are advised to begin their liberal arts science and mathematics courses early and postpone basic studies science and mathematics to be waived later either by examination or as provided below:

A student passing either one of the liberal arts mathematics sequences MTH 211-213 or MTH 302-304 with an average grade of "C" or higher can receive an automatic waiver of CBS 109-110.

A student passing two beginning liberal arts sequences in separate phys-

ical science disciplines with an average grade of "C" or higher can receive an automatic waiver of CBS 208-210. These sequences are: CHM 211-213; PHY 201-206 or 301-304; GLY 201-301; AST 203-204 or 301-302.

A student passing BIO 201-203 with an average grade of "C" or higher can receive an automatic waiver of CBS 205-207.

A student admitted to the upper level will be assigned an adviser in his field who will guide the student in planning his program and meeting the requirements for the degree.

DIVISIONAL MAJOR

The bachelor of arts divisional major is designed to serve students desiring a broad background, such as science teachers, pre-medical students, and other pre-professional students. Major requirements in the Division of Natural Sciences are a minimum of 36 credits in the discipline of major concentration and a minimum of 24 credits in the division outside that discipline. These 24 credits must be approved by the student's advisor and must include a minimum of three at the 300 level or above. Prospective teachers should also consult the College of Education section of this catalog for information about certification requirements in the fields of science or mathematics. Pre-medical and pre-dental students should contact the chairman of the Pre-Medical Advisory Committee.

The divisional major is not necessarily an adequate preparation for entrance into a graduate program in the natural sciences. To strengthen the preparation, additional science and mathematics electives beyond the minimum requirements may be recommended by the faculty adviser. By the proper addition of science and mathematics electives beyond the minimum requirements, the divisional major can serve as a strong preparation adapted for graduate work in a wide range of interdisciplinary fields such as biochemistry, microbiology, biophysics, bacteriology, space sciences, oceanography, geochemistry, geophysics, and others.

PRE-MEDICAL PROGRAM

The pre-medical program provides a complete array of courses and educational experiences necessary for preparing oneself for admission to medical school. Pre-medical students should major in a discipline which is of the greatest appeal to them, whether it be in the sciences or non-sciences, and fulfill all requirements in that major for graduation. The following science courses are the minimum requirements for admission to virtually every accredited medical school:

One year of Biology: BIO 201, 202, 203.
Two years of Chemistry: CHM 211, 212, 213, 331-332, 333-334, 335-336.
One year of Physics: PHY 201-202, 203-204, 205-206.

Additional science requirements vary according to the medical school to which the student will be applying. Part of these additional requirements may be fulfilled by the following courses:

Chemistry: CHM 321, 305, 351.
Mathematics: MTH 211, 212, 213 (or MTH 101, 302, 303, 304)
Biology: ZOO 311; BIO 331, 421, 422.

Beyond the science course requirements, it is essential that students acquire an inventory of courses developing a sense of understanding of cultural and moral values, and basic social problems. It is understood that the quality of academic performance should be of the highest level.

It may be noted that well-prepared students with exceptional qualifications may be admitted to medical school as early as the completion of the junior year of pre-medical work.

Master's Degree Programs

The Natural Science division offers graduate programs leading to the master of arts degree in the fields of Astronomy, Biology, Botany, Geology, Mathematics, Microbiology, Physics and Zoology and a master of science in Chemistry.

Students apply for graduate work through the Division of Natural Sciences and Mathematics and are recommended for admission by the department in which they intend to concentrate. A departmental committee is appointed which supervises and guides the program of the candidate.

The general University requirements for graduate work at the master's level are given on page 151. The specific requirements for each department are listed under that department below. Further information regarding admission and available fellowships and assistantships may be obtained by writing to the proper departmental chairman.

Doctor's Degree Programs

The Division of Natural Sciences and Mathematics offers three programs leading to the degree of Doctor of Philosophy.

Biology—This program leads to the Ph.D. in Biology, including the fields of Marine Biology, Systematics, Behavior, Ecology and Physiology.

Chemistry—This program leads to the Ph.D. in Chemistriy, including the fields of Analytical, Biochemistry, Inorganic, Organic and Physical Chemistry.

Mathematics—This program leads to the Ph.D. in Pure and Applied Mathematics including the fields of Mathematical Astronomy and Mathematical Physics.

The University regulations governing graduate study at the doctoral level are given on page 153. The specific departmental requirements are given on page 126 for Biology, page 127 for Chemistry, and page 131 for Mathematics.

Departmental Requirements

ASTRONOMY

Requirements for the B.A. Degree:

A major in astronomy will normally consist of a minimum of 37 credits in the discipline, including AST 301, 302, 413, and 443; a selection of three courses from AST 521, 522, 533, 536, 583, and at least three credit hours of AST 361 or at least three credits in AST 481. AST 203, 204 and 371 are not available for credit for Astronomy majors. In addition, the student will take PHY 221 through 226; or PHY 211 through 216 and PHY 315; and a total of at least nine additional credit hours in Physics above the 200 level in consultation with the adviser. The total number of physics credits must in any case be at least 21.

The student will also take MTH 302, 303, 304, 305, and at least nine credits in mathematics at the 400 level or above, preferably to include MTH 405 and 406.

The student is expected to familiarize himself with the technique of

programming electronic computers before the end of the sixth quarter. No credit toward graduation is given for ETK courses.

Additional courses will be selected in consultation with the adviser. Selection of at least one foreign language (German, French or Russian) is strongly recommended, especially for those students who intend to enter graduate school.

Requirements for the M.A. Degree:

General requirements for graduate work are given on pages 151-53.

A minimum of 45 credits must include at least 24 for courses numbered 600 or higher and at least 18 for structured astronomy courses numbered 500 or higher. It will be assumed that the student knows enough mathematics and physics to follow any astronomy courses required in his curriculum. No credit is available for courses numbered 499 or lower which the student takes in order to make up for his initial deficiencies in this respect. Since candidates for the graduate degrees in astronomy may have a variety of backgrounds, including majors in astronomy, mathematics, or physics, the required course of studies may vary considerably among students.

A thesis is required, which must be based on original work. The student must also demonstrate, before the degree is granted, his ability to translate into English the pertinent scientific literature in at least one of the foreign languages: German, French or Russian.

BIOLOGY

Requirements for the B.A. Degree:

Major in Botany-Microbiology: Although there are specific course requirements for majors in the various subdisciplines of biology, all require study in certain basic areas of the biological and physical sciences. Modern biology is characterized by a marked interdisciplinary trend so that only students well grounded in ancillary fields like chemistry, mathematics and physics will be competitive for jobs and further study after completion of their baccalaureate degree.

Four specific curricula are available for the student interested in Biology. All curricula prepare the student for further graduate work, or for a terminal degree in the biological sciences. A major must present 45 credit hours in courses with a BOT, BIO, or ZOO prefix, and must include BIO 201-203, BIO 331, BOT 302, BOT 351, and BOT 491. At least 12 hours of the electives must have a BOT or BIO prefix. In addition, at least one year of laboratory courses in chemistry, one year of laboratory courses in physics, and one course in mathematics (MTH) are required. Students are advised to enroll in BIO 201 and CHM 211 in their freshman year and to seek completion of basic studies science requirements by obtaining an automatic waiver of CBS 205-207 by taking BIO 201-203. Prospective majors should obtain early curriculum counseling from the departmental chairman. This major provides a flexible program designed for preparation in education, conservation, forestry, and agriculture as well as serving as a terminal degree in the liberal arts.

Major in Botany: The student interested in Botany must have 45 credit hours in courses with the BOT, BIO, or ZOO prefix, and must include BIO 201-204, BIO 331, BOT 302, BOT 351, BOT 491 and courses in plant systematics, plant anatomy, plant ecology, and plant physiology. At least 12 hours of the electives must have a BOT or BIO prefix. In addition to one

year of laboratory courses in chemistry and physics, and one course in mathematics (MTH), at least one course in organic chemistry is required.

Major in Microbiology: The student interested in Microbiology must have 45 credit hours in courses with a BOT, BIO, or ZOO prefix and must include BIO 201-203, BIO 331, BOT 351, BOT 491, BOT 552 and additional credits in microbiology as recommended by his faculty adviser. In addition to one year of laboratory courses in chemistry and in physics, MTH 211 and three courses in organic chemistry or biochemistry are required. A student should plan to complete BIO 201-203 sequence, and CHM 211-213 sequence by the end of his freshman year; CHM 331-336, MTH 211, BIO 331, and BOT 351 by the end of his second year; PHY 201-206 and BOT 552 by the end of his junior year. A suggested plan of study is available from faculty advisers.

Major in Zoology: A student interested in zoology must include the following courses in his program: BIO 201-203, ZOO 321, BIO 331, BIO 421, BIO 422, BIO 445, and five elective, structured courses, three of which must have ZOO prefixes (two must be adviser-approved courses within the Natural Science division, but excluding those numbered 370-379). Also required are CHM 211-213, CHM 331-332, CHM 333 with 334 optional and CHM 351 (CHM 331-336 is an acceptable substitute), MTH 211-213, and PHY 201-206. A foreign language (preferably German, French, or Russian) is strongly recommended. It is imperative that freshmen complete the BIO 201-203 and the CHM 211-213 series during their first three quarters. In addition to serving as a terminal degree, the B.A. in Zoology provides preparation for advanced training in medicine and dentistry as well as graduate work in zoology.

Graduate Work in the Biological Sciences

General requirements for graduate work are given on pages 151-55.

Requirements for the M.A. Degree:

Major in Botany or in Microbiology: Students are admitted for graduate work in Botany or in Microbiology if they present the requisite background in the biological sciences. The bachelor of arts or bachelor of science degree with a major in botany, zoology, microbiology, biology, or the physical sciences is recommended in addition to a satisfactory grade on the Graduate Record Examination.

For a master's degree in Botany or in Microbiology, a minimum number of 45 credits is required of which: (1) a minimum of 24 credits in courses numbered 600 or above, (BOT, BIO or ZOO prefix) no more than 9 of which may be given for research (BOT 681) graduate seminar (BOT 691) or thesis (BOT 699); and (2) the remaining credits must be taken in courses numbered 400, 500 or above to meet the requirements of a minimum of 45 credits. Other requirements are: (3) completion of a master's thesis approved by the student's committee or an equivalent amount of course work approved by the student's major adviser, and (4) satisfactory performance on a final oral examination administered by the student's committee within the department.

Major in Zoology: A minimum of 45 credits must include 22 in biology courses (BIO, BOT, or ZOO prefixes) numbered 600 or above, not more than nine of which may be for the thesis. Other requirements are completion of a Master's thesis approved by the student's committee and satisfactory perform-

ance on a final oral examination given by the Department. Reading knowledge of one foreign language may be required by the student's committee.

Requirements for the Ph.D. Degree:

Doctorate in Biology: The Ph.D. in Biology is offered in the fields of Marine Biology, Systematics, Behavior, Ecology, and Physiology. It is a cooperative effort involving many disciplines. The department chairman is responsible for advising the student to (a) work toward his M.A. first or (b) work directly toward his Ph.D.

Students advised to work toward the Ph.D. will have a supervisory committee appointed as soon as possible and including at least one member from a discipline outside the student's field of concentration. The committee shall approve the course of study to be followed by the student, supervise his research, conduct his qualifying and final oral examinations, and approve his doctoral dissertation. The student's major professor will serve as chairman of his committee until the final oral examination.

The Admission to Candidacy will be issued by the Dean of the College upon receipt of a statement from the supervisory committee through the department chairman indicating that the student has successfully completed his language and qualifying examinations. In order to gain the experience that comes from teaching, satisfactory service as a teaching assistant for one academic year is required (unless a specific exemption is recommended by the supervisory committee). The student is expected to complete all course work stipulated by his committee with at least a B (3.00) overall average.

In general, the final oral examination will be a defense of the dissertation; however, other areas of the student's work may also be included. After all the above requirements are completed, the Chairman of Biology will certify to the Dean of the College that the candidate is eligible for the degree.

Marine Biology

The field of marine biology is especially important in Florida and there is a good demand for trained personnel. Several faculty members in the department teach courses and conduct research in this area. Summer courses are given at the St. Petersburg campus and include ZOO 546-547—Marine Invertebrate Zoology, BOT 543—Phycology, ZOO 519—Ichthyology, ZOO 623—Physiology of Marine Animals, ZOO 633—Physiology of Fishes and ZOO 615—Plankton Systematics. Interested students should see the chairman of the Biology department for further advice.

CHEMISTRY

Requirements for the B.A. Degree:

A chemistry major must include the following chemistry courses: CHM 211, 212, 213, 321, 331, 332, 333, 334, 335, 336, 441, 442, 443, 445, 446, 447, and 491. Other required courses include MTH 302, 303, 304, and either PHY 201-202, 203-204, 205-206 or PHY 301-302, 303-304, 305-306.

Students should keep in mind that CBS 208-209-210 and CBS 109-110 can be waived by taking the required courses listed above. The required sequence should be started immediately in the freshman year and the student should not register for any CBS courses that can be waived. The student should plan to complete the mathematics and physics requirements before the junior year so the CHM 441 can be taken at that time.

The above courses constitute a minimum curriculum for the B.A. in Chemistry. It is recommended that this program be strengthened with addi-

tional courses to be selected by the student in consultation with his faculty advisor.

ACS Approved Program. The following program is intended primarily for the student who plans to make chemistry his profession. The program is open to all chemistry majors. Students who complete this program will be certified to the American Chemical Society as having met the minimum requirements for a professional degree. The program consists of satisfactory completion of the above chemistry, mathematics, and physics courses plus the following courses: MTH 305, CHM 511, another 400 or 500-level course in chemistry, and two years of college-level German, French, or Russian. Other advanced chemistry, physics, mathematics, or biology courses should be taken if the student anticipates pursuing graduate work in chemistry.

Graduate Work In Chemistry

General requirements for graduate work are given on pages 151-55.

Departmental Requirements for the M.S. Degree:

All entering graduate students who have no advanced work beyond a B.A. or B.S. will be required to take the core course in each of the five areas: analytical, biochemistry, inorganic, organic, and physical chemistry. This requirement can be waived by recommendation of the advising committee on the basis of past work, performance on a diagnostic test, or substitution of more comprehensive and advanced courses. The required core courses are CHM 621, CHM 511, CHM 551, CHM 532, CHM 542.

Beyond the required core courses, the curriculum for a chemistry major will vary with the area of his thesis. The specific course requirements will be determined by his advisory committee and his proposed research, in consonance with the regulations given on page 152.

Comprehensive Examination. Each student must pass the written comprehensive examinations in four of the five areas: analytical, biochemistry, inorganic, organic, and physical chemistry. Each examination will be prepared by the faculty of that area and will be from one to three hours duration. Each examination will be graded independently by members of the respective areas each arriving at a fail-pass-high pass verdict. A student may repeat any or all of the examinations provided that he has passed four by the time six quarters have elapsed from his admission as either a degree-seeking or a non-degree seeking full-time graduate student. Normally, the examinations will be given during the period preceding Quarters I and III and after the preceding quarters have ended.

While it is anticipated that the core courses will bridge the gap between undergraduate and graduate courses, and will therefore help students prepare for the qualifying examinations, it should be understood that the qualifying examinations are general examinations in their respective fields and not merely final examinations in the core courses.

Final Thesis Defense. Upon completion of the thesis research and preliminary approval of the thesis by the supervisory committee, the M.S. candidate will be required to pass an oral examination conducted by the supervisory committee on his research. Final approval of the examination and of the thesis will require approval by the entire committee.

Requirements for the Ph.D. Degree:

The Ph.D. in Chemistry does not require a specific number or distribution of course credits. The candidate, with the help of his adviser and the approval of

his advisory committee, will design a program of study and research that will result in a mature and creative grasp of chemical science. Approval of the candidate's program will rest with his advisory committee.

While there are no specific course requirements for the Ph.D. degree, beginning graduate students who plan to circumvent the M.S. degree are advised to take the core courses or their equivalent before attempting the Qualifying Examinations.

Qualifying Examinations. The Qualifying Examinations requirement for the Ph.D. degree will be the same as the comprehensive examination for the M.S. degree except that the Ph.D. candidate must not only pass the examinations in four out of five areas, but he must also pass two of these examinations (one of which is in his major area) "with distinction". In other words, the Ph.D. candidate must demonstrate his very real grasp of the principles in his major area and one other area (probably related to his major area, but not necessarily so). As in the case of the M.S. requirements, a student may repeat any or all examinations, provided that he has passed four, two with high pass, by the time six quarters have elapsed from his admission as either a degree-seeking or non-degree seeking full-time graduate student. The Qualifying Examinations shall be given in the form of one to three hour examinations in each of the five areas—analytical, biochemistry, inorganic, organic, and physical.

While it is anticipated that the core courses will bridge the gap between undergraduate and graduate courses, and will therefore help students prepare for the qualifying examinations, it should be understood that the qualifying examinations are general examinations in their respective fields and not merely final examinations in the core courses.

Language Examinations. Before a student is eligible to qualify for candidacy for the Ph.D. degree, he must demonstrate a reading knowledge of the chemical literature in any two of the languages — German, Russian, and French (or any other language approved as appropriate by the supervisory committee); or he must demonstrate reading knowledge in one of these languages and demonstrate proficiency in a skill or specialization outside the discipline of chemistry. The latter could include (1) proficiency in computer programming; (2) advanced specialization in mathematics, physics, biology, geology, or any other appropriate area pertinent to scholarly work in chemistry; (3) any other field of advanced study of proficiency deemed appropriate by the supervisory committee.

The language requirement must be met by one of the following: (1) reading knowledge in two foreign languages as demonstrated by a test to be specified; (2) reading knowledge in one foreign language and some other proficiency such as computer programming; (3) in-depth knowledge of *one* foreign language (speaking and reading knowledge); (4) three quarters of a foreign language at the college level with a minimum of C grade in each quarter may be used to waive one language, or, if two foreign languages are taken, the language requirement is fulfilled; (5) periodic translations to be administered by the student's supervisory committee.

The language requirement must be met one year before graduation.

Major Comprehensive Examination. A comprehensive major examination will be required of Ph.D. candidates sometime after satisfactory completion of the qualifying examination. This examination must be taken one year before graduation.

Advancement to Candidacy. Completion of all the foregoing requirements admits the student to candidacy for the Ph.D.

Final Thesis Defense. Upon completion of the dissertation research and

approval of the dissertation by the supervisory committee, the Ph.D. candidate will give a public oral presentation of his research. This presentation can be scheduled only after all members of the supervisory committee have approved and signed the final form of the dissertation. The oral presentation will be chaired by a member of the faculty outside of the Department of Chemistry appointed by the Dean of the College. The candidate may expect questions concerning the details and significance of his research after the oral presentation. Final approval of the candidate's degree will require approval by a majority of the supervisory committee, which shall include the chairman of the oral presentation.

GEOLOGY

Requirements for the B.A. Degree:

A major in geology will normally include GLY 201, 301, 302, 303, 311, 361, 412, 503, 504, 513, and seven elective credits in Geology. (With the approval of the Geology department GLY 371 or 473 may be substituted for GLY 201 in the normal curriculum for Geology majors, provided a grade of B or better has been earned.) In addition, the program must include CHM 211, 212, 213; PHY 201, 202, 203, 204, 205, 206, and MTH 101. The student will choose, in consultation with his geology adviser, such additional courses in the Division of Natural Sciences and Mathematics that support his major interest within the field of Geology. Selection of a foreign language, preferably French, German, or Russian, is strongly recommended, especially for those students who intend to enter graduate school.

An entering student anticipating a major in geology is advised to enroll in GLY 201, 301, and CHM 211, 212, 213 in the freshman year and to seek curriculum counseling with a Geology adviser early in his college career.

All courses required for the major in geology (except GLY 481) must carry letter grades other than S or U.

Marine Geology:

One of the major divisions of marine study, marine geology, is a part of the program of the Geology Department. Courses and research in marine geoscience are conducted in the department, or in nearby marine environments. A geology major may, as a part of his program and with the guidance of his adviser, select electives from among GLY 411 Marine Geology, GLY 521 Geophysics, GLY 583 Selected Topics, and others that prepare him for graduate work. A major interested in marine geology should contact the chairman of the department for further details.

Requirements for the M.A. Degree:

General requirements for graduate work are given on pages 151-53.

Students are admitted for graduate work in Geology if they present the requisite background in geology and supporting sciences. The bachelor of arts and science degree with major in geology, or major in other natural science with strong supporting program in the geosciences is recommended in addition to a satisfactory grade on the Graduate Record Examination.

The curriculum for a geology major will vary with the area of his thesis. A minimum number of 45 credits is required for the master's degree of which: a minimum of 24 credits in courses numbered 600 or above (GLY prefix); either a written thesis in a field of specialization in geology approved by the advisory committee or an equivalent amount of course work in geology

approved in advance by the committee; and additional graduate credits in geology approved as part of a planned degree program to make a minimum of 45 credits beyond the bachelor's degree and exclusive of prerequisites. Satisfactory performance on a comprehensive examination is also required.

All required courses applicable to the master's degree (except GLY 681, 691, 699) must carry letter grades other than S or U. Other requirements for the degree may be found on pages 151-53.

Teacher Education:

For bachelor of arts degree secondary school teachers desiring to teach science at the secondary level should include basic courses in Geology and Earth Science as part of their curriculum. Some courses also give graduate credit.

For teachers in Junior College the M.A. degree in Geology is recommended. For an alternate degree, see pages 90-91.

MATHEMATICS

Requirements for the B.A. Degree:

Majors must have at least 47 credits in mathematics above the 100 level, including MTH 302, 303, 304, 305, 309, and 323. In addition, except for majors in mathematics for teaching, at least one of the following sequences is required: MTH 405, 406; MTH 513, 514; MTH 513, 406. Majors in mathematics for teaching must have MTH 423 and MTH 424. Suggested upper level courses for a major in mathematics and for a major in mathematics for teaching in secondary school are as follows:

Majors in Mathematics: MTH 401, 511, 520, 523, 531 and electives.

Majors in Mathematics for Teaching: MTH 345, 405, 420, 445 and 531.

Variation in course selection for special needs is to be done in consultation with the appointed adviser.

The following is suggested course program for the first two academic years:

	Freshman	
I	II	III
MTH 101	MTH 302	MTH 303, 309
	Sophomore	
MTH 304, 323	MTH 305	MTH elective (2)

Students with a strong background in high school mathematics may waive MTH 101 with the consent of the chairman.

Requirements for the M.A. Degree

General requirements for graduate work are given on pages 151-53.

A thesis is optional. The thesis program requires a minimum of 45 credits of course work, of which the thesis may carry three to nine credits. The non-thesis program requires 45 credits of course work. In either case, 24 hours of the course work must be taken in courses numbered 600 or above and the program must total at least 45 credits.

For each of the above programs, one of the following three 8-hour courses is required: MTH 614-615, 624-625, 632-633, and eight hours in each of disciplines—analysis, algebra, and topology. MTH 691 or MTH 681 is required each quarter, and may be omitted or taken more than six times only with the permission of the chairman.

A reading knowledge of either French, German, or Russian is required.

A comprehensive examination will be given to candidates before recommending that the degree be granted.

For bachelor of arts degree secondary teachers in mathematics, see page 77. For master of arts degree for teachers in mathematics, see page 85. For an alternative degree for teachers in junior college, see pages 90-91.

Requirements for the Ph.D. Degree

In addition to the general University requirements for the Ph.D. degree, on page 153, the mathematics department requires the following:

(1) The two languages required must be chosen from French, German, and Russian.
(2) Written preliminary examinations, usually taken during the second year, must be passed in four of the five following subjects: Algebra, Complex Analysis, Differential Equations, Real Analysis, and Topology.
(3) Specific numbers or distributions of course credits are not required. It is assumed that at this level the candidate, with the help of his adviser, and the approval of his advisory committee, will design a program of study and research that will result in a mature and creative grasp of mathematics. Approval of the student's program will rest with his advisory committee.

PHYSICS

Requirements for the B.A. Degree:

Majors must have one year of general physics (consisting of either PHY 201 through 206 and 315, or PHY 301 through 306), PHY 307, 341, 407, 409 441, 507, 509. Additional physics courses sufficient to total 45 credits of structured courses are required The student will also take MTH 401 and CHM 213.

Students registering for a physics course which has an associated laboratory must also register for the laboratory or obtain written permission from the chairman of the Physics department to register for the course only. Selection of a foreign language, preferably French, German, or Russian, is also strongly recommended.

Requirements for the M.A. Degree:

In addition to a thesis, a minimum of 45 credits is required, not more than nine of which may be for thesis research and writing. Of these 45 credits, 24 must be in courses numbered 600 or above. The mathematics proficiency test is also required.

When a student is admittted to the graduate program in physics, he will consult with the Graduate Physics Adviser, who will be his course adviser and will also keep a close check on the progress of the student in his work. After the student has made a decision as to his thesis field, the duties of the Graduate Advisor will be assumed by an Advisory Committee appointed by the department chairman. The Committee Chairman will usually be the thesis supervisor. The Advisory Committee will have the right to add any special requirement to meet any deficiency in background and will administer a comprehensive examination to the student before recommending that a degree be granted.

Requirements for the Ph.D. Degree

A Ph.D. degree in Mathematical Physics is given through the Mathematics Department. See requirements under Mathematics, above.

Programs for Teacher Education:

For a B.A. degree for the secondary school teacher of physics, see page 78. For M.A. degree for teachers in physics, see page 85. For teachers in junior college, the M.A. degree in physics is recommended plus PHY 688 and PHY 689.

Division of Social Sciences

The social sciences are concerned with man, his development, problems and institutions. They help the student to understand the world around him and to become a more informed citizen. In addition, the social sciences can prepare a student for employment in business, government and social service professions, either upon graduation or upon completion of additional graduate study.

Students in the Social Science division take majors in the departments of Anthropology, Geography, History, Political Science, Psychology and Sociology. Economics offers two majors, one in Liberal Arts and the other in the College of Business. In addition to these departmental majors, there are several kinds of interdisciplinary majors such as International Studies, Police Administration, Social Science Divisional, and the social studies major for high school teachers (described in the College of Education section of this catalog).

Most social science majors require statistics. The student should take elementary college mathematics courses to prepare him for statistics. All social sciences require clarity and accuracy of English expression. The student should take such English, speech and mass communications courses as might contribute to this skill. The specific requirements of each major are outlined below.

Graduate level courses are now offered in most social science departments and the master of arts degree is offered in Geography, History, Political Science, Psychology and Sociology. The doctor of philosophy degree is offered in Psychology.

ANTHROPOLOGY

The major in Anthropology consists of a minimum of 44 quarter hours in the field. This must include ANT 201, 202, and 203 which are prerequisite to all subsequent anthropology courses. ANT 302, 311, 313, and 325 are required as intermediate level training in the main sub-divisions of the field and ANT 491, the Senior Seminar, completes the specific course requirements. The remaining 12 hours may be elective ANT courses determined by interest and availability.

Exceptions to course prerequisites require the consent of the chairman. For a description of the combined major in Anthropology and Linguistics, refer to the Linguistics section, page 115.

ECONOMICS

The liberal arts major in economics requires 54 credits in economics, including ECN 201-202, 301, 323, 331, 401, ACC 201-202-203, and 17 hours of upper level electives in Economics.

GEOGRAPHY

Requirements for the B.A. Degree:

A major in geography consists of 50 quarter hours in geography courses,

including GPY 301-302-303; 403 (Meteorology) and one additional 403 course; 405 (Economic) and one additional 405 course; 371 or 407; 409 (Cartography) and one additional 409 course.

Requirements for the M.A. Degree:

General requirements for graduate work are given on pages 151-53.

All students must complete 45 credit hours in graduate geography courses, following one of the two plans outlined below. A written and oral comprehensive examination covering the general field of geography is required before graduation, and the student must demonstrate his ability to translate into English the pertinent scientific literature from one modern foreign language. Foreign students, whose mother tongue is not English, may use English as their foreign language.

Thesis Program: The 45 credit hours in geography must include: GPY 501, 503, 505, 507, 603, 605, 607, and 699. Up to 8 credits outside the department may be elected with the approval of the student's committee and major professor. An oral defense of the thesis is required.

Non-Thesis Program: The 45 credit hours in geography must include: GPY 501, 503, 505, 507, 601, 603, 605, 607, and 689. Up to 4 credits outside the department may be elected with the approval of the student's committee and major professor.

HISTORY

Requirements for the B.A. Degree:

The undergraduate curriculum in history is composed of the introductory course HTY 100, the advanced courses HTY 485, 587, 591, 592, and the following fields: *Field I, Ancient History,* consisting of courses HTY 201, 202, 321, 322, 325, 326, 365, 366, 401, & 402; CLS 321, CLS 527, CLS 529; *Field II, Medieval History,* consisting of courses HTY 221, 222, 324, 327, 328, 329, 423; *Field III, European History,* consisting of courses HTY 231, 232, 333, 334, 335, 336, 337, 338, 340, 341, 342, 345, 346, 347, 425, 426, 427, 428, 429, 430, 431, 432, 455; *Field IV, American History,* consisting of courses HTY 211, 212, 301, 302, 303, 304, 311, 312, 315, 316, 317, 319, 320, 347, 409, 410, 411, 412, 421, 422; *Field V, Latin American History,* consisting of courses HTY 251, 252, 353, 355, 451, 453; and *Field VI, Comparative History,* consisting of courses HTY 327, 328, 345, 346, 425, 426, 427, 428, 429, 430, 461, 464, & 465.

A minimum of 48 quarter hours is required for a major. From Part I, HTY 100 and any other two of the following sequences are required: HTY 201, 202; HTY 221, 222; HTY 231, 232; or HTY 251, 252. With the consent of a departmental adviser, cross-selection may be permitted. From Parts II and III, a minimum of 16 hours is required in 300 or above level courses. Of these 16 hours, 12 must be taken within one of the six fields. From Part III, at least one HTY 591 (Pro-Seminar), HTY 587, and HTY 592 are required (HTY 587 and 592 should be taken during the senior year). CLS 321, 527 and 529 will be accepted toward satisfying the requirements in the field of Ancient History.

History majors, in addition, should take SPE 201 (Fundamentals of Speech), ENG 325 (Advanced Expository Writing) and at least 27 quarter hours drawn from the following disciplines: Anthropology, Economics, Geography, Political Science, Psychology, Philosophy, Literature, the Humanities, and the Fine Arts. Majors intending to pursue graduate work should take a minimum of two years of classical or modern foreign language. Majors, whether

intending graduate work or not, should have at least two courses from the Interdisciplinary Social Science Program.

Requirements for the M.A. Degree:

The graduate curriculum in History is composed of a core program, a thesis and course work in the following fields: Field I, American History to 1865; Field II, American History since 1865; Field III, Early Modern European History; Field IV, Modern European History; Field V, Medieval History; Field VI, Latin American History; and Field VII, Comparative History.

In addition to the general requirements of the University, a candidate is required to complete a total of 52 quarter hours, eight of which shall comprise a thesis. At least 30 quarter hours must be in formal regularly scheduled course work, 24 of which must be at the 600 level. Credit for any coursework at the 300 or 400 level must be approved by the Dean of the Division and reported to the USF Graduate Council and the Dean of Academic Affairs. Students applying for acceptance of work at this level must be given additional work not expected of regular students in these courses and the completed work must demonstrate a superior level of performance. Courses at the 500 level are acceptable for credit toward the master's degree without prior approval when taken as part of a planned degree program. The core courses, HTY 600, 601, 602 are required of all candidates.

A reading proficiency in one foreign language must be demonstrated. A satisfactory preparation in the core program, two fields, the completion of a comprehensive examination, and a thesis are required for graduation.

INTERDISCIPLINARY SOCIAL SCIENCES

The Department of Interdisciplinary Social Sciences offers courses designed to deal with cross-disciplinary problems in the social sciences by using the "convergence" concept of interdisciplinary treatment. Its courses are provided as a service to all interested departments of the University. Certain courses are either required or recommended by a number of departments in the College of Liberal Arts, the College of Education, and by several interdisciplinary degree programs.

Two interdisciplinary degree programs of the Social Science division are coordinated by the department: Law Enforcement and the Social Science Divisional Major.

Law Enforcement

Requirements for the B. A. Degree:

Law Enforcement majors must complete the following specific courses: SOC 201, 301, 331, 371, 561, 563; PSY 201, 335, 455; POL 351, 432, and either 453 or 454; SSI 301. Additional requirements are three Social Science electives, two of which must be SSI courses.

Law Enforcement majors may qualify for financial aid as provided for by the Law Enforcement Education Program of the U.S. Department of Justice. Further information can be obtained from the Office of Financial Aids.

Social Science Divisional Major

Requirements for the B.A. Degree:

This major is designed to provide broad training for superior students whose interests or vocational objectives cross disciplinary lines. (Students who

have difficulty maintaining a B average or students with restricted interests should not attempt it.) It requires 64 credits in the division, with at least 20 credits in one discipline, to be selected with the consent of the major adviser. At least three courses are required in Interdisciplinary Social Sciences (Prefix "SSI"), one of which shall be SSI 301. At least 40 hours must be upper level.

A different kind of divisional major for prospective teachers of social studies is described under the College of Education requirements.

INTERNATIONAL STUDIES

Three programs are currently offered in the International Studies Program: International Relations, Non-Western Studies, and Latin American Studies. The core curriculum common to the three includes five courses: ANT 201-203, ECN 201-202, GPY 371. Eighteen credits of an appropriate foreign language above the 100 level (or equivalent proficiency) are required.

Each student's program must be planned with the international studies adviser, who is empowered to make appropriate substitutions when educationally justified. All three majors are encouraged to take ENG 325 (4) and SPE 201 (5) or 363 (5).

Additional special requirements in the three programs follow. Up to nine credits may be substituted for these requirements by successfully passing CBS 395, Overseas Study.

International Relations Program

International Relations majors must select 10 courses from the list below, from at least three departments, and including a minimum of 6 courses of International Relations content (indicated by asterisks): ANT 302, 303* (any foreign region), 415, 461; ECN 351*, 405*; GPY 405 (political), 407* (any foreign region); HTY 251, 252, 333, 334, 337, 338, 340, 341, 342, 345*, 346*, 347, 409*, 410*, 429*, 430*, 461*, 464; POL 311*, 331*, 333*, 338*, 405, 410, 415*, 421*, 425, 428, 438*, 550*, 561*; SOC 371, 541, 571; SSI 311*, 315*, 339, 341, 343, 345, 347, 361*, 449*, 450*, 481*, 485*, 491*, 505*, 583* (international topic).

Non-Western Studies Program

Non-Western Studies majors must select 10 courses from the list below, from at least three departments, and including a minimum of 6 courses of Non-Western content (indicated by asterisks): ANT 302, 303* (Asia or Africa), 415, 461*; ECN 351, 405: GPY 405 (political), 407* (Asia or Africa); HTY 409, 410, 461*; HUM 539*, 540*, 541*, 542*, 543*; POL 331*, 338, 410*, 421*, 428, 438, 561*; SOC 371, 541, 571; SSI 343*, 345*, 347*, 361*, 449*, 450*, 481*, 485*, 491*, 505, 583.

Latin American Studies Program

Latin American Studies majors must select 10 courses from the list below, from at least three departments, and including a minimum of 6 courses of Latin American content (indicated by asterisks): ANT 302, 303* (Latin America), 415, 461; ECN 351, 405, 451, 461; GPY 405 (political), 407* (Latin America); HTY 251*, 252*, 353*, 355*, 409, 410, 451*, 453*, 461, 591* (Latin America); HUM 545*; POL 331, 425*, 561; SOC 371, 541, 571; SSI 311, 315, 341*, 361, 449, 450, 481*, 485*, 491*, 505, 583.

POLITICAL SCIENCE

Requirements for the B.A. Degree:

The undergraduate curriculum in political science is composed of POL 199, 201, 491 and SSI 301 as core courses and the following fields, *Field I, American Government,* consisting of courses POL 338, 341, 345, 347, 431, 432, 434, 441, 443, 455, 463; *Field II, Public Administration and State and Local Government,* consisting of courses POL 203, 351, 453, 454, 455, 457, 525, 527; *Field III, Political Theory and Philosophy,* consisting of courses POL 343, 431, 443, 461, 462, 463, 464; and *Field IV, Comparative Politics and International Relations* consisting of courses POL 311, 331, 333, 338, 405, 410, 415, 421, 425, 428, 438, 445, 550, 561.

A minimum of 44 quarter hours is required for a major. The core curriculum consists of 16 quarter hours and, in addition, the student must take *at least one course each from three* of the *four* fields with a total of seven courses and 28 quarter hours. While some courses may be listed under two fields, a course may be used only once to fill a field requirement.

Requirements for the M.A. Degree:

General requirements for graduate study are given on pages 151-53.

The student must complete a minimum of 45 quarter hours of graduate level courses. At least 24 hours must be at the 600 level. The minimum of 30 quarter hours must be taken in formal, regularly scheduled classes, 15 hours of which must be at the 600 level. Courses at the 500 level are acceptable for credit towards the master's degree when taken as part of a planned degree program, approved by both the student's adviser and the Department of Political Science. The following courses are required of all graduate students in this program: POL 600 or POL 643 or both.

A minimum of 28 quarter hours must be taken in political science; 8 quarter hours of approved electives outside the Department, and 9 quarter hours of thesis credits. A comprehensive written examination will follow the completion of the course work.

Students who do not have an undergraduate major in political science, or its equivalent, may be admitted to candidacy in the program upon consent of the Department. Such students may be required to take additional courses beyond the minimum requirements.

A minimum of one-half of the master's degree program must be completed on campus. The student must be registered as a full-time graduate student for one quarter or two summer sessions.

PRE-LAW

The American Association of Law Schools suggests that students preparing for law school must acquire basic skills in: (1) Reading and Comprehension, and (2) the English language. Mastery of the English language, both written and oral, and ability to read rapidly comprehensively are positively essential for successful performance in the study of law. As there is no prescribed pre-legal program, any courses that help develop clear and systematic thinking, command of the English language, and a broad understanding of our society constitute sound preparation. A good lawyer must understand the social context within which legal problems arise.

No specific college major is required for admission to law school. Qualification for the study of law includes the bachelor of arts degree or its equivalent, the results of the Law School Admission Test given by the Educational

Testing Service at Princeton, New Jersey, a student's pre-law scholastic record, and other criteria which vary according to individual schools.

The Law School Admission Test is given simultaneously several times each year at Stetson Law School and at numerous other test centers throughout the nation. Students should plan to take the test not later than February of the year in which they make application to a law school. Information pamphlets and application blanks for the Test are obtainable from the Political Science Department, SOC 352, University of South Florida, or from Law School Admission Test, Educational Testing Service, Box 944, Princeton, New Jersey, 08540, or from the test centers.

Students wishing additional information should consult with the pre-law adviser.

PSYCHOLOGY

Requirements for the B.A. Degree:

Majors must complete at least 38 quarter hours in the field. All majors must complete PSY 201, SS1 301, PSY 311-312 and select *three* of the following courses: PSY 402, 403, 404, 405. In addition, 12 elective credits in Psychology courses must be completed. PSY 411 is strongly recommended for all majors and *required* of students planning graduate training. Functional mathematics and biological science in the College of Basic Studies are recommended. Otherwise, students majoring in psychology are encouraged to complete a varied undergraduate program.

Requirements for the M.A. Degree:

General requirements for graduate work are given on pages 151-53.

The student must complete 56 credit hours of graduate psychology courses. All students must take at least two of the three methods courses, PSY 631, 632, and 633. In addition, the student must complete a minimum of four of the following six courses: PSY 634, 635, 636, 637, 638, and 639. The selection of these courses will be made upon the mutual agreement of the student and his advisory committee. Students with prior work in PSY 634, 635, 636, 637, 638, and 639 may waive any of these by successfully passing a special examination given by the Psychology department. Successful waiver does not reduce the overall credit hours requirement. PSY 640 is taken in each of the first three quarters of the first year of graduate work. Specific apprenticeship assignments will be arranged to suit the student's interests and training needs. A research thesis, PSY 699, is required and the student must successfully pass an oral examination on the thesis as well as maintaining a B average in his course work, exclusive of thesis and research courses.

Requirements for the Ph.D. Degree:

A Ph.D. program in psychology has been approved by the Board of Regents to begin in September, 1971, with specializations in Clinical, Industrial-Organizational, and General Experimental Psychology. As of the printing of this catalog requirements for admission to these programs have not been detailed. For a brochure describing this program write to Graduate Admissions Committee, Department of Psychology, University of South Florida, Tampa, Florida 33620.

SOCIOLOGY

Requirements for the B.A. Degree:

The major consists of a minimum of 40 quarter hours which must in-

clude SOC 201, 315, 321, and SST 301; at least one course from SOC 331, 533, 535; and at least one from SOC 341, 345, 543.

The following courses may not be counted in the 40-hour minimum for the major but may be elected as additional courses: SOC 251, 481, and 505. A model program of recommended sequences may be obtained from the Sociology department.

Requirements for the M.A. Degree:

A minimum of 45 credits is required, including SOC 611, 621, 623, 691 and 692, and a thesis.

Admission to the M.A. program: Satisfactory score on the Graduate Record Examination (Aptitude); two letters of reference from previous instructors; four courses in Sociology including Statistics, Theory and Methods of Research (SSI 301, SOC 315 and SOC 321) or equivalent. Documents are sent to the Registrar. Instructions for applicants are available from the Sociology department. General requirements for graduate study are given on pages 151-53.

Fine Arts-Humanities Building

College of MEDICINE

The major objectives of the College of Medicine in accepting the charter class in September, 1971, are first, to create and maintain an academic environment in which medical education, the production of new knowledge, and community service may be continued in a quality manner. The second objective is to integrate the College of Medicine into the mainstream of the community and to participate in and lead in the up-grading and improvement of the health care standards of the community in which the College is located. The third objective is to function within the framework of the total University as an integral and valued part of the University community.

The philosophy of the educational program at this institution is to provide a strong academic basis for lifetime scholarship in medicine and growth in professional stature for our students; to lay the foundation for the development of ever increasing technical and professional competency and proficiency in the arts and sciences of medicine for each of the students; to instill in our students compassion and a sense of devotion to duty to their profession and to their patients; to provide relevance and continuity in instruction among the various disciplines related to medicine; to maintain and increase our students' motivation for community and human service in the practice of their profession; to stimulate the students to accept major responsibilities in learning; to orient teaching activities around the student and his desire and ability to learn.

With these concepts in mind, a curriculum has been developed which we believe will achieve an effective correlation between the pre-clinical and clinical instructional areas. This curriculum is designed to emphasize conceptually oriented teaching, thus affording the students a challenging and intellectual experience as opposed to a routine and the superficial presentation of a large volume of facts. Relevance to medicine will be emphasized in all areas of instruction in a way recognizable and understandable by the student of medicine. Increased correlation on an interdisciplinary basis will be instituted providing reinforcement between the various fields of study. The curriculum will also provide a close and ongoing experience for the student in the day-to-day and continuing health care delivery system within the community hospitals and in ambulatory care facilities. It is anticipated the program will produce graduating physicians who understand and desire the practice of medicine as a fruitful and meaningful choice for a lifetime career of service to their patients and the community.

It is recognized that the program does place heavy demands upon the student. He will be expected to utilize all resources provided by the College, to maintain a consistent level of academic achievement, and to demonstrate evidence of initiative and dedication to his chosen profession.

Admissions

Students admitted to the College of Medicine are selected on the basis of what appear by present standards to be the best suited for the successful study and practice of medicine. The selection is made by the Admissions Committee composed of members of Pre-Clinical, Clinical, and Volunteer faculty. Each applicant is considered individually and is judged strictly on his own merits. Characteristics evaluated include motivation, integrity, character, and general fitness. These are judged by recommendations of the applicant's Pre-Medical Advisory Committee as well as other letters of recommendation. The academic record and Medical College Admission Test furnish an estimate of academic achievement and intellectual competence.

Interviews are arranged for all applicants whose qualifications appear to warrant complete exploration.

All inquiries concerning admission should be directed to the Office of the Associate Dean for Student Affairs, College of Medicine, University of South Florida, Tampa, Florida 33620.

Requirements for Admission

A minimum of three years of college or university work is required with some preference given to those applicants who present a bachelor's degree from a liberal arts college approved by one of the national accrediting agencies. The minimum requirement is three years of college work (90 semester hours or 135 quarter hours, exclusive of Physical Education and R.O.T.C.).

Regardless of the number of years involved in Pre-Medical training, the college credits submitted by the applicant must include the following:

One Year — General Chemistry, including laboratory
One Year — Organic Chemistry, including laboratory
One Year — Physics, including laboratory
One Year — Biology, including laboratory
One Year — Mathematics

All applicants must arrange to take the Medical College Admission Test.

REQUIREMENTS FOR GRADUATION

The awarding of the degree Doctor of Medicine will follow successful completion of the entire required course of study. Grading of performance in academic subjects will be on a pass, fail, honors grading system, and the student must have achieved a grade of at least pass in all subjects in the curriculum. This curriculum is normally completed after a period of four years, but in selected cases and with the approval of the Dean, it may be completed in a somewhat shorter period of time. In addition to academic performance, the student must have demonstrated proper professional development and demeanor during his course of study.

Medical Technology Program

Each student seeking to enter the Medical Technology Program must have completed not less than 135 quarter hours of work . This must include 24 hours of Biology (including BIO 351), 24 hours of Chemistry, 12 hours of Physics, courses satisfying the College of Basic Studies requirements, CBS 401, and courses in non-science fields to insure a broad background.

As an integral part of this program, qualified students will follow a twelve-month course in one of the approved Medical Technology Schools in central Florida. They will register for a total of 45 credits during the year. Because such courses are open only to those already admitted to the program, they are not listed in this catalog. The students completing this program will be granted a B.S. in Medical Technology.

Chemistry Building

College of NURSING

The College of Nursing program leads to a Bachelor of Science degree with a major in Nursing. It is designed to prepare for beginning professional practice in all fields of nursing. It also will provide a sound basis for graduate study.

Progression in learning is planned to help students attain the following objectives:

1. Ability to communicate; communication meant in the broadest terms: verbal, non-verbal, written, and mathematical.
2. Ability to make decisions based on relevant judgments.
3. Appreciation of human behavior and needs.
4. Comprehension of sciences basic to developing nursing theory and practice.
5. Competence in the technical skills of nursing care.
6. Ability to plan and perform nursing care.
7. Ability to direct care given by associated nursing personnel.
8. Ability to contribute to the health team as an effective professional.
9. Concern for the health of families and the welfare of the community.
10. Desire for continuous professional and personal development.
11. Interest in responsible citizenship.

Applicants must meet the requirements of the University of South Florida and in addition will:

1. Be interviewed by a College of Nursing faculty committee.
2. Provide evidence of satisfactory health.
3. Show evidence of high school graduation or equivalent.

Center for RESEARCH AND DEVELOPMENT

Multi-disciplinary academic and research institutes are grouped under the Center for Research and Development within the Office of the Vice President of Academic Affairs. The purpose of the Center is to experiment with development of research and new academic programs which otherwise might not be initiated. Currently the Institutes are: Marine Science, Aging, Exceptional Children and Adults, Speech Pathology and Audiology, and Rehabilitation. Four graduate programs leading to a master's degree are available in: Gerontology (Aging), Marine Science, Speech Pathology and Audiology, and Rehabilitation.

Students apply for graduate work through the Center for Research and Development and are recommended for admission by the Institute in which they plan to specialize. The general admission requirements for graduate work are given on page 150. Specific Institute requirements are listed below.

Institute on Aging

Requirements for the M.A. in Gerontology:

Students from a wide variety of undergraduate backgrounds are admitted for graduate work in gerontology. Priorities for admission and stipends are based on work experience, Graduate Record Examination scores, and grade point ratio.

The M.A. in Gerontology requires a minimum of 54 quarter hours in approved couses including 12 hours of field placement. Of the 54 hours, 47 hours must be in courses labeled "AGE." Required courses for the M.A. degree include AGE 501, 502, 503, 507, 603, 606, 610, 691, 692, 693, 694, and 695. Majors are also required to take a minimum of 6 hours from the following: AGE 504, 509, 605, 608, 611, 612, and 585. Electives from other departments must be approved by the student's adviser. There are no language or thesis requirements.

Marine Science Institute

The Marine Science Institute of the University of South Florida was established in the fall of 1967 with headquarters at the St. Petersburg campus, a former U.S. Maritime Base. The Tampa Bay area, with its central location in relation to the State as a whole and proximity to the great continental shelf of the Florida Gulf coast, is an ideal location for a major marine science

research and graduate teaching center. The extensive and beautifully adapted maritime base provides the Institute with the finest facilities with which a new oceanographic organization ever began its work.

Requirements for the M.A. Degree in Marine Science:

General requirements are given on pages 151-53. A minimum of 45 credits must include OGY 521, 531, 541 and 551. Students who, in the judgment of their graduate committee, have had the equivalent of one or more of these courses before entering the degree program may waive the appropriate course(s).

A thesis is required, which must be based on a marine problem in any of the areas: bacteriology, botany, chemistry, geology, physics or zoology.

Rehabilitation Institute

The Master of Arts in Rehabilitation Counseling is offered by the Rehabilitation Institute. This is a five-year master's degree sequence requiring a minimum of 60 quarter hours. A student may enter the program at the beginning of his senior year rather than after the baccalaureate degree has been granted. The following courses are considered basic to the rehabilitation counseling profession and constitute a required core for the master's program: REH 501, REH 503, REH 507, REH 610, and REH 620. In addition to these core courses, other offerings in rehabilitation counseling include REH 502, REH 504, REH 505, REH 506, REH 604, REH 605, REH 606, REH 607, and REH 621. Twenty-six quarter hours of the student's course work may be elected from related graduate programs.

Through individual counseling, vocational testing and evaluation, coordination of rehabilitation services, and a variety of related skills and techniques, the rehabilitation counselor works with other members of the rehabiliation team in assisting individuals to achieve maximum self-realization and optimal psychological, vocational, and social adjustment. The rehabilitation counselor may work in a variety of settings including State Vocational Rehabilitation agencies, hospitals, rehabilitation centers, sheltered workshops, vocational counseling centers, correctional institutions, schools for the mentally retarded or mentally ill, and other similar facilities.

Speech Pathology and Audiology Institute

The Speech Pathology and Audiology Institute was established in July of 1968 to provide a multi-disciplinary focus on USF efforts to aid individuals with communicative impairment. Professional training, research, and clinical programs are conducted by this institute. Extensive clinical facilities, faculty, and instrumentation are available at the University campus for student clinical practice.

A Master of Science degree is offered through the Speech Pathology and Audiology Institute and provides clinical emphasis. This degree program is structured to meet the preparation requirements of the American Speech and Hearing Association for the Certification of Clinical Competency. The Master of Science program is available in either Speech Pathology or Audiology.

Undergraduate students take a five-year program ending in a Master of Science degree in Speech Pathology or Audiology at USF. Students enroll in the M.S. degree program between 90 and 180 academic quarter hours. Their pro-

grams are planned through the master's degree at the time of acceptance. This program is recommended to the undergraduate student since the minimum requirement for professional work in speech pathology or audiology is now the master's degree or equivalent.

A terminal program designed to train speech and hearing technologists is also offered through the Speech Pathology and Audiology Institute. The six-month curriculum prepares junior college graduates (or students who have successfully completed 90 quarter hours of academic credit) to work under the supervision of speech pathologists or audiologists in rehabilitative settings. The preparation of students in this program involves two University quarters, or approximately 32 quarter hours of academic credit. The latter quarter consists of supervised work experience in a laboratory field setting.

Requirements for the M.S. Degree in Speech Pathology:

General requirements for graduate work are given on page 151. A minimum of 45 credits is required as well as completion of sufficient course work and practicum to meet the American Speech and Hearing Association's requirements for clinical certification in Speech. The student with an existing bachelor's degree and appropriate prerequisites may complete his degree program with the following courses:

SAI 571, 572, 573, 574, 576, 577, 578, 580, 683, (4,4), 579 or 675, 698 (6), 699 or 681 (6).

Requirements for the Combined Undergraduate/Graduate M.S. Degree In Speech Pathology:

General requirements for graduate work are given on page 151. A minimum total of 225 credits is required for the combined undergraduate / graduate M.S. program. The following courses consitute the course of study (in addition to Basic Studies requirements):

SAI 301, 302, 311, 312, 313, 498 (6), 511, 513, 598 (6), 571, 572, 573, 574, 575, 576, 577, 578, 580, 683 (4,4), 579 or 675, 698 (9), and 699 (9) or 681 (9), and 25 quarter hours of course work (approved by Speech Pathology adviser) in acoustics, phonetics, speech science, linguistics, statistics, psychology, education, mathematics, or other fields that contribute to the understanding of normal processes of speech, hearing, or language.

Requirements for the M.S. Degree in Audiology:

General requirements for graduate work are given on page 151. A minimum of 45 credits is required as well as completion of sufficient course work and practicum to meet the American Speech and Hearing Association's requirements for clinical certification in Audiology. The student with an existing bachelor's degree and appropriate prerequisites may complete his degree program with the following courses:

SAI 571, 572, 573, 574, 580, 683 (4,4), 673, 674, 675, 676, 677, 698 (6), and 699 (6) or 681 (6).

Requirements for the Combined Undergraduate/Graduate M.S. Degree in Audiology:

General requirements for graduate work are given on page 151. A minimum of 225 credits is required for the combined program. The following courses constitute the course of study (in addition to Basic studies requirements):

SAI 301, 302, 311, 312, 313, 498 (6), 512, 513, 598 (6), 571, 572, 573, 574, 580, 683 (4,4), 673, 674, 675, 676, 698 (9), 699 (9) or 681 (9), and 25 quarter

hours of course work (approved by an Audiology adviser) in acoustics, phonetics, speech science, linguistics, statistics, psychology, education, mathematics or other fields that contribute to the understanding of normal processes of speech, hearing or language.

Institute III: Exceptional Children and Adults

Institute III serves four major functions on the University campus. First, the Institute staff plan and execute projects of theoretical and practical significance for the care and education of exceptional children and adults. Second, the activities carried out within the Institute are interdisciplinary in nature and serve to bring together individuals from a broad spectrum of professional backgrounds. Third, the Institute serves as a focal point for research and evaluation activities related to exceptional children and adults of agencies located outside the University community. And fourth, the Institute provides practicum settings within which students can gain experience in participating in on-going field research. Two major continuing Institute projects are: (1) The early identification and remediation of learning problems in elementary school children in an attempt to increase success in the regular classroom; and (2) The evaluation of the Guided Group Interaction program for male delinquent youths at the Walter Scott Criswell House.

Southwest Campus (Science Center, Chemistry and Life Science Buildings)

GRADUATE STUDY

All graduate programs at the University of South Florida are administered by the colleges concerned as upper extensions of the undergraduate colleges. The college deans are responsible for graduate as well as undergraduate administration in each of their respective colleges.

The Graduate Council is a University-wide body composed of representatives of each college, appointed by the President, and advisory to him and to the Vice President for Academic Affairs on policies and curricular matters pertaining to graduate study. The Graduate Council is charged with maintaining the excellence of all graduate programs.

The Assistant Dean of Academic Affairs for Graduate Studies is permanent chairman of the Graduate Council and thus serves the function of Graduate Dean for the University. In this role he does not have a line relationship with other offices of the University, but helps coordinate graduate study and provides supervising service and advice to the administering offices of the several colleges. His office also coordinates actions involving the Registrar's office, Office of Admissions, Computer Research Center, and the academic colleges in administrative functions related to graduate admissions and record keeping. In collaboration with the Graduate Council, his office exercises overall review and supervision of all graduate programs, provides leadership in evolving new programs, and insures the establishment and maintenance of high standards for existing programs.

The Graduate Council is the final approving body for adding, altering, or deleting any courses that graduate students would normally take (i.e., those bearing course numbers 500 or above). The office of the Assistant Dean of Academic Affairs and the Graduate Council have the function of stimulating and assisting departments, divisions, and colleges to move ahead into graduate programs as rapidly as appropriate. The Council is the final campus agency to act on proposed graduate programs intended to lead to an advanced degree before these proposals are forwarded to the Board of Regents for their final action. The Council also establishes University-wide entrance requirements for all graduate programs, although each college is permitted to make even more stringent admission rules for their own programs. The Graduate Council sits as a deliberative body on petitions to consider waiver of any requirements and to act in cases of jurisdictional disputes.

The Graduate Council conducts reviews to determine that University requirements for advanced degrees are being met and that there are not unauthorized deviations from programs. To accomplish these reviews the office of the Assistant Dean of Academic Affairs is charged with the periodic preparation of: (1) a report on the admission practices of all departments of the University; (2) a study of the retention practices of the departments; (3) a list of theses and dissertations submitted as partial fulfillment of requirements for advanced degrees; and (4) a review of the completed programs of students certified as eligible for advanced degrees.

Master's Degree Programs Offered

COLLEGE OF BUSINESS ADMINISTRATION

Master of Business Administration
Master of Accountancy
Master of Science degree in Management
Master of Arts degree in Economics

COLLEGE OF EDUCATION

Master of Arts degree programs in:

- Art Education
- Elementary Education
- English Education
- Foreign Language
  - French
  - German
  - Spanish
- Guidance
- Humanities Education
- Library and Audio-Visual
- Mathematics Education
- Music Education
- Physical Education
- Reading Education
- Science Education
- Social Science Education
- Speech Education
- Special Education, with specialization in:
  - Emotionally Disturbed
  - Gifted
  - Mental Retardation
  - Potentially Handicapped (N-3)
  - Speech Pathology (5-year program)
- Vocational and Adult Education, with specialization in:
  - Adult Education
  - Distributive Education
  - Business and Office Education
  - Industrial-Technical Education
- Junior College Teaching
  - Astronomy
  - Botany
  - Chemistry
  - Engineering
  - English
  - French
  - Geography
  - Geology
  - History
  - Mathematics
  - Microbiology
  - Physics
  - Political Science
  - Psychology
  - Sociology
  - Spanish
  - Speech
  - Zoology

COLLEGE OF ENGINEERING

Master of Engineering
Master of Science in Engineering (post-baccalaureate, or 5-year BSE / MSE programs)

COLLEGE OF LIBERAL ARTS

Master of Arts degree programs in:

- Astronomy
- Bacteriology
- Botany
- English
- French
- Geography
- Geology
- History
- Linguistics
- Mathematics
- Philosophy
- Physics
- Political Science
- Psychology
- Sociology
- Spanish
- Speech
- Zoology

Master of Fine Arts degree in Visual Arts
Master of Music
Master of Science degree in Chemistry

CENTER FOR RESEARCH AND DEVELOPMENT

Master of Arts degree programs in:

- Gerontology
- Marine Science
- Rehabilitation Counseling

Master of Science degree program:

- Clinical Speech Pathology and Audiology (5-year program)

Intermediate Programs Offered

COLLEGE OF EDUCATION

Education Specialist (Ed.S.)

Ph.D. Programs Offered

COLLEGE OF EDUCATION

Doctor of Philosophy degree in Education

COLLEGE OF LIBERAL ARTS

Doctor of Philosophy degree programs in:

- Biology
- Chemistry
- English
- Mathematics
- Psychology

Procedures for Applying

See instructions on page 14. Graduate students are also advised to apply early, A 15 dollar non-refundable application fee must accompany the application unless the student has been previously enrolled and paid the fee at the University. Two official transcripts from every college attended must be submitted directly to the Office of Admissions.

Requirements for Admission to Graduate Study

DEGREE SEEKING GRADUATE STUDENTS

Admission requirements for a degree-seeking graduate student shall include:

1. A baccalaureate degree or its equivalent from an approved college or university.
2. A "B" average or better in all work attempted while registered as an upper division student working for a baccalaureate degree
   or
   a total Quantitative-Verbal Graduate Record Examination score of 1000 or higher or an equivalent score on an equivalent measure approved by the Board of Regents. These examinations must have been taken within five years preceding application for admission and the official report of the scores must be submitted to the Office of Admissions.
3. Approval by an official of the program for which the student is applying.
4. Any additional requirements specified by his program.
5. Two official transcripts from all institutions attended submitted to the Office of Admissions.
6. Completed Confidential Personal Student Questionnaire sent from the last institution attended, directly to the Dean of Students at the University of South Florida.
7. Foreign students are required to present satisfactory scores on the Test of English as a Foreign Language.
8. Students accepted as undergraduates into an approved program leading directly to a graduate degree need not comply with 1 and 2, above.
9. A student's acceptance into graduate study will remain active for up to five years while he is in the Armed Services. A minimum of six weeks' notice prior to re-registration will be required to give the Office of the Registrar time to reactivate the student's file and screen his application in the light of updated information.

NON-DEGREE SEEKING GRADUATE STUDENTS

Students who are qualified to enroll in specific graduate courses but who either do not desire to enroll in a degree program, or do not meet all admission requirements for a degree program, or who are awaiting admission processing may be admitted as "non-degree graduate students," *Up to 12 hours of credit* earned while in this status may be applied to graduate requirements under the following conditions and only after acceptance as a degree seeking student:

1. At the time of enrollment in the course, the student must have a Baccalaureate degree, or he must complete degree requirements during that term and the course must be beyond those requirements. (Does not apply to students accepted as undergraduates into an approved program leading directly to a graduate degree.)
2. The course must be of such level and relevance as to be included in the degree program approved for this student should he seek admission to degree seeking status.
3. The course must be approved by his major adviser.

FOREIGN STUDENTS

Foreign students must comply with the requirements for admission to graduate study in addition to those listed on page 17.

THE TRAVELING SCHOLAR PROGRAM

The University System of the State of Florida has a Traveling Scholar program which will enable 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.

Procedure

A traveling scholar is a graduate student, who, by mutual agreement of the appropriate academic authorities in both the sponsoring and hosting institutions, receives a waiver of admission requirements and the application fee of the host institution and a guarantee of acceptance of earned resident credits by the sponsoring institution.

A traveling scholar must be recommended by his own graduate adviser, who will initiate a visiting arrangement with the appropriate faculty member at the host institution.

After agreement by the student's adviser and the faculty member at the host institution, graduate deans at both institutions will be fully informed by the adviser and have the authority to approve or disapprove the academic arrangement.

A student will register at the host instituion and will pay tuition and/or registration fees according to fee schedules established at that institution.

Conditions

Each university retains its full right to accept or reject any student who wishes to study under its auspices.

Traveling scholars will normally be limited to one term (semester, trimester, quarter, etc.) on the campus of the host university.

Traveling scholars are not entitled to displacement allowance, mileage, or per diem payments. The sponsoring institution, however, may, at its option, continue its financial support of the traveling scholar in the form of fellowships or graduate assistantships, with any work obligation to be discharged either at the sponsoring or host institution.

GRADUATE ASSISTANTSHIPS, SCHOLARSHIPS, AND FELLOWSHIPS

Students should inquire directly to the head of the department in which they plan to major.

Regulations Governing Graduate Study

Master's Degree

MAJOR PROFESSOR

An adviser will be appointed for the student in his first term of work. The major professor will be designated by the chairman of the department or area in which the degree is sought upon a mutual recommendation from the student and professor concerned.

SUPERVISORY COMMITTEE

Students working toward a thesis degree will have the benefit of a supervisory committee. The committee, consisting of the major professor and at least two other members of the department or area in which the degree

is sought, will be appointed by the appropriate chairman upon recommendation from the student and his major professor. The committee will approve the course of study for the student, supervise his research, and accept his thesis.

PROGRAM OF STUDY AND COURSE REQUIREMENTS

During the first term of study, in consultation with his adviser, the student should plan a program of work to be completed for satisfaction of degree requirements.

A minimum of 45 quarter hours is required for a master's degree, at least 24 hours of which must be at the 600 level. At least 30 hours must be in formal, regularly scheduled course work, 15 of which must be at the 600 level. Courses at the 500 level are acceptable for credit towards the master's degree when taken as a part of a planned degree program. (For five-year programs refer directly to the statement under the program.)

A major professor adviser may approve up to 8 hours of 400 level courses if taken as part of a planned degree program. Additional graduate credit may be earned in 400-level courses only if specifically approved by the appropriate dean and by the Graduate Council. Students enrolled in undergraduate courses as a part of their planned degree program will be expected to demonstrate a superior level of performance.

QUALITY OF WORK

Graduate students must attain an overall average of 3.0 (B) in all courses. No grade below "C" will be accepted toward a graduate degree, but all grades will be counted in computing the overall average (GPA).

Any graduate student who at the end of a quarter is not in good standing under the requirements for his degree as published, shall be considered to be on probationary status. Such a student may be dropped from degree seeking status after one quarter of probation by the dean of his college. Notification of probation shall be made to the student in writing by his major adviser, with a copy to the college dean. At the end of the probationary quarter, the major adviser shall recommend to the college dean, in writing, one of three alternatives: (1) removal of probationary status; (2) continued probation; or (3) drop from degree program. Every effort will be made during the probationary period to aid the student in reestablishing his standing.

APPEALS

Graduate students may appeal actions regarding their academic status:

1. In actions based on departmental requirements, the student may appeal first to his department through his major adviser, then to the college dean or his representative, and then to the Graduate Council, if necessary.
2. In actions based on the University minimum requirements, appeal shall be made directly to the Graduate Council.

Reports of actions and appeals will be maintained in the student's permanent departmental file.

LOAD

A student taking nine or more hours of graduate work in a full quarter will be classified as a full-time student. The normal maximum load is 13 hours in a full quarter.

RESIDENCY

Each college specifies residency requirement as an integral part of its statement about the master's degrees it offers (See the residency requirement for the program in which you wish to enroll.)

TRANSFER CREDIT

Transfer of credit from another recognized graduate school is limited to nine quarter hours. All transferred credit must (1) be evaluated as graduate credit by the Director of Admissions, (2) be approved by the program or college concerned, and (3) have been completed with grades of "B" or better.

Transfer credits must be posted to the student's permanent record no later than one full term prior to his graduation. It is the student's responsibility to make certain that the official who is to certify him for graduation properly notifies the Office of the Registrar regarding transfer credits.

TIME LIMIT

All work applicable to the master's degree requirements must be completed within the seven years immediately preceding the awarding of the degree.

APPLICATION FOR DEGREE

Each student who plans to complete his graduation requirements by the end of a term must complete the Application for Graduation within 15 days after the beginning of the term in which he will graduate. The application is available at, and after completion must be returned to, the Registrar's Office.

FINAL COMPREHENSIVE EXAMINATION

Prior to clearance for the degree, the candidate must perform satisfactorily on a comprehensive examination in his major field.

THESIS

When a thesis is required, an original and one copy of the approved thesis must be submitted to the Assistant Dean of Academic Affairs at least 30 days before the end of the quarter in which the student is to receive his degree. Only after the thesis and the copy have been approved for filing in the University Library can the student be certified for his degree. The thesis should conform to the guidelines in the *Handbook of Graduate Theses and Dissertations* available in the University Bookstore

SECOND MASTER'S DEGREE

A second master's degree may be granted as long as there is no duplication of credit. If there is any duplication of credit, the request must be considered by the Graduate Council.

Ph.D. Degree

The degree of Doctor of Philosophy is granted in recognition of high attainment in a specific field of knowledge. It is a research degree and is not conferred solely upon the completion of credits and a sequence of courses or by the acquiring of a number of terms of residency. The amount of residence and the requirements suggested below are a minimum. The degree shall be granted on evidence of proficiency and distinctive achievement in a specified field, by the

demonstration of the ability to do original independent investigation and the presenting of these findings with a high degree of literary skill in a dissertation.

SUPERVISORY COMMITTEE

A student working toward the Ph.D. degree must elect to do the majority of his work in a specifically approved area or department, and the remainder of his work in related fields. As soon as possible, normally during the first term of residency and upon recommendations from the student and his major professor, a supervisory committee shall be appointed for the student by the chairman of the department or area in which the degree is sought. This committee shall approve the course of study to be followed by the student, conduct his qualifying examinations, supervise his research, and conduct his final oral examinations. The major professor shall serve as chairman of the committee up to the final oral examination. This committee shall certify to the Dean of its college when all requirements have been met. The supervisory committee shall consist of at least five members, at least three of which must come from the area in which the major work for the degree will be done.

LANGUAGE REQUIREMENT

Before a student is eligible to take the qualifying examination, he must have completed a reading knowledge of two foreign languages. Special work done outside the student's field of concentration and related subjects may be substituted for one language, provided this exception is recommended by the student's advisory committee and is approved by the Graduate Council. The total of transfer (see Transfer Credit, page 153) and off-campus work together should not exceed one half of the planned program and neither is finally accepted until such work has been accepted as appropriate by the student's supervisory committee. Any question of the appropriateness of transfer and off-campus courses will be resolved by the Graduate Council.

RESIDENCY

The minimum requirement shall be three academic years of work above the bachelor's degree. At least one academic year of residence must be on the campus at the University of South Florida. An academic year's residency shall be defined as a minimum of nine hours of graduate work per term, or the chairman of the student's advisory committee may certify that the student be considered as in full time residence. The student must pay the full registration fee. Any graduate work counted toward the fulfillment of the requirement of the Ph.D. degree after admission to candidacy must be done within a seven-calendar-year period.

QUALIFYING EXAMINATION

At least one academic year before the degree may be granted, the student must pass a written qualifying examination over the subject matter of his major and related fields. An oral examination may also be required by his committee. The completion of the qualifying examination before mid-term will allow that term to be counted in full toward the academic year required. If the degree is not conferred within five calendar years of the qualifying examination, the qualifying examination must be taken again.

ADMISSION TO CANDIDACY

A graduate student does not become a candidate for the Ph.D. degree

until he is formally admitted to candidacy. This admission may not be granted until a certified statement from his advisory committee to the Dean of his college is submitted stating that he has successfully completed his qualifying examinations and in the opinion of his advisory committee he has demonstrated the qualifications necessary to successfully complete his requirements for the degree. The certificate of admission shall be issued by the Dean of his college, and the degree shall not be granted in less than one academic year after formal admission to candidacy (a school term shall be considered as part of this academic year, provided the admission is before mid-term).

DISSERTATION

At least two weeks prior to the final oral examiation, a candidate must submit to the Dean of his college, for approval of mechanical form and content, a typewritten copy of a completed dissertation and abstract signed by the committee. The dissertation must be the candidate's own work and must result from research done primarily by the candidate. The research from this dissertation must be original and worthy of publication in a scholarly journal or book.

FINAL ORAL EXAMINATION

The final oral examination in general shall be a defense of the student's dissertation; however, other areas of the student's work may also be included as part of this examination. It shall be conducted by his advisory committee, but shall be chaired by a person, appointed by the Dean of his College, from a field outside of the student's major or related fields.

FINAL FILING OF DISSERTATION

Two copies, an original and one other legible copy, of the approved dissertation must be submitted to the Assistant Dean for Academic Affairs before the student can be certified for his degree. These copies will serve for appropriate filing in the Library of the University.

COURSE DESCRIPTIONS

All courses offered for credit by the University of South Florida are listed on the following pages in alphabetical order according to subject area.

The first line of each description includes the prefix and course number, title, and number of credits. Credits separated by a colon indicate concurrent lecture and laboratory courses taught as a unit:

PHY 211-212. GENERAL PHYSICS (3:1)

Credits separated by commas indicate unified courses offered in different quarters:

HTY 211, 212. AMERICAN HISTORY (3,3)

Credits separated by a hyphen indicate variable credit:

CBS 395. OVERSEAS STUDY (1-9)

The following abbreviations are utilized in various course descriptions:

PR	Prerequisite
CI	With the consent of the instructor
CC	With the consent of the chairman of the department or program
CR	Corequisite
lec-lab.	Lecture and laboratory

Course descriptions are listed under the following headings (prefix in parentheses):

Accounting (ACC
Afro-American Studies (AFA)
American Studies (AMS)
Anthropology (ANT)
Astronomy (AST)
Basic Studies (CBS)
Biology (BIO)
Botany (BOT
Chemistry (CHM)
Classics and Ancient Studies (CLS)
Cooperative Education (COE)
Dance (DAN)
Developmental Courses:
- Developmental Reading (DRE)
- Developmental Mathematics (DMA)
- Developmental Study Skills (DRS)

Economics (ECN)
Education:
- Art Education (EDA)
- Curriculum (EDC)
- Elementary Education (EDE)
- English Education (EDT)
- Foreign Language Education (EDX)
- Foundations (EDF)
- Guidance (EDG)
- Humanities Education (EDY)
- Junior College Education (EDH)
- Library-Audiovisual Education (EDL)
- Music Education (EDM)
- Natural Science-Mathematics Education (EDN)
- Physical Education for Teachers (EDP)
- Measurement-Research-Evaluation (EDQ)
- Reading Education (EDR)
- Social Studies Education (EDW)
- Special Education (EDS)
- Vocational and Adult Education (EDV)

Engineering:
- Basic Engineering (EGB)
- Electrical and Electronic Systems (EGE)
- Energy Conversion and Mechanical Design (EGR)
- Industrial Systems (EGS)
- Structures, Materials, & Fluids (EGX)
- Computer Service Courses (ESC)
- Engineering Technology (ETK)

English (ENG)
Environment (ENV)
Finance (FIN)
Fine Arts, Intradivisional (FNA)
General Business Administration (GBA)
Geography (GPY)
Geology (GLY)
Gerontology (AGE)
History (HTY)
Humanities (HUM)
Interdisciplinary Language-Literature (LLI)
Linguistics (LIN)
Management (MAN)
Marine Science (OGY)
Marketing (MKT)
Mass Communications (COM)
Mathematics (MTH)
Medicine (MED)
Modern Languages:
- French (FRE)
- German (GER)
- Italian (ITA)
- Portugese (POR)
- Romance (ROM)
- Russian (RUS)
- Spanish (SPA)

Music Arts (MUS)
Off-Campus Term (OCT)
Philosophy (PHI)
Physical Education, Basic (PEB)
Physics (PHY)
Political Science (POL)
Psychology (PSY)
Rehabilitation (REH)
Religious Studies (REL)
Social Sciences, Interdisciplinary (SSI)
Sociology (SOC)
Speech (SPE)
Speech Pathology & Audiology (SAI)
Theatre Arts (TAR)
Visual Arts (ART)
Zoology (ZOO)

Note: Courses numbering 500 through 599 are open only to upper division and graduate students. Courses numbering 600 and above are open to graduate students only.

Some courses are graded on an "S-U" (pass-fail) basis, and are so identified in the quarterly course schedules.

ACCOUNTING

Faculty: Jurgensen, chairman; Antonio, Deyo, Harris, Hubbard, Keith, Lasseter, McClung, Merriam, Moon, Roberson, Rouadi, J. L. Smith, West.

ACC 201. ELEMENTARY ACCOUNTING (3)
Study of basic accounting principles including the recording and reporting of financial activity. The preparation and interpretation of financial statements.

ACC 202. ELEMENTARY ACCOUNTING (3)
PR: ACC 201. Accounting theory and practices for various equity structures.

ACC 301. INTERMEDIATE ACCOUNTING (5)
PR: ACC 305 or Concurrent Registration in ACC 305. Measurement theory and methodology underlying income measurement and reporting of financial position. The study of working capital including cash, receivables, inventories, and current liabilities.

ACC 302. INTERMEDIATE ACCOUNTING (5)
PR: ACC 301. Continuation of theory and principles underlying financial statements, time value analysis, long-term liabilities, plant and equipment, investments, intangibles, owner's equity, tax allocation, and funds flow analysis.

ACC 305. ACCOUNTING FOR MANAGEMENT CONTROL (3)
PR: ACC 202. Study of accounting from user's point of view. Includes measure-

ment theory, use of financial statements, and accounting measurement in planning and control.

ACC 401. ADVANCED ACCOUNTING (3)
PR: ACC 302. Quantitative application in accounting, partnerships, and governmental accounting.

ACC 402. CONSOLIDATED FINANCIAL STATEMENTS (3)
PR: ACC 302. Accounting for home office and branch operations and business combinations.

ACC 405. ACCOUNTING INFORMATION SYSTEMS (3)
PR: ACC 302. General systems theory, total systems concept, internal control problems, and computer based accounting systems.

ACC 411. FEDERAL TAXES (3)
PR: ACC 202. An introduction to the federal income tax structure. Use of tax services and the concept of taxable income as applies to individuals.

ACC 412. FEDERAL TAXES (3)
PR: ACC 411. Continued study of the federal income tax structure. Special topics and the concept of taxable income as applied to corporations.

ACC 413. FEDERAL TAXES (3)
PR: ACC 411. The concept of taxable income as applied to partnerships and fiduciaries. Introduction to estate, gift and social security taxes.

ACC 421. COST ACCOUNTING AND CONTROL (5)
PR: FIN 301 and ECN 331. Deals with relevant cost for decision making: capital budgeting; inventory planning and control; standard, job order, and process costing.

ACC 423. AUDITING (3)
PR: ACC 302 and 421. Principles and procedures of internal and public auditing. The ethics, responsibilities, standards, and reports of professional auditing.

ACC 424. ADVANCED AUDITING (3)
PR: ACC 423. Continuation of ACC 423. Emphasis directed towards the application of auditing standards and techniques in achieving audit objectives. Relationship of professional auditing to regulatory authorities.

ACC 425. BUDGETING (3)
PR: ACC 421. The development of budgets and their relation to expense and cost control, including the use of standard cost as a budgetary tool.

ACC 483. SELECTED TOPICS IN ACCOUNTING (1-5)
PR: CI. The course content will depend on student demand and instructor's interest.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ACC 501. ACCOUNTING CONCEPTS AND METHODOLOGY (3)
A study of basic accounting principles including the recording of transactions and the preparation and interpretation of financial statements.

ACC 502. ACCOUNTING CONCEPTS AND METHODOLOGY (3)
PR: ACC 501. A continuation of ACC 501. Consideration is given to budgeting and cost accounting. Emphasis is placed upon the analysis of financial condition and business operations through an understanding of accounting statements and reports.

FOR GRADUATE STUDENTS ONLY

ACC 601. MANAGERIAL ACCOUNTING AND CONTROL (3)
PR: Business Core or equivalent. A study of the relevancy and limitations of accounting measurement as a basis for business decision-making. Includes a review of fundamental accounting measurement theory and related tax implications.

ACC 602. MANAGERIAL ACCOUNTING AND CONTROL (3)
PR: ACC 601. The relevancy and limitation of cost information in business

decision-making. Emphasis is oriented towards the role of cost accounting measurements in: (1) planning and controlling current operations; (2) special decisions and long-range planning; and (3) inventory valuation and income determination.

ACC 605. DEVELOPMENT OF ACCOUNTING THOUGHT (3)
PR: 24 quarter hours in accounting or CI. A study and evaluation of the development and evolution of current account theory and measurement concepts, The definition of accounting objectives and goals and the development of measurement models.

ACC 606. CONTEMPORARY ACCOUNTING THOUGHT (3)
PR: ACC 605 or CI. Concentrated study of current problems areas in the field of accountancy.

ACC 607. SYSTEMS THEORY AND QUANTITATIVE APPLICATIONS (3)
PR: ACC 602 or equivalent. The design and operation of contemporary accounting systems including the relevance of data processing and statistical methods to the system of financial information and control.

ACC 611. FEDERAL TAX RESEARCH AND PLANNING (3)
PR: ACC 411 or CI. A study of the development of tax law and its implications in business decisions. Tax planning and tax research are emphasized.

ACC 621. MANAGERIAL COST ANALYSIS AND CONTROL (3)
PR: 24 quarter hours in accounting or CI. Measurement, interpretation, planning, and control of costs by means of predetermined standards and variance analysis. Use of accounting and statistical information in preparing budgets and controlling operations.

ACC 623. ETHICS AND RESPONSIBILITIES IN PROFESSIONAL ACCOUNTANCY (3)
PR: ACC 423 or equivalent. The study of elements of public accounting practice, professional conduct, auditing principles and reporting standards. The relationship of the field of public accounting to federal and state agencies.

ACC 681. INDEPENDENT RESEARCH (1-6)
PR: CI. Directed studies along lines of student's research.

AFRO-AMERICAN STUDIES

Faculty: J. Dudley, coordinator, McDonald, W. A. Smith.

AFA 130. INTRODUCTION TO AFRO-AMERICAN STUDIES (4)
Fundamental perspectives on the nature and meaning of the Afro-American experience and the role of Afro-American Studies in articulating major problems in American and world society.

AFA 261-262. AFRO-AMERICAN HISTORY (4, 4)
PR: AFA 130 or CC. A survey of the Afro-American history in Western Hemisphere. Emphasis on the experience in North America (AFA 261: 1493-1863; AFA 362: 1863 to present).

AFA 302. SOCIAL INSTITUTIONS AND THE GHETTO (4)
PR: AFA 130 or CC. A study of social institutions as they relate to the American Black ghetto, with emphasis on social systems operating within and on the ghetto.

AFA 310. BLACK AMERICANS IN THE ECONOMIC PROCESS (4)
PR: AFA 130 or CC. Brief economic history of Black America emphasizing the impact of racial discrimination and evaluating proposals for improvement as they apply to Black Americans and other minority groups.

AFA 410. CONTEMPORARY BLACK PHILOSOPHY (4)
PR: AFA 13 or CC. Major themes and participants in the Black liberation movement since 1950.

AFA 481. RESEARCH AND FIELD STUDIES (1-4)
PR: AFA 130 or CC. Required of all senior majors. A course linking the study

pursued by the student with research and work projects in the Tampa Black community.

AFA 483. DIRECTED READINGS (1-4)
PR: AFA 130 or CC. Independent readings in a particular area of Afro-American Studies, selected by student and instructor.

AFA 491. SENIOR SEMINAR (4)
PR: AFA 130 or CC. In-depth study of a particular topic in the area of Afro-American Studies. Individual research by students required.

AMERICAN STUDIES

Faculty: H. M. Robertson, chairman; D. Harkness, Moore, W. Morgan O'Hara, E. Stanton, Warner.

AMS 301. INTRODUCTION TO AMERICAN CIVILIZATION (5)
Integration of major aspects of American life between 1898 and 1914. Should be taken the first term a student becomes an American Studies major. Elective for non-majors.

AMS 311. THE COLONIAL PERIOD (5)
Puritan heritage: The pattern of American culture as revealed through an examination of selected writings and pertinent slides and recordings dealing with the art, architecture and music of the period. Elective for non-majors.

AMS 312. THE AGRARIAN MYTH (5)
Frontier heritage: The pattern of American culture as revealed through an examination of selected writings and other pertinent materials dealing with American faith and the American frontier environment (the land, city, machine). Elective for non-majors.

AMS 313. REGIONALISM, NATIONALISM, INTERNATIONALISM (5)
Selected writing and other pertinent material are used to examine the relationships between nationalism and internationalism with a view toward understanding America's development toward political and cultural maturity. Elective for non-majors.

AMS 383. SELECTED TOPICS IN AMERICAN STUDIES (4)
Offerings to include The American Environment; Eminent Ameicans; The American City: Past, Present and Future; The American Dream: Reality and Myth.

AMS 481. INDIVIDUAL RESEARCH (1-5)
The content of the course will be goverened by student demand and instructor's interest. Instructor's approval required prior to registration.

AMS 483. SELECTED TOPICS IN AMERICAN STUDIES (4)
Offerings to include Cultural Darwinism; Eminent Americans; The American City: Past, Present and Future; The American Dream: Reality and Myth.

AMS 491, 492. SENIOR SEMINARS IN AMERICAN STUDIES (4, 4)
Intensive study of masterpieces representative of several aspects of American culture.

AMS 493. VIOLENCE IN THE U.S.A. FROM THE REVOLUTION TO THE PRESENT (4)

ANTHROPOLOGY

Faculty: Grange, chairman; Frazier, Kessler, Kushner, Mudgett, Stout, R. Waterman, J. R. Williams.

ANT 201. INTRODUCTION TO ANTHROPOLOGY (4)
A general survey of anthropology emphasizing basic concepts, outlining the development of the field and illustrating current problems and applications.

ANT 202. HUMAN ORIGINS (4)
PR: ANT 201. A study of human biological and cultural origins with emphasis on human evolution and paleolithic archaeology.

ANT 203. SOCIAL ANTHROPOLOGY (4)
PR: ANT 201. A study of the elements of functioning cultures, including kinship systems, patterns of marriage, social and political structure and economic organization.

ANT 302. ETHNOLOGY (4)
PR: ANT 201-202-203. A survey of cultures of the world using the culture area concept and/or comparative analysis to illustrate cultural distributions and levels of socio-cultural complexity.

ANT 303. REGIONAL ANTHROPOLOGY (3-6)
PR: ANT 201-202-203. A survey of cultures and anthropological problems in a limited area or region. May be repeated as topics vary. (1) Indians of North America (2) Cultures of Africa (3) Cultures of the Pacific (4) Indians of Latin America (5) Specified areas such as Asia, Southestern U.S. or Florida depending on current interest and staff.

ANT 311. PHYSICAL ANTHROPOLOGY (4)
PR: 201-202-203. An advanced course in the scope and methods of physical anthropology with emphasis on current research topics.

ANT 313. LANGUAGE AND CULTURE (4)
PR: ANT 201-202-203. A review of the scope and methods of anthropological linguistics and the role of language in human behavior and cultural development.

ANT 325. ARCHAEOLOGY AND CIVILIZATION (4)
PR: ANT 201-202-203. An examination of the archaeological and ethnological data and theory concerning the development of food producing cultures and complex societies.

ANT 403. HISTORY OF ANTHROPOLOGICAL THEORY (4)
PR: ANT 201-202-203. Intensive reading of classics in the development of anthropological thought, and periodic seminar discussion and analysis.

ANT 411. METHODS IN ANTHROPOLOGY (3-6)
PR: ANT 201-202-203; and CI. Study and application of a selected field or laboratory method in anthropology. Prerequisites beyond ANT 201-202-203 will depend on area of study and will be determined by consultation with instructor in advance of registration. May be repeated as topics vary. (1) Archaeological Field Methods (2) Laboratory Methods in Archaeology (3) Laboratory Methods in Physical Anthropology (4) Field Methods in Cultural Anthropology (5) Etc., as specified.

ANT 415. ACCULTURATION AND CULTURE CHANGE (4)
PR: ANT 201-202-203. A study of theories of culture change and a consideration of the role of anthropologist in applied or action anthropology.

ANT 423. PROBLEMS IN NEW WORLD ARCHAEOLOGY (3-5)
PR: ANT 201-202-203. A general review of new world archaeology or detailed consideration of the archaeology of a specified area or time period in North or South America. May be repeated as topics vary.

ANT 461. THE COMMUNITY IN ANTHROPOLOGICAL PERSPECTIVE (4)
PR: ANT 201-202-203. The anthropological approach to the analysis and study of modern communities and peasant societies.

ANT 471. SPECIAL TOPICS IN ANTHROPOLOGY (2-6)
PR: ANT 201-202-203. A detailed study of current knowledge and problems in an area of topical interest such as ethnomusicology, primitive religion, or cultural ecology. May be repeated as topics vary.

ANT 491. SENIOR SEMINAR IN ANTHROPOLOGY (4)
PR: Senior Standing with Major in Anthropology, or equivalent. A seminar approach to the integration of the fields of anthropology. Designed to help the student refocus and come to a better understanding of the nature of anthropology.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ANT 501. CULTURE AND PERSONALITY (4)
PR: ANT 201-202-203 or CI. An intensive examination of the development of psychological anthropology and consideration of various theories concerning the relationship between personality and culture.

ANT 581. INDIVIDUAL RESEARCH (3-6)
PR: 24 hours in Anthropology or CI. Individual guidance in a selected research project.

ANT 585. DIRECTED READINGS (1-6)
PR: 24 hours in Anthropology or CI. Individual guidance in concentrated reading on a selected topic in anthropology.

FOR GRADUATE STUDENTS ONLY

ANT 601. ANTHROPOLOGY TODAY (4)
PR: CI. A graduate level survey of contemporary anthropology primarily intended for graduate students in Social Science Education.

ART

See VISUAL ARTS

ASTRONOMY

Faculty: Eichhorn-von Wurmb, chairman; Devinney, J. Hunter, Sofia, C. A. Williams, R. E. Wilson.

AST 203. DESCRIPTIVE ASTRONOMY I (5)
Aspects of the sky, the solar system. A nonmathematical course for those who are mainly interested in a qualitative treatment of the ideas about the physical universe. No credits for Astronomy majors.

AST 204. DESCRIPTIVE ASTRONOMY II (5)
The stars, the universe. A nonmathematical course for those who are mainly interested in a qualitative treatment of the ideas about the physical universe.
No credit for Astronomy majors.

AST 301. INTRODUCTORY ASTRONOMY (5)
PR: MTH 101. Aspects of the sky, the earth's motion and time-keeping, the moon, eclipses, astronomical instruments, motions and physical features of planets, comets and satellites.

AST 302. INTRODUCTORY ASTRONOMY (5)
PR: AST 301 or CI. The starts, stellar atmosphere and interiors, interstellar matter, the local and exterior galaxies, cosmology.

AST 351. HISTORY OF THE SCIENCE OF ASTRONOMY (5)
To familiarize seriously interested students with the history of Astronomy and the influence of this discipline of the development of human knowledge.

AST 361. ASTRONOMICAL OBSERVING AND MEASURING (1-3)
PR: AST 301 and 302 or CI. Actual measurements at the telescope and in the laboratory; evaluation of the data. May be repeated up to three credit hours.

AST 371. CONTEMPORARY THINKING IN ASTRONOMY (for non-specialists) (5)
PR: Junior or senior standing or CI. Current concepts of astronomy and space science of general interests; background facts; artificial satellites, space probes; surface conditions of planets and evolution of the stars; cosmology.

AST 413. GEOMETRY AND KINEMATICS OF THE UNIVERSE (4)
PR: AST 302 and MTH 304. Astronomical coordinate systems and their mutual relationships, navigation, time.

AST 443. STELLAR ASTROPHYSICS (5)
PR: AST 302 or CI, MTH 303. The physical characteristics of stars, their measurement, and their distribution. Analysis of stellar radiation. Double stars, associations, clusters, galaxies.

AST 481. UNDERGRADUATE RESEARCH (1-6)
PR: Senior or advanced junior standing and CI. Participation in professional research with a view to publication of results. (S/U grade only.)

AST 491. ASTRONOMY SEMINAR (1)
PR: Senior or advanced junior standing. May be repeated twice. (S/U grade only.)

FOR SENIOR LEVEL AND GRADUATE STUDENTS

AST 521. INTRODUCTION TO CELESTIAL MECHANICS (5)
PR: AST 302, MTH 305 and some knowledge of differential equations, or CI. The two-body problem, artificial satellites, elements of perturbation theory.

AST 522. BINARY STARS (4)
PR: AST 302 or CI, MTH 305. Principles used to find the properties of astrometric, eclipsing, spectroscopic and visual binaries.

AST 533. STELLAR CONSTITUTION AND EVOLUTION (4)
PR: AST 443 or CI, PHY 405. CR: MTH 405. Internal constitution of stars, physics of gas spheres, energy generation in stars, theories of stellar evolution.

AST 536. INTRODUCTION TO RADIO ASTRONOMY (4)
PR: AST 302 or CI, MTH 303. Radio telescopes: principles and applications. Main results in planetary, solar, galactic and extra-galactic radio-astronomy. Radio-galaxies and quasars.

AST 583. SELECTED TOPICS IN ASTRONOMY (1-6)
PR: Senior or advanced junior standing or CI. Intensive coverage of special topics to suit needs of advanced students.

FOR GRADUATE STUDENTS ONLY

AST 611. POSITIONAL ASTRONOMY (6)
PR: AST 413 or CI. The accurate determination of relative and absolute star positions and related problems.

AST 621. CELESTIAL MECHANICS (6)
PR: AST 521 or CI. Dynamics of the planetary system, space flight, theory of artificial satellites.

AST 631. STELLAR ATMOSPHERES (4)
PR: AST 443 & MTH 406 or CI. Basic observational data. Thermodynamics of the gaseous state. Elements of spectroscopy. The transfer equation (continuum and lines). The problem of calculation of atmospheres.

AST 661. PHOTOMETRY (4)
PR: AST 302 or CI. MTH 305. Theoretical, observational and instrumental concepts required in astronomical photometry.

AST 663. STATISTICAL REDUCTION OF OBSERVATIONS (6)
PR: MTH 323, 445, or equivalents or CI. The theory of statistical adjustments (least squares) and applications.

AST 681. GRADUATE RESEARCH (1-15)
PR: CI.

AST 683. SELECTED TOPICS IN ASTRONOMY (1-6)
PR: CI.

AST 688. RECENT ADVANCES IN ASTRONOMY WITH EMPHASIS ON THEIR IMPACT ON COLLEGE-LEVEL COURSES (3-6)
Not applicable toward thesis degree requirements. A course designed to consider and study the recent developments of Astronomy, especially those developments that

have an effect on altering the basic concepts and ideas of the field and imply a change in the presentation of introductory material in the field. (S/U grade only.)

AST 689. DIRECTED TEACHING (3-9)
Not applicable toward thesis degree requirements. A formalized, structured activity wherein a faculty member, by discussion and assignments, considers the principles, rationale, and modus operandi of elementary college courses. Designed to train teaching assistants and to provide help and training to those graduate students who plan to follow a college teaching profession. (S/U grade only.)

AST 691. GRADUATE SEMINAR (2)
PR: CI.

AST 699. MASTER'S THESIS (1-9)
PR: CI. (S/U Grade only.)

BASIC STUDIES

Faculty:

American Idea: Arnade, acting chairman; P. Adams, S. Adams, J. Bell, D. Harkness, M. LaGodna, J. Ochshorn, J. Palm, T. Reilly, W. A. Smith, R. A. Warner.

Behavioral Science: Vega, chairman; J. Benton, G. Best, T. Blau, R. Brown, B. Burg, J. Cashon, E. Dickey, F. Dickman, L. Foutz, V. Gadarian, J. Garcia, T. Geis, A. Gessner, L. Guest, A. Gilmore, M. Hardy, J. Hastings, H. Hill, C. Kasworm, M. McCormick, J. Newcomb, R. Powell, L. Ricker, S. Saxon, D. Sprehe, N. Taylor, J. Vance, P. Waterman, R. Whitney, J. Williams, A. Wilson.

Biological Science: Ray, chairman; Latina, Merner, Nelson, G. Robinson, Sumner, Tipton.

Freshman English: Parrish, chairman; Beauchamp, Bentley, Broer, Ceconi, Chisnell, Collins, W. Davis, Deats, R. Dietrich, Everett, Fabry, Figg. Fiore, F. French, Gause, Hall, Harmon, Hartley, Hatcher, Heim, Henley, Hirshberg, Iorio, Kaufmann, L. Keith, Mason, Moore, Morris, Oschshorn, O'Hara, Palmer, Parker, H. Popovich, Reader, Ross, Rubin, Sanders, Sanderson, Scheuerle (leave of absence), E. Smith (leave of absence), Valentine, Walther, Wyly, Zbar, Zetler.

Functional Mathematics: Rose, chairman; Bello, Britton, Cleaver, Hart, S-Y. Lin, Lukenbach, McWaters, J. G. Reed, Shershin, Soniat, W. Williams.

Humanities: Kiefer, chairman; T. Burns, Conway, C. Cooper, Gowen, Hoffman, Juergensen, Kashdin, Koenig, MacKay, McRae, Rutenberg, Shackson, Spillane, Watkins, Zylstra.

Physical Science: J. H. Robinson, chairman; Berkley, J. Carr, Boulware, F. Dudley, Kruschwitz.

CBS 100. ENGLISH AS A SECOND LANGUAGE—COMPOSITION (3)
Practice and drill in basic English sentence patterns; emphasis is on writing, punctuation, vocabulary, and idiom.

CBS 101, 102. FRESHMAN ENGLISH (4, 4)
Instruction and practice in the skills of writing and reading. CBS 101 is prerequisite to CBS 102.

CBS 109, 110. FUNCTIONAL MATHEMATICS (5,5)
Designed as a terminal course for general cultural purposes, as a foundation for further study of mathematics and science, and as a preparatory course for prospective elementary school teachers.

CBS 111-124 (5, 5), CBS 211-224 (4, 4) BEGINNING AND INTERMEDIATE MODERN LANGUAGES

FIRST YEAR		*SECOND YEAR*
CBS 111-112	FRENCH	CBS 211-212
CBS 114-115	GERMAN	CBS 214-215
CBS 117-118	RUSSIAN	CBS 217-218
CBS 120 121	SPANISH	CBS 220-221
CBS 123-124	ITALIAN	CBS 223-224

Note: CLS 101-102-103 (Elementary Latin) may be substituted for first-year Beginning Modern Language; CLS 201 plus two out of CLS 202, 203, 301, 302, 303, for second-year Intermediate Modern Language.

Portugese 326-327 or Language 383-483 may be substituted for second-year Intermediate Modern Language.

CBS 111 to 124. BEGINNING MODERN LANGUAGES I & II (5,5)
Initiate development of speaking, understanding, reading, and writing of the modern foreign language at the elementary level.

CBS 211 to 224. INTERMEDIATE MODERN LANGUAGES I & II (4, 4)
Continue development of skills at the intermediate level, including the grammatical framework of the language.

CBS 201, 202, 203. BEHAVIORAL SCIENCE (3, 3, 3)
Draws on information from behavioral sciences (human biology, psychology, anthropology, sociology, and philosophy) to demonstrate how human behavior develops and means by which personal, social, and ethical problems are dealt with. The third quarter will deal with special topics selected for study in depth by the student.

CBS 205, 255, 206, 256, 207, 257. PROBLEMS IN BIOLOGICAL SCIENCE (3,3,3)
The application of basic biological principles to relevant problems and topics such as: 205-Foods, drugs and medicine, 255-Sex, reproduction and population, 206-Genes and people, 256-Evolution, 207-Environment, 257-Contemporary books. Elect any three of the 3-credit hour options.

CBS 208-209-210. EXPLORATIONS IN PHYSICAL SCIENCE (3, 3,3)
The development of great scientific ideas, their historical and contemporary significance. Selected topics of astronomy, chemistry, earth science, physics, and philosophy of science—approached via textbook and popular readings. lec-lab-disc.

CBS 283. SELECTED TOPICS IN BASIC STUDIES (1-5)
PR: CI. The subject matter covered in each topic will depend upon the interest of the faculty member. Some may be experimental courses in Basic Studies; others may be offered under the direction of a visiting faculty member.

CBS 301-302. THE AMERICAN IDEA (5,4)
Uses history, political science, sociology and economics to focus on major ideas characterizing American society, on our relations with other nations, and on contemporary, domestic and international problems.

CBS 315-316-317-308. THE HUMANITIES (5, 5, 5, 4)
PR: CBS 101-102 and sophomore standing. Analysis of works in the visual arts, music, theatre, film, literature, and philosophy. Workshops for creative experience.

CBS 311-312-313. HUMANITIES AND HUMANE VALUES (5,5,5)
PR: CBS requirement in humanities or CI. Masterpieces of music, visual arts, theatre, literature, and philosophy in varying cultural and historical situations.

CBS 395. OVERSEAS STUDY (1-9)
A program of individual or group research in a foreign country. Selection of the student, his preparation for the study, and subsequent evaluation to be supervised by a faculty committee.

CBS 400. COOPERATIVE EDUCATION RESEARCH REPORT (1-5)
PR: COE 171. A course designed specifically for Cooperative Education students in which the student pursues a research project dealing with his Cooperative Education assignment and his major area of professional interest. (This course may be used with any other 3-letter prefix if approved by the chairman and dean concerned.)

CBS 401. SENIOR SEMINAR: FREEDOM AND RESPONSIBILITY (3)
Required of all seniors. Contemporary issues affecting social and personal values. Visiting lecturers, readings and discussions interrelating the behavioral natural and social sciences and the humanities. Designed to focus the university education upon contemporary problems.

CBS 403-404. THE UNIVERSE OF MAN (3,3)
A search for the universals of human life today; the nature of man, the world

community, human needs and values, available instruments of science and technology, and the limiting facts and forces.

CBS 405-406-407. BEHAVIORAL SCIENCE (3,3,3)
A comprehensive analysis and evaluation of man's behavior. Emphasis on understanding of mechanisms involved in individual and social behavior, along with consideration of social and ethical problems related to means for controlling behavior. Laboratory experience will be provided on special research topics.

CBS 409-410. SCIENCE AND HUMAN LIFE (5,5)
The role of science in society; the manner in which science is organized, how it operates, and its harmonious and conflicting relationships with other fields of knowledge.

CBS 483. SELECTED TOPICS IN BASIC STUDIES (1-5)
PR: CI. The subject matter covered in each topic will depend upon the interest of the faculty member. Some may be experimental courses in Basic Studies; others may be offered under the direction of a visiting faculty member.

BIOLOGY

(See also Botany and Zoology)

Faculty; Silver, acting chairman; Alvarez, Bachmann, Betz, Briggs, Brown, Burch, Cowell, Dawes, Eilers, Friedl, Krivanek, Lawrence, Linton, Long, Mansell, McClung, McDiarmid, Meyerriecks, Simon, Snyder, Swihart, Woolfenden.
Adjunct: Binford, Humm, Layne, Wagner-Merner.

BIO 201. FUNDAMENTALS OF BIOLOGY I (4)
A phylogenetic survey of the major animal groups accompanied by dissection of selected types. lec-lab. Qtr. I.

BIO 202. FUNDAMENTALS OF BIOLOGY II (4)
An introduction to plant science; fundamentals of plant biology. lec-lab. Qtr. II.

BIO 203. FUNDAMENTALS OF BIOLOGY III (4)
Origin and early evolution of life; Mendelian and population genetics; elementary ecology. lec. Qtr. III.

BIO 315. MICROTECHNIQUE (5)
PR: BIO 201-203. Theory and practice of tissue fixation, imbedding, sectioning, and staining; chromosomal squash preparations; nuclear isolation techniques; photomicrography. lec-lab. (formerly BOT 315)

BIO 331. GENERAL GENETICS (5)
PR: BIO 201-203. Introduction to genetics including aspects of Mendelian, molecular, and population concepts. lec-lab. Qtr. I, III, IV.

BIO 345. MAN'S BIOLOGICAL ENVIRONMENT (4)
PR: BIO 201-203. A biological consideration of man's deteriorating relationship with his environment. Emphasis on pollution, pesticides, and population. Qtr. II.

BIO 351. INTODUCTION TO MICROBIOLOGY (5)
PR: BIO 201-203. Introduction to the biology of microorganisms; structure and physiology of bacteria, algae, viruses, rickettsiae, and protozoa; basic lab methods in microbiology, lec-lab. Qtr. I, II, III, and IV. (formerly BOT 351)

BIO 372. MAN, MICROBE AND MOLECULE (for non-specialists) (3)
PR: None. Origin of life, control of diseases, environmental quality and the use of microorganisms as tools in searching for molecular explanations of living phenomena. Qtr. II and IV (formerly BOT 372)

BIO 421. CELL PHYSIOLOGY (5)
PR: BIO 331 and CHM 351 or 335. Physico-chemical properties of cells, enzyme function, intermediary metabolism, photosynthesis, function of nerves and muscles. lec-lab. Qtr. II (formerly ZOO 421)

BIO 422. DEVELOPMENTAL BIOLOGY (5)
PR: BIO 421 or BIO 510. Structural and functional events involved in differentiation and morphogenesis. lec-lab. Qtr. III. (formerly ZOO 422)

BIO 445. PRINCIPLES OF ECOLOGY (4)
PR: BIO 201-203 or CBS 205-207. An introduction to the basic principles and concepts of ecology at the ecosystem, community, and population level of organization. lec-disc. Qtr. I and IV.

BIO 451. APPLIED BACTERIOLOGY (5)
PR: BOT 351. A study of the applications of microbiology to industry, agriculture, medicine, and sanitary engineering. lec-lab. Qtr. IV (formerly BOT 451)

BIO 465. ORGANIC EVOLUTION (4)
PR: BIO 331, or CI. An introduction to modern evolutionary theory. Lectures on population genetics, adaptations, speciation theory, phylogeny, human evolution, and related areas. Qtr. I (even-numbered years).

BIO 485. RESEARCH METHODS IN BIOLOGY I (2)
PR: CI. A laboratory course for advanced students to become acquainted with contemporary biological research instrumentation and techniques.

BIO 486. RESEARCH METHODS IN BIOLOGY II (2)
PR: CI. See BIO 485.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

BIO 510. CYTOLOGY (4)
PR: BIO 201-203. Survey of the structure and function of cytoplasmic and nuclear components of plant and animal cells. lec-lab. (formerly BOT 510)

BIO 515. SUBCELLULAR CYTOLOGY (4)
PR: BIO 201-203. A review of biophysical techniques used in biology to include an introduction to X-ray diffraction, bright field, phase, ultraviolet, interference, and electron microscopy. The course will consist of three hours of lecture and one three-hour lab for demonstration of techniques. lec-lab. (formerly BOT 515)

BIO 518. MEDICAL MYCOLOGY (5)
PR: BIOL 351 or CI. A survey of the yeasts, molds and actinomycetes most likely to be encountered by the bacteriologists, with special emphasis on the forms pathogenic for man. lec-lab. Qtr. I (formerly BOT 518)

BIO 532. MOLECULAR GENETICS (4)
PR: BIO 331. Detailed examination of DNA, RNA, and protein synthesis; the effects of mutations on proteins; cellular control; selected aspects of viral, bacterial, and fungal genetics. lec-lab. Qtr. II (formerly BOT 532)

BIO 552. ADVANCED BACTERIOLOGY (5)
PR: BIO 351. Ultrastructure, growth, metabolism, genetics, and ecology of the bacteria and related procaryotes. lec-lab. Qtr. III (formerly BOT 552)

BIO 553. DETERMINATIVE BACTERIOLOGY (5)
PR: BIO 351 or equivalent; CHM 331-336 or equivalent. Survey of bacterial classification; detailed examinations of bacteria important to man in agriculture, in industry, and as pathogens. lec-lab. Qtr. II (formerly BOT 553)

BIO 557. VIROLOGY (5)
PR: BIO 351 or equivalent and CI. The biology of viruses associated with plants, animals, and bacteria will be considered; the nature of viruses, mechanisms of viral pathogenesis, and interactions with host cells. Qtr. I lec-lab. (formerly BOT 557)

BIO 583. SELECTED TOPICS IN MICROBIOLOGY (1-4)
PR: CI. Each topic is a course in directed study under supervision of a faculty member.

FOR GRADUATE STUDENTS ONLY

BIO 601. HISTORY OF BIOLOGY (3)
PR: CI. The historical development of biology with emphasis on the origin of important theories and principles.

BIO 609. BIO CHEMICAL SYSTEMATICS (4)
PR: CI. A research oriented course on the acquisition and use of biochemical information in animal systematics. lec-lab. (formerly ZOO 609)

BIO 610. CYTOCHEMISTRY (4)
PR: BIO 201-203, BIO 315 and CI. Theory and practice of microscopic and quantitative cyto-histochemistry. Intracellular localization methods for total proteins, nucleic acids, insoluble polysaccharides and enzymes. Discussions and demonstrations of optical quantitative methods based on polarizing and interference microscopy, and microspectrophotometry. 3 hours lec and 3 hours lab. (formerly BOT 610)

BIO 611. EXPERIMENTAL EMBRYOLOGY (4)
PR: BIO 421-422 and CI. Lectures, laboratories, readings and discussions relating to contemporary advances in the area of biochemistry of development. Experimental techniques will be studied. (formerly ZOO 611)

BIO 615. ULTRASTRUCTURE TECHNIQUES IN ELECTRON MICROSCOPY (6)
PR: BIO 201-203, BIO 515 or CI. Discussion of theory and techniques in electron microscopy. Emphasis on preparation of biological specimens, electron microscopic optics and use of the electron microscope. lec-lab. (formerly BOT 615)

BIO 616. BIOMETRY (4)
PR: MTH 211-213 or CI. An introduction to statistical procedures for research in the biological sciences. Experimental design, analysis of data and presentation of results are emphasized. (formerly ZOO 616)

BIO 645. MAN VERSUS HIS ENVIRONMENT (4)
PR: CI. Current and future biological problems facing mankind. Topics include pollution, biocides, the population explosion, eugenics, and food for the future.

BIO 652. BACTERIAL PHYSIOLOGY (5)
PR: BIO 351 or equivalent, CHM 331-336, or CI. Bacterial structure, growth, death, metabolism, and genetic systems. Laboratory emphasis on quantitative and chemical methods for study of bacteria. lec-lab. (formerly BOT 652)

BIO 654. BACTERIAL GENETICS (3)
PR: BIO 331, BIO 351, BIO 652 or CI. A survey of the recombinational systems found among the bacteria and bacterial viruses with emphasis on the molecular mechanisms of gene transfer, replication and expression and on the significance of these systems for our understanding of cellular functions. lec. 3 hrs. per week. (formerly BOT 654)

BIO 655. IMMUNOLOGY (5)
PR: BIO 351 or equivalent, CHM 331-336 or equivalent. Discussion of the basic immune reaction, nature of antigenicity; basic immunological techniques and their use in biological research and the medical sciences. (formerly BOT 655)

BIO 665. ADVANCED ORGANIC EVOLUTION (3)
PR: BIO 331; BIO 465 or equivalent, and CI. Advances in organic evolution with emphasis on speciation theory, phylogeny, behavior, and human evolution.

BIO 683. SELECTED TOPICS IN MICROBIOLOGY (1-4)
PR: CI. (S/U grade only.)

BIO 688. RECENT ADVANCES IN MICROBIOLOGY WITH EMPHASIS ON THEIR IMPACT ON COLLEGE-LEVEL COURSES (3-6)
Credit not applicable toward thesis degree requirements.
PR: Graduate Standing. A course designed to consider and study the recent developments of a given field, especially those developments that have an effect on altering the basic concepts and ideas of the field and imply a change in the presentation of introductory material in the field. (S/U grade only)

BIO 689. DIRECTED TEACHING (3-9)
Credit not applicable towards thesis degree requirements.
PR: Graduate Standing. Supervision of the teaching of graduate teaching assistants in elementary and/or laboratory courses. (S/U grade only.)

BIO 691. GRADUATE SEMINAR (1)
(S/U grade only.)

BIO 699. MASTER'S THESIS (1-15)
PR: CI. (S/U grade only.)
BIO 781. GRADUATE RESEARCH (1-15)
PR: CI. Directed research on selected topics. May be repeated.
BIO 783. SELECTED TOPICS IN MICROBIOLOGY (1-4)
PR: CI. (S/U grade only.)
BIO 799. PH.D. DISSERTATION (1-12)
PR: CI. May be repeated to a maximum of 12 credits.

BOTANY

(See also Biology and Zoology)

BOT 302. EVOLUTIONARY SURVEY OF THE PLANT KINGDOM (5)
PR: BIO 201-203. The major plant divisions, including the algae, fungi, mosses, liverworts, ferns and fern allies, and seed plants considered from an evolutionary perspective. lec-lab.
BOT 311. SYSTEMATIC BOTANY (5)
PR: BIO 201-203 or CI. Identification and classification of the more interesting vascular plants of Florida; angiosperm evolution; principles of taxonomy. Conducted largely in the field.
BOT 313. HORTICULTURAL BOTANY (3)
PR: Course in botany, biology, or CI. Application of principles of botany to give an understanding of basic horticultural operations; seed sowing, dormancy, growth requirements, vegetative propagation, pruning, and related problems. lec-lab.
BOT 314. FIELD BOTANY (3)
PR: BIO 201-203 or CI. Identification and classification of native and naturalized flowering plants of Florida including historical, climatic and floristic aspects of plant communities. Conducted largely in the field. lec-lab.
BOT 371. PLANTS AND MAN (3) (for non-specialists)
PR: Junior or Senior Standing or CI. The relation of plants to human history and contemporary life. Botanical and economic aspects of plants used as sources of foods, drugs, and other products of importance in everyday life. Origins of cultivated plants.
BOT 412. INTRODUCTION TO TROPICAL BOTANY (3)
PR: BIO 201-203. Natural history of plants in the tropics with illustrations of broad principles of their evolution, taxonomy, ecology, and functional morphology. lec-lab.
BOT 417. MYCOLOGY (5)
PR: BIO 201-203. A survey of the fungi with emphasis on their taxonomy, morphology, physiology, and economic importance. lec-lab.
BOT 419. PLANT ANATOMY (5)
PR: BIO 201-203. Comparative studies of tissue and organ systems of fossil and present-day vascular plants. Functional and phylogenetic aspects stressed. lec-lab.
BOT 421. PLANT PHYSIOLOGY (5)
PR: BIO 201-203, CHM 331-336 or CHM 303, or CI. Fundamental activities of plants; absorption, translocation, transpiration, metabolism, growth, and related phenomena. lec-lab.
BOT 481. UNDERGRADUATE RESEARCH (1-6)
PR: Senior standing and CI. Individual investigations with faculty supervision. (S/U Grade only)
BOT 491. SEMINAR IN BOTANY (1)
PR: Senior or advanced junior standing and CI. May be repeated once. (S/U Grade only)

FOR SENIOR LEVEL AND GRADUATE STUDENTS

BOT 511. TAXONOMY OF FLOWERING PLANTS (4)
PR: BOT 311 or CI. A phylogenetic study of Angiosperms; relationship of the

principal orders and families, problems of nomenclature, identification of specimens, comparisons of recent systems of classification, dissection of representative flower types. Field trips and lab work. lec-lab.

BOT 517. PHYSIOLOGY OF THE FUNGI (5)
PR: BOT 417, BIO 510 or CI. The metabolism, morphogenesis, and genetics of the fungi. lec-lab.

BOT 521. PHYSIOLOGY OF PLANT GROWTH AND DEVELOPMENT (3)
PR: BOT 421, BIO 201-203 and CI. A study of plant development with emphasis of the role of light and growth hormones on the process of flowering, fruit set, ripening, and senescence.

BOT 543. PHYCOLOGY (5)
PR: BOT 447 or equivalent. A detailed survey of the algae emphasizing both taxonomy and morphology of fresh and marine water forms; field and laboratory investigations including individual projects. lec-lab.

BOT 546. PLANT ECOLOGY (4)
PR: BIO 201-203, BIO 445 or CI. Distribution and nature of vegetation in relation to climatic, physiographic, edaphic and biotic factors; field investigations of subtropical Florida plant communities. lec-lab.

BOT 547. MARINE BOTANY (5)
PR: BIO 201-203, BIO 445 or CI. A field course in marine plants with emphasis on ecology and functional morphology. Field work will stress the ecological aspects of plants in a subtropical marine environment in Florida. lec-lab.

BOT 583. SELECTED TOPICS IN BOTANY (1-4)
PR: CC. Each topic is a course in directed study under supervision of a faculty member.

FOR GRADUATE STUDENTS ONLY

BOT 611. BIOSYSTEMATICS (4)
PR: BOT 311 or equivalent. Application of cytology, ecology, genetics, biochemistry, and morphological analyses to the study of evolution and classification of species of higher plants.

BOT 612. BIOLOGY OF TROPICAL PLANTS (3)
PR: BOT 412. Special topics in the systematics, morphology, physiology, genetics, and ecology of tropical plants with consideration of habitat diversity that leads to rich floras. lec.

BOT 613. LABORATORY IN TROPICAL PLANTS (2)
PR: Must be taken concurrently with BOT 612. Extended field trip to some area of the New World Tropics to examine major types of vegetation and gain familiarity with field techniques; research problem development. lab.*

BOT 621. PLANT METABOLISM LECTURE (3)
PR: BOT 421, CHM 336 or CI. A study of plant metabolism with emphasis on the biosynthetic pathways and their regulation.

BOT 622. PLANT METABOLISM LABORATORY (4)
PR: BOT 421, CHM 336 or CI. An intensive exposure to the methods used in experimenting with plant material.

BOT 681. GRADUATE RESEARCH (1-9)
PR: CI. (S/U Grade only.)

BOT 683. SELECTED TOPICS IN BOTANY (1-4)
PR: CC. (S/U Grade only.)

BOT 688. RECENT ADVANCES IN BOTANY WITH EMPHASIS ON THEIR IMPACT ON COLLEGE-LEVEL COURSES (3-6)
Credit not applicable toward thesis degree requirements.
PR: Graduate Standing. A course designed to consider and study the recent developments of a given field, especially those developments that have an effect on altering the basic concepts and ideas of the field and imply a change in the presentation of introductory material in the field. (S/U Grade only.)

BOT 691. GRADUATE SEMINAR (1)
(S/U Grade only.)

*Students will be required to pay travel expenses for field trip.

BOT 699. MASTER'S THESES (1-15)
PR: CI (S/U Grade only)
BOT 781. GRADUATE RESEARCH (1-9)
PR: CI. (S/U Grade only)
BOT 783. SELECTED TOPICS IN BOTANY (1-4)
PR: CC. (S/U Grade only)

CHEMISTRY

Faculty: Maybury, chairman; Akins, Ashford, Binford, Birke, Braman, Cory, J. Davis, R. Davis, J. Fernandez, Fernelius, Howell, Jurch, D. Martin, Monley, Olsen, T. Owen, Raber, Solomons, Stevens, Wenzinger, Whitaker, Wong, Worrell.

CHM 101. FOUNDATIONS OF UNIVERSITY CHEMISTRY (5)
Designed as a terminal course to survey modern chemistry, particularly for the student who has had no previous chemistry courses; and as preparation for CHM 211-213. Lec. Qtr. I, III, IV.
CHM 211. GENERAL CHEMISTRY I (4)
While there is no prerequisite, CHM 211 students are expected to have performed well in high school chemistry or to have satisfactorily completed CHM 101. Fundamentals of chemistry; mass and energy relationships in chemical and equilibrium, chemical kinetics, atomic and molecular structure, descriptive chemistry of selected elements. Lec-lab and discussion. Qtr. I, II, IV.
CHM 212. GENERAL CHEMISTRY II (4)
PR: CHM 211 or equivalent. Continuation of General Chemistry, lec-lab and discussion. Qtr. I, II, III.
CHM 213. GENERAL CHEMISTRY III (4)
PR: CHM 212 or equivalent. Continuation of General Chemistry, lec-lab and discussion. Qtr. I, III, IV.
CHM 301. ELEMENTARY INORGANIC CHEMISTRY (4)
PR: CHM 213 or equivalent. Fundamental inorganic chemistry principles. One-quarter course for non-chemistry majors. lec-lab. Qtr. IV.
CHM 305. ELEMENTARY PHYSICAL CHEMISTRY (5)
PR: CHM 213, 321. Fundamental physical chemistry principles. One-quarter course for non-chemistry majors. lec-lab. Qtr. III, IV.
CHM 311. INTERMEDIATE INORGANIC CHEMISTRY (5)
PR: CHM 213. Fundamental principles of inorganic chemistry. lec-lab. Qtr. II, IV.
CHM 321. ELEMENTARY ANALYTICAL CHEMISTRY (5)
PR: CHM 212, CR: CHM 213. Fundamentals of gravimetric, volumetric, and spectrophotometric analysis. lec-lab. Qtr. I, III, IV.
CHM 331-332. ORGANIC CHEMISTRY I (3:2)
PR: CHM 213. Fundamental principles of organic chemistry and lab. Lecture and lab must be taken concurrently. I, II.
CHM 333-334. ORGANIC CHEMISTRY II (3:2)
PR: CHM 331-332 or equivalent. Continuation of Organic Chemistry and lab. Lecture and lab must be taken concurrently. Qtr. II, III.
CHM 335-336. ORGANIC CHEMISTRY III (3:2)
PR: CHM 333-334 or equivalent. Continuation of Organic Chemistry and lab. Lecture and lab must be taken concurrently. Qtr. I, III, IV.
CHM 351. INTRODUCTORY BIOCHEMISTRY (4)
PR: CHM 333. Introduction to the chemistry and intermediary metabolism of biologically important substances. Lecture. Qtr. III, IV.
CHM 371. MODERN CHEMICAL SCIENCE (4)
An introduction to some of the major problems in chemistry, its relation to other sciences, and its relevance to contemporary culture. Designed for non-science majors. (May not be counted for credit toward a chemistry major.) Qtr. I, II, III, IV.

CHM 441. PHYSICAL CHEMISTRY I (4)
PR: CHM 321 and MTH 304. CR: PH 215 or 225. Thermodynamics, the states of matter, solutions. Lecture. Qtr. I, II.

CHM 442. PHYSICAL CHEMISTRY II (4)
PR: CHM 322, 441. Introduction to quantum mechanics and molecular spectroscopy. Lecture. Qtr. II, III.

CHM 443. PHYSICAL CHEMISTRY III (4)
PR: CHM 442. Electrochemistry, kinetic theory of gases, chemical kinetics, surface and nuclear chemistry. Lecture. Qtr. I, III, IV.

CHM 445. METHODS OF CHEMICAL INVESTIGATION I. ANALYTICAL-PHYSICAL (4)
PR: CHM 321, 335-6. CR: CHM 441. Theory and applications of instrumental methods in chemical research with emphasis on electrochemical techniques. lec-lab. Qtr. I, II.

CHEM 446. METHODS OF CHEMICAL INVESTIGATION II. ANALYTICAL-PHYSICAL (4)
PR: CHM 445. Continuation of CHM 445. Emphasis on spectroscopic techniques. lec-lab. Qtr. II, III.

CHM 447. METHODS OF CHEMICAL INVESTIGATION III. CHEMICAL SYSTEMS (3)
PR: CHM 446. Continuation of CHM 446. Emphasis on studies of chemical systems using a variety of techniques. lec-lab. Qtr. III, IV.

CHM 481. UNDERGRADUATE RESEARCH (1-6) (S/U grade only.)
PR: CI. Qtr. I-IV.

CHM 483. SELECTED TOPICS IN CHEMISTRY (1-6)
PR: CI. The course content will depend on the interest of faculty members and student demand.

CHM 491. CHEMISTRY SEMINAR (2) (S/U grade only.)
PR: Senior standing. Qtr. I-IV.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

CHM 511. ADVANCED INORGANIC CHEMISTRY (4)
PR: CHM 441 or CI. An advanced theoretical treatment of inorganic compounds. Lecture. Qtr. II.

CHM 521. INSTRUMENTAL ANALYSIS (4)
PR: CHM 322, 442. Theory and practice of instrumental methods. lec. lab. Qtr. I.

CHM 523. RADIOCHEMISTRY (4)
PR: CHM 321. Theory and applications of natural and induced radioactivity. Emphasis on the production, properties, measurement, and uses of radioactive tracers. Lec-lab. Qtr. III.

CHM 531. ADVANCED SYNTHETIC CHEMISTRY (4)
PR: CHM 333. A study of synthetic techniques from both the practical and the thearetical points of view. lec-lab.

CHM 532. INTERMEDIATE ORGANIC CHEMISTRY (4)
PR: CHM 335, 336 or equivalent. A study of stereochemistry, spectroscopy. Theories of bonding, acid-base chemistry, and their application to the understanding of organic reactions. Lecture.

CHM 541. CHEMICAL THERMODYNAMICS (4)
PR: CHM 443 or CI. The applications of thermodynamic theory to the study of chemical systems with emphasis on the energetics of reactions and chemical equilibria. Lecture.

CHM 542. APPLICATIONS IN PHYSICAL CHEMISTRY (4)
PR: CHM 443. Applications of chemical theory to chemical systems with emphasis on the thermodynamics of real systems, molecular spectroscopy, and the chemical kinetics of complex systems. lec-disc. Qtr. I.

CHM 551. BIOCHEMISTRY I (4)
PR: CHM 335, 6. The chemistry and intermediary metabolism of biologically

important substances, including carbohydrates, proteins, enzymes, vitamins, and metabolic intermediates.
Recommended for chemistry and biology majors. Lec. Qtr. I.

CHM 552. BIOCHEMISTRY II (4)
PR: CHM 551. Continuation of Biochemistry I. Lec. Qtr. II.

CHM 553. BIOCHEMISTRY III (4)
PR: CHM 552. Continuation of Biochemistry. Lec. Qtr. III.

CHM 554. TECHNIQUES IN BIOCHEMISTRY (2)
PR: CHM 551. Biochemistry laboratory with emphasis on modern techniques for use in biochemical research. Qtr. III.

CHM 583. SELECTED TOPICS IN CHEMISTRY (1-6)
PR: CC, The following courses are representatives of those that are taught under this title: Natural Products, Stereochemistry, Reactive intermediates, Photochemistry, instrumental Electronics, Advanced Lab Techniques, Heterocyclic Chemistry, etc.

FOR GRADUATE STUDENTS ONLY

CHM 611. STRUCTURAL INORGANIC CHEMISTRY (4)
PR: CHM 511 or CI. Modern theories of bonding and structure of inorganic compounds, including coordination theory, stereochemistry, solution equilibria, kinetics, mechanisms of reactions, and use of physical and chemical methods. Lecture. Qtr. III.

CHM 613. CHEMISTRY OF THE LESS FAMILIAR ELEMENTS (4)
PR: CI. An integrated treatment of the conceptual and factual aspects of the traditionally less familiar elements, including noble-gas elements, unfamiliar nonmetals, alkali and alkaline-earth metals, and the transition elements. Lec. Qtr. II.

CHM 621. ADVANCED ANALYTICAL CHEMISTRY (4)
PR: CI. A study of complete analytical process, including sample handling, separations, the analysis step, and statistical interpretation of data. Emphasis placed on separations and statistics. Lecture. Qtr. II.

CHM 623. ELECTROCHEMISTRY (4)
PR: CHM 521. Introduction to the theory of ionic solutions and electrode processes. Theory and applications of electrochemical measurements. Lecture. Qtr. III.

CHM 625. ADVANCED ANALYTICAL TOPICS (4)
PR: CI. Selected topics in analytical chemistry. Offerings include radiochemistry (emphasizing radiotracers in research and analysis), chemical spectroscopy, (including both emission and absorption), and quantitative organic analysis. (Lecture; some topics may have lab)

CHM 631. ADVANCED ORGANIC CHEMISTRY I. NATURAL PRODUCTS (4)
PR: CHM 532 or CI. A study of any of several of the following topics: terpenes, steroids, vitamins, alkaloids, porphyrins, purine, and antibiotics. Qtr. II.

CHM 632. ADVANCED ORGANIC CHEMISTRY II. PHYSICAL-ORGANIC (4)
PR: CHM 532. A study of organic reaction mechanisms emphasizing the interpretation of experimental data. Lecture. Qtr. III.

CHM 633. ADVANCED ORGANIC CHEMISTRY III. SYNTHESIS (4)
CR: CHM 532. Detailed consideration of modern synthetic methods. Lecture. Qtr. III.

CHM 634. ADVANCED ORGANIC CHEMISTRY IV. (4)
PR: CHM 532. The emphasis will vary from year to year.

CHM 641. STATISTICAL THERMODYNAMICS (4)
PR: CI. Application of statistical mechanics to thermodynamics, the relation of molecular structure to thermodynamic properties. Lecture. Qtr. IV.

CHM 643. QUANTUM CHEMISTRY I (4)
PR: CI. Introduction to elementary quantum mechanics. Atomic structure and spectra. Lecture. Qtr. III.

CHM 645. QUANTUM CHEMISTRY II (4)
PR: CHM 643. Applications of quantum mechanics to problems in chemistry; molecular structure and spectra. Lecture. Qtr. I.

CHM 647. CHEMICAL KINETICS (4)
PR: CI. Theory and methods for the study of reaction rates and the elucidation of reaction mechanisms. Lecture. Qtr. II.

CHM 651. ADVANCED BIOCHEMISTRY I. ENZYMES (4)
PR: CHM 553 or CI. A study of biochemical systems with emphasis on enzymes. Lecture. Qtr. I.

CHM 652. ADVANCED BIOCHEMISTRY II. PROTEIN AND NUCLEIC ACIDS (4)
PR: CHM 553 or CI. A study of biochemical systems with emphasis on proteins and nucleic acids. Lecture. Qtr. II.

CHM 653. ADVANCED BIOCHEMISTRY III. BIOORGANIC MECHANISMS (4)
PR: CHM 553 or CI. A study of biochemical systems with emphasis on mechanisms of biological reaction. Lecture. Qtr. III.

CHM 654. ADVANCED BIOCHEMISTRY IV. BIOPHYSICAL CHEMISTRY (4)
PR: CHM 553 or CI. A study of biochemical systems with emphasis on physical methods of experimentation and interpretation. Lecture.

CHM 661. MARINE CHEMISTRY (4)
PR: OGY 521 or CI. Chemical and physical properties of sea water, energy flow in a marine ecosystem, development of the concepts of biogeochemical cycles and master variables, thermodynamics of the carbon dioxide-seawater system, other related topics.

CHM 681. GRADUATE RESEARCH (1-15)
PR: CC. Directed study along lines of the student's research, including participation in regular seminars. May be repeated. (S/U grade only.)

CHM 683. SELECTED TOPICS IN CHEMISTRY (1-6)
PR: CC. The following titles are representative of those that are taught under this title: Symmetry and Group Theory, Photochemical Kinetics, Quantum Mechanical Calculations, Advanced Chemical Thermodynamics, Reaction Mechanisms, Advanced Instrumentation, Separations and Characterizations, Spectroscopy, etc.

CHM 688. RECENT ADVANCES IN CHEMISTRY WITH EMPHASIS ON THEIR IMPACT ON BEGINNING COURSES (3-6)
PR: Graduate Standing. S-U grading only. A course designed to consider and study the recent developments of a given field especially those developments that have an effect on altering the basic concepts and ideas of the field and imply a change in the presentation of introductory material in the field. Qtr. I-IV. (S/U grade only.)

CHM 689. DIRECTED TEACHING (3-9)
PR: Graduate Standing. A formalized structured activity wherein a faculty member, by discussion and assignments, considers the principles, rationale, and modus operandi of elementary college courses. Designed to train teaching assistants and to provide help and training to those graduate students who plan to follow a college-teaching profession. (S/U grade only.) Qtr. I-IV.

CHM 691. GRADUATE SEMINAR IN CHEMISTRY (2)
Qtr. I-IV (S/U grade only.)

CHM 699. MASTER'S THESIS (1-5)
Qtr. I-IV. (S/U grade only.)

CHM 781. GRADUATE RESEARCH (1-5)
Qtr. I-IV. (S/U grade only.)

CHM 783. SELECTED TOPICS (1-5)
The course content will depend on the interest of faculty members and student demand.

CHM 799. PH.D. DISSERTATION (1-5)
PR: CI. Qtr. I-IV. (S/U grade only.)

CLASSICS AND ANCIENT STUDIES

Faculty: Gessman, chairman; J. B. Camp, Henley, Zbar.

CLS 101-102-103. ELEMENTARY LATIN (3,3,3)
Elements of grammar, practice in translation from and into Latin, reading of selections from simple Latin texts.

CLS 201. INTERMEDIATE LATIN I (3)
PR: CLS 103 or equiv.; CR: two-hour per week grammar workshop (no credit). Selections from Cicero's speeches and systematic exercises in intermediate grammar.

CLS 202. INTERMEDIATE LATIN II (3)
PR: CLS 201 or equiv. Selections from the letters of Cicero and Pliny the Younger. (Alternate years.)

CLS 203. INTERMEDIATE LATIN III (3)
PR: CLS 201 or equiv. Selections from Ovid read in Latin and interpreted. Study of the Metamorphoses in English translation and of Graeco-Roman mythology. (Alternate years.)

CLS 301. LATIN HISTORIANS (3)
PR: CLS 201 or equiv. Reading and interpretation of selected passages from the works of Sallust, Livy, and Tacitus in the original and of portions of their works in English translation. (Alternate years.)

CLS 302. LATIN LYRICS (3)
PR: CLS 201 or equiv. Reading and interpretation of selected poems by Roman lyricists, especially Catull and Horace. Introduction into Latin metrics. (Alternate years.)

CLS 303. LATIN EPIC (3)
PR: CLS 201 or equiv. Reading and interpretation of selected passages from Vergil's Aeneid in the original and of the entire work in English translation. Comparison with Greek epic. (Alternate years.)

CLS 321. ANCIENT CIVILIZATIONS (5)
Study of the character, ideas and cultural achievements of the peoples of the Ancient Near East and Mediterranean and their relevance for modern Western civilization, with special emphasis on the Hebrews, Greeks and Romans.

CLS 331-332-333. BASIC GREEK (3,3,3)
PR: Junior or senior standing or a minimum of two years of Latin or another highly inflected language (e.g., German, Russian, Modern Greek) or CI. Accelerated course in the Ancient Greek (Attic) language and introduction to original Greek literature. (Alternate years.)

CLS 341-342-343. BASIC HEBREW (3,3,3)
Designed to give students a working knowledge of Classical (Biblical) Hebrew and to introduce them to the Biblical literature in the original language. (Alternate years.)

CLS 351. CLASSICAL MYTHOLOGY (4)
Study of the more important myths of the Greeks and Romans as laid down in classical literature and of the impact that Classical mythology made on modern Western and, in particular, English literature.

CLS 354. GREEK LITERATURE IN TRANSLATION I: POETRY AND PROSE (4)
An introduction to the masterworks of Greek poetry and prose including the epic, lyric poetry and history. This course is an elective for students who do not have a reading knowledge of Greek, and does not count toward the Classics and Ancient Studies major.

CLS 355. GREEK LITERATURE IN TRANSLATION II. DRAMATIC LITERATURE. (4)
An introduction to the masterworks of Greek drama in their cultural context. The course concentrates on comedy and tragedy of the fifth century B.C. An elective for students who do not have a reading knowledge of Greek, this course does not count toward the Classics and Ancient Studies major.

CLS 356. ROMAN LITERATURE IN TRANSLATION. (4)
An introduction to the poetry and prose of the Republican Age, the Augustan Age, and the Silver Age. This course is an elective for students who do not have a reading knowledge of Latin, and does not count toward the Classics and Ancient Studies major.

CLS 359. CLASSICAL WORD ROOTS IN SCIENCE (2)
A course in the Greek and Latin word stock used in all sciences (including

medicine), technology, and law. Students' needs determine specific content of the course.

CLS 371. FOUNDATIONS OF LANGUAGE (4)
Introduction to synchronic linguistics, basic concepts, general features of language. Dialects, kinship groups, language types, writing systems. Methods or structural analysis with emphasis on the Trubetzkoy-Jakobson approach. (Alternate years.)

CLS 383. SELECTED TOPICS (2-5)
Course contents depend on student demand and instructor's interest and may range over the field of Latin language, literature, or civilization.

CLS 401-402-403. ADVANCED GRAMMAR AND COMPOSITION (3,3,3)
PR: CLS 201 plus any two of CLS 202, 203, 301, 302, 303, or 4 years high schoool Latin. Difficult parts of morphological and syntactic structure. Exercises in advanced translation and composition. Theory of literature: genres, styles, figures of speech, principles of oratory and versification. (Alternate years.)

CLS 411,412,413. LATIN LITERATURE AND BACKGROUNDS (3,3,3)
PR: Same as for CLS 401. Fast survey of Greek literature, discussion of Roman dependence on Greek literary topics, concepts and forms. Survey of Latin literature from Ennius to Augustine. Study and interpretation of sample texts by authors not read earlier. (Alternate years.)

CLS 483. SELECTED TOPICS (2-5)
Course contents depend on student demand and instructor's interest and may range over the whole field of Ancient languages, literatures, and civilizations, in particular Latin, Greek, and Hebrew. Enrollment can be repeated for different topics.

CLS 485. DIRECTED READING (2-5)
Readings in special topics chosen by the student in cooperation with the instructor. Reading of literature also possible in English translation. Arrangement with department chairman before registration necessary.

FOR UPPER LEVEL AND GRADUATE STUDENTS

CLS 517. LATINO-ROMANCE LINGUISTICS (4)
PR: Background in Latin or a Romance language. Case study of linguistic development of 4,000 years from Proto-Aryan through Latin to modern Romance languages. (Alternate years.)

CLS 527. GREEK CIVILIZATION (4)
PR: CLS 321 or a course in Greek history or CI. Detailed study of the Aegean and Hellenic civilizations from their beginnings in Crete to the Roman period. Greek discoveries, explorations, and colonization. (Alternate years.)

CLS 529. ROMAN CIVILIZATION (4)
PR: CLS 321 or 527 or a course in Roman history; or Latin major; or CI. Prehistoric Italy and the Etruscan civilization. History of the civilization of Rome and the Empire with emphasis on the Greek, Carthaginian, and Oriental influences. (Alternate years.)

CLS 571. LANGUAGE IN CHANGE (4)
Principles of diachronic (historical) and comparative linguistics. Causes and documentation of change, research methods. History of writing. Genealogy of languages, glottogonic theories. Ethnolinguistics. (Alternate years.)

CLS 581. INDIVIDUAL RESEARCH (2-5)
PR: CI. Specialized individual work in particular areas of student's interests.

CLS 583. SELECTED TOPICS (2-5)
For description see CLS 483

CLS 585. DIRECTED READING (2-5)
For description see CLS 485.

COOPERATIVE EDUCATION

Coordinating Staff: G. Miller, director; Lentz, assistant director; Card, M. Fager, G. McClung, Minor, Rodriguez.

COE 071. CAREER PLANNING AND SOCIETAL EXAMINATION (1)
Course content covers career planning via the Cooperative Education Program, explores values of cooperative education, blending of theory and practice, and providing relevance in the educational process.

COE 171. COOPERATIVE EDUCATION, 1ST TRAINING PERIOD (0)
PR: 24 hours of academic credit, acceptance in Cooperative Education Program.

COE 172. COOPERATIVE EDUCATION, 2nd TRAINING PERIOD (0)
PR: COE 171.

COE 271. COOPERATIVE EDUCATION, 3RD TRAINING PERIOD (0)
PR: COE 172.

COE 272. COOPERATIVE EDUCATION, 4TH TRAINING PERIOD (0)
PR: COE 271.

COE 371. COOPERATIVE EDUCATION, 5TH TRAINING PERIOD (0)
PR: COE 272.

COE 372. COOPERATIVE EDUCATION, 6TH TRAINING PERIOD (0)
PR: COE 371.

COE 400. COOPERATIVE EDUCATION REPORT (1-5)
PR: COE 071. A course designed specifically for Cooperative Education students in which the student pursues a project dealing with his Cooperative Education assignment and his major area of professional interest. (This course may be used with any other 3-letter prefix if approved by the chairman and dean concerned.)

COE 401. COMMUNITY INTERACTION (1-5)
Utilizes the community as a learning laboratory by involving the student off campus with a wide range of activities to develop a perception of and sensitivity to the problems of our society.

COE 471. COOPERATIVE EDUCATION, 7TH TRAINING PERIOD (0)
PR: COE 372.

COE 472. COOPERATIVE EDUCATION, 8TH TRAINING PERIOD (0)
PR COE 471.

COE 571. COOPERATIVE EDUCATION, 9TH TRAINING PERIOD (0)
PR: COE 472.

COE 572. COOPERATIVE EDUCATION, 10TH TRAINING PERIOD (0)
PR: COE 571.

COE 671. COOPERATIVE EDUCATION, TRAINING PERIOD (0)
COE 672. COOPERATIVE EDUCATION, TRAINING PERIOD (0)
COE 771. COOPERATIVE EDUCATION, TRAINING PERIOD (0)
COE 772. COOPERATIVE EDUCATION, TRAINING PERIOD (0)
COE 871. COOPERATIVE EDUCATION, TRAINING PERIOD (0)
COE 872. COOPERATIVE EDUCATION, TRAINING PERIOD (0)

DANCE

Faculty: Hug, chairman; Coates, Hovinga, Turoff.

DAN 201. MODERN DANCE I (3)
Study of basic principles of modern dance technique, for those without previous training. Practical work in beginning exercises and movement phrases, utilizing changing rhythms and dynamics. May be repeated.

DAN 202. BALLET I (3)
Study of basic positions, barre and fundamental steps using the ballet vocabulary. For those without previous ballet training. Practical work in class. May be repeated.

DAN 203. CHOREOGRAPHY I (3)
Study and execution of basic principles of improvising. Preparation of studies in theme and variations, breath phrases and metric phrases.

DAN 301. MODERN DANCE II (3)
PR: DAN 201 or CI. Continuation of DAN 201. Further emphasis on style and phrasing. Work in projecting mood and quality by dancing and rehearsing in more

advanced student choreography, leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 302. BALLET II (3)
PR: DAN 202 or CI. Continuation of DAN 202, progressing into adagio and allegro. Application of phrasing and style. May be repeated.

DAN 303. CHOREOGRAPHY II(3)
PR: DAN 203 or CI. Preparation of studies in rhythm, dynamics, form and motivation, culminating in a solo.

DAN 311. REPERTORY
The development and performance of solo and/or group dances. Open to all University students by audition. May be repeated.

DAN 313. HISTORY OF DANCE TO THE 20TH CENTURY (3)
Study of the development of dance from its inception through the nineteenth century. Reading, lecture.

DAN 370. INTRODUCTION TO DANCE
For non-dance majors — a study of the art of dance. Lecture and activities including Modern, Ballet, Jazz, Ethnic and Tap. DAN 370 fulfills the FNA requirements for majors in Theatre Arts, Visual Arts and Music Arts.

DAN 401. MODERN DANCE III (3)
PR: DAN 301 or DAN 302 or CI. Continuation of DAN 301 on an advanced level. Work in improvisation and individual invention creating an awareness of many possibilities of movement. Dancing in student choreography leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 402. BALLET III (3)
PR: DAN 302 or DAN 301 or CI. Continuation of DAN 302. Introducing pointe work. Each class member will dance in student choreography. Rehearsal hours to be arranged. May be repeated.

DAN 403. CHOREOGRAPHY III (3)
PR: DAN 303 or CI. Work directed toward duets and group dances. The students will submit choreographic ideas for instructor's approval, then proceed with rehearsals. The best dances will be performed and fully produced under supervision of student choreographers. Reading, lecture, laboratory.

DAN 413. HISTORY OF 20TH CENTURY BALLET (3)
A study of the development of 20th Century ballet in Europe and America. Emphasis on concepts, choreographers and artists. Reading, film, lecture.

DAN 481. DIRECTED STUDY (1-6)
PR: CC. May be repeated. Independent studies in the various areas of Dance. Course of study and credits must be assigned prior to registration.

DAN 501. MODERN DANCE IV (3)
PR: DAN 401 or CI. Continuation of DAN 401. Intensive work on the growth of personal performance style as a means to communication. Equal emphasis will be given to training the body in the development of technical excellence. Dancing in student choreography leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 502. BALLET IV (3)
DAN 402 or CI. Continuation of DAN 402. Great emphasis to final shaping of the body into excellent execution and projection of Ballet technique. Dance in student choreography leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 503. PRODUCTION (3)
Admission by audition. Open to all university students and required of dance majors for two quarters. The rehearsal and stage performance of new choreography. Actual production work in which members of the class assist the choreographer in costumes, taping and props. May be repeated.

DAN 513. HISTORY OF MODERN DANCE (3)
Study of the development of modern dance in the 20th Century in America; the different techniques, concepts in choreography and leading artists of our time. Reading, film, and lecture.

DEVELOPMENTAL COURSES

DRE 001. DEVELOPMENTAL READING (0)
Designed to help students develop maximum reading efficiency. Includes extensive instruction and laboratory practice in the improvement of adequate rates of reading, vocabulary and comprehension skills. An independent study approach is also available for students who prefer to assume responsibility for their own progress.

DMA 001. BASIC CONCEPTS OF ALGEBRA (0)
A programmed learning course in Algebra from a modern point of view for the convenience of persons without adequate knowledge of simple algebraic manipulations and for persons without adequate preparation for MTH 101.

DMA 002. ANALYTICAL TRIGONOMETRY (0)
A programmed learning course in the study of the trigonometric functions as functions of real numbers and their application to triangles.

DRS 001. DEVELOPMENTAL STUDY SKILLS (0)
Designed to help student's develop efficient learning methods needed for college success. Includes instruction and practice in effective study techniques, ranging from developing proper attitude toward studying, listening and taking notes to preparing for and taking exams.

ECONOMICS

Faculty: Pasternak, Chairman; Burton, Cloninger, J. Cooke, Davey, Hanni, Herman, James, Kauder, Kennedy, McElhattan, Mellish, Murphy, R. F. Shannon, Shows, L. Small, Swanson, F. Whartenby.

ECN 201. ECONOMIC PRINCIPLES I (4)
Economics as a social science; theoretical analysis of price determination of the product and factor markets.

ECN 202. ECONOMIC PRINCIPLES II (4)
Accounting, analytical and policy aspects of national income with emphasis on the theory of income determination; analysis of money and banking system; and survey of international trade theory and policies.

ECN 231. BUSINESS AND ECONOMIC STATISTICS I (3)
PR: MTH 211 or equivalent. Frequency distributions, measures of central tendency and deviation, an introduction to probability, random variables, and the normal districution.

ECN 301. INTERMEDIATE PRICE THEORY (5)
PR: ECN 201-202. Advanced analysis of supply and demand as related to competition and monopoly; application of economic theory to product pricing and recourse pricing.

ECN 311. LABOR ECONOMICS (4)
PR: ECN 201-202 or CI. History of the trade union movement; economic analysis of trade union philosophies and practices; examination of basic influences affecting labor force, real wages and employment; collective bargaining and labor law.

ECN 313. COLLECTIVE BARGAINING (5)
PR: ECN 311. The administration of labor-management arguments, mediation and arbitration of industrial disputes and governmental role in collective bargaining.

ECN 323. INTERMEDIATE INCOME AND MONETARY ANALYSIS (5)
PR: ECN 201-202. Advanced analysis of national income and monetary theory with emphasis on the modern theory of income determination and the functioning of the monetary system.

ECN 331. BUSINESS AND ECONOMIC STATISTICS II(5)
PR: ECN 231 and MTH 211 or equivalent. Statistical inference, simple and multiple regression analysis, time series analysis, and Bayesian statistics.

ECN 341. ECONOMICS OF TRANSPORTATION (4)
PR: ECN 201-202. Functions of transportation agencies, rate structure of trans-

portation companies, problems of state and federal regulations and coordination of transportation facilities.

ECN 343. ECONOMICS OF PUBLIC UTILITIES (4)
PR: ECN 201-202. The economic characteristics of natural monopolies and the economic problems of regulation and public ownership.

ECN 351. INTERNATIONAL ECONOMICS (4)
PR: ECN 201-202. The principles and mechanisms of trade, exchange, balance of payments, comparative costs, effects of trade restrictions and economic growth of underdeveloped areas.

ECN 361. INTRODUCTION TO MATHEMATICAL ECONOMICS (4)
PR: CBS 109-110, ECN 201-202, and 331. The principal mathematical tools and techniques used in economic analysis and economic research.

ECN 371. AMERICAN ECONOMIC HISTORY (4)
PR: ECN 201-202. The growth and evolution of American economic institutions from Colonial times to the present.

ECN 373. ECONOMICS OF THE URBAN ENVIRONMENT (5)
PR: ECN 201-202 or CI. Economic analysis of urban problems including: land use, transportation, Urban Labor Markets, and the local public sector.

ECN 401. HISTORY OF ECONOMIC THOUGHT(5)
PR: ECN 201-202. An historical survey of the development of the economic theory and the main streams of economic thought, including philosophical and value aspects of economic thought.

ECN 405. COMPARATIVE ECONOMIC SYSTEMS (4)
PR: ECN 201-202. An emphasis on the theoretical and practical differences between economic systems such as capitalism, socialism, and communism.

ECN 411. LABOR RELATIONS AND PUBLIC POLICY (4)
PR: ECN 311. Problems resulting from legislative and judicial interpretation of the rights, duties and responsibilities of labor unions and employers; public policy in labor-management negotiations; survey of legislation designed to protect workers.

ECN 423. PUBLIC FINANCE (5)
PR: ECN 323. Economic analysis of government expenditures, taxation, public debt, and fiscal policy.

ECN 425. MONETARY THEORY (5)
PR: ECN 301, 323. A discussion of the impact of the financial sector upon real economic magnitudes. The course approaches its subject matter through the theory of capital and portfolio adjustments with emphasis upon the contributions of Pigou, Heynes, Tobin, Gurley, and Shaw.

ECN 431. BUSINESS AND ECONOMIC STATISTICS III (4)
PR: ECN 331, MTH 212 or CI. Theory and use of statistical inference in prediction and decision. Jointly distributed random variables, loss functions, linear models of stationary stochastic processes, small sample theory, tests for precision and significance in estimation. Extensions to econometric investigation of time series data and to Bayesian formulation of optimal decision rules.

ECN 437. BUSINESS — GOVERNMENT RELATIONSHIPS (4)
PR: ECN 201-202. Patterns of regulations such as control of competitive enterprise, cartels and monopolies by the government. Government regulations and economic planning applied to politically determined economic goals.

ECN 451. INTERNATIONAL COMMERCIAL POLICIES (4)
PR: ECN 351. Geographic, social, political and related factors influencing commercial trade policies. Special emphasis on economic consequences of alternative courses of action.

ECN 461. THEORY OF ECONOMIC DEVELOPMENT(4)
PR: ECN 323 or CI. Problems, policies, and dynamics of economic growth in emerging nations. The benefits and relevance of the theory of economic development is examined within the context of the social and political milieu of today's underdeveloped areas.

ECN 471. THEORY OF ECONOMIC DYNAMICS (4)
PR: ECN 323. Economic theories of the business cycle and growth processes. Empirical studies, models for forecasting, and problems of policy are also considered.

ECN 489. SEMINAR IN SELECTED ECONOMIC TOPICS (3-5)
PR: Senior Standing and CI. Topics to be selected by the instructor or instructors on pertinent economic issues.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ECN 501. ECONOMIC PRICE THEORY (3)
Theoretical analysis of micro-economics.

ECN 502. ECONOMIC NATIONAL INCOME THEORY (3)
PR: ECN 501. Analytical and policy aspects of macroeconomic theory.

ECN 503. STATISTICS OF BUSINESS (3)
PR: ECN 231, MTH 211 or equivalent. The analysis and interpretation of quantitative data pertinent to the solutions of economic problems.

ECN 531. ACTIVITY ANALYSIS (5)
PR: MTH 213, ECN 331, and CI. Selected topics in economic theory are analyzed with the aid of linear programming, input-output analysis, game theory, etc. Quantitative and mathematical techniques useful in analyzing economic decision-making including mathematical programming, queueing theory and simulation methods are applied to economic control systems.

ECN 561. ECONOMETRICS (5)
PR: ETK 301 or CI, and ECN 301, 323, 331, 361. An advanced discussion of simple multiple regression and correlation analysis, miscellaneous regression problems, applications in statistical demand functions, and production and cost analysis. Simultaneous equation models in macro-economics.

FOR GRADUATE STUDENTS ONLY

ECN 601. RESEARCH METHODOLOGY (3)
PR: ECN 331 or 503 or equivalent. An investigation of research concepts, objectives, and methods including an introduction to linear programming, game theory, and end-use analysis.

ECN 602. HISTORY OF ECONOMIC THOUGHT (5)
PR: ECN 605 and ECN 607. An intense analysis of the main currents of modern economic thought during the last one hundred years.

ECN 603. MANAGERIAL STATISTICS I (3)
PR: ECN 331 and 503, or equivalent. The use of economic and business data in managerial control and analysis with an introduction to forecasting. Collection and presentation of data, tables, charts, index numbers, linear and nonlinear secular trends, constant and changing periodic movements, and estimating cyclical fluctuations.

ECN 604. MANAGERIAL STATISTICS II (3)
PR: ECN 331 or 503, or equivalent. Simple and multiple correlation and regression analysis with applications in estimating and forecasting and an introduction to the use of statistical inference in managerial decisions.

ECN 605. MICRO-ECONOMICS (3)
PR: ECN 201-202, or equivalent. An investigation of the concepts, tools and methods of micro-economics analysis.

ECN 607. AGGREGATE ECONOMICS (3)
PR: ECN 605. An analysis of monetary and fiscal policy measures designed to moderate economic fluctuations. The theory of national income determination.

ECN 608. APPLIED ECONOMIC ANALYSIS (3)
PR: ECN 605-607. The application of micro and macro principles to business decision-making.

ECN 610. MANPOWER ECONOMICS SEMINAR(5)
PR: ECN 501, 502, or CI. This course is designed to provide the student with a background in labor force statistics, labor institutions, and problems of employment and unemployment. This background then allows for further study of the causes and remedies for unemployment and underemployment.

ECN 623. PUBLIC FINANCE (5)
PR: ECN 501, 502 or equivalent. An examination of the role of the public sector and its contribution to economic welfare. Tax and expenditure policies are examined

in relation to their effects on resource allocation, income distribution, stability and economic growth.

ECN 625. MONETARY THEORY (5)
PR: ECN 605, 607. An advanced discussion of the impact of the financial section upon real economic magnitudes. The course emphasizes theoretical and empirical contribution found in the current literature as an extension of earlier work done in the field of monetary theory.

ECN 699. THESIS (6-9)
PR: CC.

EDUCATION

Faculty: J. Agens, C. L. Anderson, E. C. Anderson, L. Anderson, Auleta, Austin, Barfield, Barkholz, Battle, Bob Beasley, Wayne Beasley, Bedics, Belohlovak, Benjamin, Bondi, Bostow, Bott, L. Bowers, Boyd, H. Brady, Brantley, Breit, V. Bridges, W. Bridges, Bryant, Bullock, Burley, Z. Carlson, Carroll, Chambers, Cleary, Collier, Cotton, Craig, Crickenberger, Cross, Danenburg, Dickinson, Drapela, DuBois, Durso, Robert Dwyer, Roy Dwyer, Engel, Enright, Ferguson, Follman, Freshour, Gates, Geiger, Glover, Goforth, Gordon, Greabell, Grossman, Guetzloe, Gunter, Hall, Haven, Hearn, Higgins, Hoffman, Holland, Hunnicutt, Jackson, Jaeschke, Johanningmeier, Roger Johnson, Russell Johnson, Karns, Kaufmann, Keeler, Keene, Keiter, Kelly, Kincaid, Kleg, Klesius, Kruschwitz, Kuehn, Kuffel, Lantz, Larringa, Lavely, Lax, Lewis, Lichtenberg, Linder, Long, Loveless, Lowe, Manker, Marin, Mazur, MacCambridge, McClellan, McClendon, McCray, Meerdink, Merica, Merriam, Merriman, Michael, Monley, Mumme, Muntyan, Musgrove, Neel, Newcomb, Newcombe, Newton, Nichols, Ober, Olson, Orlosky, Palmer, Panther, Pappas, Patouillet, Paulus, Pearcey, Pfost, Pope, Prescott, Puglisi, Purdom, Radloff, Roach, Roberts, Schultz, Schwartz, Sellers, Sexton, Shannon, Silverman, Singh, Sisco, Sisk, Alice Smith, B. O. Smith, Charles Smith, Smitzes, Stahl, Steiner, Stone, Story, Jack Stovall, Tanner, Thompson, Tocco, Toothman, Turney, Unruh, Uprichard, Urban, Urbanek, Vanover, Weatherford, Weeks, Weinberg, Weingartner, West, Whitney, Wiley, John Wilson, Thomas Wilson, Withers, Wong.

Associate Faculty: Francis Allen, Ruth Allen, Brightwell, Brost, Coker, Colby, Cole, Commaratta, Eaker, French, Freijo, Hirshorn, Holmbraker, Jones, Joost, Kimmel, Kinsey, Lightfoot, Nesman, Peterson, Rebhun, Register, Roberts, Robertson, Royston, Shanberg, Sorenson, Sperry, Stevens, Stewart, Jean Stovall, Tidwell, Towery, Young.

Art Education

EDA 377. THEORETICAL BASES IN ART EDUCATION (3)
A study of the philosophical psychological and historical bases upon which contemporary art education practice is developed.

EDA 379. ART IN THE ELEMENTARY SCHOOL (3)
PR: EDA 377. Art expressions appropriate for elementary school pupils at each grade level. EDA 498 to be taken concurrently.

EDA 441. TEACHING METHODS IN THE SECONDARY SCHOOL ART (4)
PR: EDA 377. Techniques and materials of instruction in art, on the secondary level. EDA 498 to be taken concurrently.

EDA 498. FIELD WORK IN ART EDUCATION (2-6)
PR: CI . Supervised participation in activities related to art education in community centers, non-school youth programs, planned workshops and research.

FOR GRADUATE STUDENTS ONLY

EDA 660. HISTORICAL AND PHILOSOPHICAL FOUNDATIONS OF ART EDUCATION (4)
Past and contemporary philosophies and practices in art education.

EDA 661. ADMINISTRATION AND SUPERVISION OF ART EDUCATION (4)
Principles of administration and supervision of art programs in the school.

EDA 682. RESEARCH SEMINAR IN ART PROGRAM (4)
PR: EDA 660 or CI. Literature and research in art education. Various approaches to problem solving and evaluation with emphasis on individual research.

Curriculum

EDC 101. INTRODUCTION TO TEACHING (4)
PR: Freshman only or CI. The people with whom teachers work, the types of tasks they perform and the challenges they can anticipate. Observation of teaching at several grade levels.

EDC 401. CURRICULUM AND INSTRUCTION (5)
PR: EDF 305 and 307, and admission to a teacher education program. Structure and purposes of curriculum organizaton with special emphasis on the quality of curriculum. Students enrolled in EDC 401 are required to spend six hours a week in public schools as pre-interns in addition to regular class hours.

EDC 480. DIRECTED STUDY (1-4)
Extension of competency in teaching field.

EDC 481. INDIVIDUAL RESEARCH (1-4)
PR: Senior standing and consent of program coordinator.

EDC 485. DIRECTED READINGS (1-4)
PR: Senior standing and consent of program coordinator. May be repeated for a total of 4 quarter hours.

EDC 498. SENIOR SEMINAR IN EDUCATION (3)
PR: Senior standing. Synthesis of teacher candidate's courses in his complete college program. Required concurrently with student teaching.

EDC 499. SUPERVISED TEACHING (1-12)
One full quarter of student teaching in a public or private school. Student teacher takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more quarters, students will be registered for credit which accumulates to 12 quarter hours.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDC 501. CURRICULUM AND INSTRUCTION: ELEMENTARY OR SECONDARY) (5)
Curriculum scope, sequence, and interrelationships, with a critical evaluation of current trends.

EDC 510. HEALTH PROBLEMS IN CHILDREN (4)
Health problems prevalent in the culturally disadvantaged child and the teacher's role in referral or educational adaptation in classroom activities.

EDC 515. DIRECTING SPEECH ACTIVITIES IN THE SECONDARY SCHOOL (4)
Coaching and directing co-curricular activities in discussion, debate, oratory, oral interpretation, and extemporaneous speaking. Planning and supervision of forensic tournaments and speech contests.

EDC 585. EDUCATION WORKSHOP: (1-5)
Professional in-service workshop in various areas of education. May be repeated when subjects differ. Not normally used in degree programs.

FOR GRADUATE STUDENTS ONLY

EDC 601. THEORETICAL ISSUES IN CURRICULUM AND INSTRUCTION (4)
PR: 8 quarter hours at the graduate level in the Foundation areas. Open only to degree-seeking graduate students. Advanced study of basic concepts and their practical application. Persistent issues and problems and development of rationale for their examination.

EDC 661. PRINCIPLES OF EDUCATIONAL SUPERVISION (4)
PR: Courses in general curriculum. Instructional leadership with emphasis on organization for curriculum improvement and in-service growth for professional school personnel.

EDC 671. PRINCIPLES OF EDUCATIONAL ADMINISTRATION (4)
Educational administration as a profession. Consideration is given to organization control, and support of the educational system.

EDC 673. SCHOOL LAW (4)
Basic essentials of school law, a review of court decisions affecting American education, with emphasis upon the study of Florida State Statutes as they pertain to the question of Florida public schools.

EDC 681. DIRECTED STUDY: (Subject) (1-4)
Extension of competency in teaching field.

EDC 685. SCHOOL CURRICULUM IMPROVEMENT (4)
Workshop for the improvement of the curriculum of an elementary or secondary school. Open only to teachers in service. Complete faculty participation required.

EDC 689. SUBJECT SPECIALIZATION PLANNING: SECONDARY (4)
Individually planned course in a secondary school subject area for in-service teachers.

EDC 691. INTERNSHIP (4-9)
PR: CI. Supervised teaching at the secondary or junior college level as appropriate.

EDC 699. THESIS (1-9)

EDC 781. GRADUATE RESEARCH (1-5)
PR: CC. Directed study related to educational research, including participation in regular seminars. May be repeated for credit to a maximum of 15 hours.

EDC 783. SELECTED TOPICS (1-5)
PR: CC. Selected topics in advanced Education. May be repeated for credit to a maximum of 15 hours.

EDC 791. GRADUATE SEMINAR (1-5)
PR: CC. Seminar in advanced Education. May be repeated for credit to a maximum of 15 hours.

EDC 799. DISSERTATION (1-5)
PR: CC. May be repeated for credit to a maximum of 15 hours.

Elementary Education

EDE 409. READING FOR THE CHILD (5)
PR: CBS 101-102. Readiness, word recognition, (phonic, visual and contextual analysis) development of word meanings, basic study skills, comprehension abilities and reading interests.

EDE 411. LANGUAGE ARTS FOR THE CHILD (4)
PR: CBS 101-102. Speaking, writing, reading and listening experiences of children and ways these skills are developed for individual creative expression.

EDE 413. LITERATURE FOR THE CHILD (4)
PR: CBS 101-102. History and development of children's literature. Study of bibliographic sources, criteria and techniques for selection and use.

EDE 415. ARITHMETIC FOR THE CHILD (5)
PR: CBS 109-110. Basic structure of arithmetic, principles underlying number concepts.

EDE 417. SCIENCE FOR THE CHILD (5)
PR: CBS 205, 206, 207 or 208, 209, 210. Science as inquiry.

EDE 419. SOCIAL STUDIES FOR THE CHILD (5)
PR: CBS 301, 302, 303. Significant concepts in the subjects concerned with human relationships. Emphasis upon teaching pupils to solve rather than be engulfed by social problems.

EDE 421. ART FOR THE CHILD (4)
PR: Any three CBS Humanities courses. Art and the intellectual, creative, emotional, and esthetic growth of children.

EDE 423. MUSIC FOR THE CHILD: SKILLS (2)
Voice production, music reading, creative composition and some instrumental experience. School song materials used to support this work.

EDE 424. MUSIC FOR THE CHILD: METHODS (3)
PR: Any three CBS Humanities courses, EDE 423. Music literature and teaching aids for children including singing, rhythmic, creative, instrumental and listening experiences and their presentation.

EDE 425. HEALTH, PHYSICAL EDUCATION FOR THE CHILD (4)
Motivating factors of play; knowledge and skill in basic rhythmic activities; games and stunts; health instruction for the child.

EDE 426. CREATIVE ARTS IN EARLY CHILDHOOD EDUCATION (3)
The development of the child's creative expression through art, music, dance, play, and drama: included are the materials, content, and teaching techniques.

EDE 431. ART FOR EARLY CHILDHOOD (3)
Art, presenting the principles, practices and materials to be used in relation to the characteristics of the young child ages 3-8.

EDE 433. MUSIC FOR EARLY CHILDHOOD (3)
Singing, rhythmic, creative, instrumental and listening experience relevant to early-childhood.

EDE 440. TEACHING METHODS IN THE ELEMENTARY SCHOOL (4)
Suggested Co-requisite: EDC 401. Process of teaching elementary school subjects. To be taken quarter prior to internship.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDE 515. DIAGNOSIS AND TREATMENT OF LEARNING DISABILITIES IN SCHOOL MATHEMATICS (4)
PR: EDE 415 or equivalent. Study of the symptoms, etiologies and consequences of children's learning disabilities in mathematics; study and guided application of theoretical models used in diagnosis and treatment — group and individual.

EDE 516. PRACTICUM IN DIAGNOISIS AND TREATMENT OF CHILDREN'S LEARNING DISABILITIES IN MATHEMATICS (4)
PR: EDE 515. Supervised conduct of a case study with a child experiencing learning difficulties in mathematics. Procedures used and reporting practice employed developed in EDE 515 reviewed and extended.

EDE 519. SOCIAL GROWTH IN CHILDHOOD (4)
A study of the principal factors which influence the social development of young children with particular emphasis upon those cultural influences which affect both child deveopment and the educational programs for the young child.

EDE 527. DEVELOPMENTAL PROCESSES IN EARLY CHILDHOOD (4)
The normal processes of development among children ages 3-8, the relation between these characteristics and the curriculum: child study through observation required.

EDE 529. PROGRAMS IN EARLY CHILDHOOD EDUCATION (5)
A study of school programs for nursery, kindergarten, and primary education. Analysis and evaluation of these programs in the light of the most effective current classroom practices. Observation and participation included.

EDE 531. LANGUAGE AND LEARNING IN EARLY CHILDHOOD (4)
A study of the successive stages of development in language and learning during the child's formative years. Theories of learning and of language development.

EDE 539 WORKSHOP IN EARLY CHILDHOOD EDUCATION (4)
Individual problems and innovations related to methods and materials of instruction in the early childhood grades.

FOR GRADUATE STUDENTS ONLY

EDE 603. SEMINAR IN CURRICULUM RESEARCH (1-5)
PR: EDF 607. Critical evaluation of current research and curriculum literature, design and analysis of individual research topics leading to satisfaction of research requirements.

EDE 609. TRENDS IN READING IN THE ELEMENTARY SCHOOL (4)
PR: EDE 409 or equivalent. Extensive study of recent trends in materials, approaches and procedures in teaching reading in the elementary schools.

EDE 611. TRENDS IN LANGUAGE ARTS INSTRUCTION (4)
PR: EDE 411 and 413. Advanced materials and processes of instruction in elementary school language arts programs.

EDE 613 CREATIVE ARTS INSTRUCTION (4)
Creative processes in the teaching of visual arts, music, dance, and drama to elementary school pupils.

EDE 615. TRENDS IN MATHEMATICS INSTRUCTION (4)
PR: EDE 415 or equivalent. Philosophy, content and process of qualitative instruction in modern mathematics in elementary school programs.

EDE 617. TRENDS IN SCIENCE INSTRUCTION (4)
PR: EDE 417. Topics in the biological and physical sciences appropriate for teaching in excellent elementary school programs. Analysis of modern curriculum materials used in presenting science as a process of inquiry.

EDE 619. TRENDS IN SOCIAL STUDIES INSTRUCTION (4)
PR: EDE 419. Crucial concepts drawn from the social sciences. Analysis of the problems approach. Students will select an area of independent study on an advanced level.

EDE 621. ART FOR THE ELEMENTARY SCHOOL TEACHER (4)
Exploration of various materials and techniques in relationship to current theories about art and the intellectual, creative, emotional and esthetic growth of children.

EDE 641. PROBLEMS IN SUPERVISION (4)
PR: EDF 607 or equivalent and EDC 661. Problems in supervising for curriculum improvement within the elementary school.

EDE 687. SUBJECT SPECIALIZATON PLANNING: ELEMENTARY (4)
Individually planned course in an elementary school subject area for in-service teachers.

Foundations

EDF 303. INTRODUCTION TO MEASUREMENT AND EVALUATION (4)
Elementary concepts basic to a general understanding of measurement and evaluation procedures. Students may *not* receive credit for both EDF 303 and PSY 413, Tests and Measurements in Psychology.

EDF 305. HUMAN DEVELOPMENT AND LEARNING (4)
PR: CBS 201, 203, and 75 hours completed. Physiological and psychological growth patterns; learning theories, personality adjustment, and appraisal of the various forces affecting learning and personality. Credit cannot be earned for both EDF 305 and EDF 377. Should not be taken concurrently with EDF 307.

EDF 307. SOCIAL FOUNDATIONS OF EDUCATION (4)
PR: 75 hours completed. Social, economic and political context within which schools function and the values which provide direction for our schools; the culture as a motivating influence in instruction. Should not be taken concurrently with EDF 305.

EDF 309. PHILOSOPHY OF EDUCATION (4)
A critical analysis of selected philosophies of education in terms of their beliefs about the nature of man and society and their related assumptions about the nature of realtiy, knowledge, and value.

EDF 311. COMPARATIVE EDUCATION (4)
PR: Upper level standing. A comparison of contemporary educational systems of selected countries with that of the United States.

EDF 377. EDUCATIONAL PSYCHOLOGY (4)
The nature of learning and the application of learning principles to educational procedures. Credit cannot be earned for both EDF 305 and EDF 377.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDF 502. ADOLESCENCE (4)
A study of the educational, intellectual, personality, physical, social and vocational factors in adolescence.

EDF 575. AMERICAN DEMOCRACY AND PUBLIC EDUCATION (4)
Interdependence of the public school and democracy in the United States and the

responsibility of the school in fostering and strengthening basic democratic principles.

EDF 585. PROGRAMMED INSTRUCTION AND TEACHING MACHINES (4)
Principles for programming in the several academic subjects.

FOR GRADUATE STUDENTS ONLY

EDF 605. FOUNDATIONS OF MEASUREMENT (4)
Fundamental descriptive statistics, basic measurement concepts, role of measurement in education, construction of teacher-made tests and interpretation of standardized tests.

EDF 607. FOUNDATIONS OF EDUCATIONAL RESEARCH (4)
PR: EDF 605. Major types of educational research, with emphasis upon understanding the experimental method.

EDF 611 PSYCHOLOGICAL FOUNDATIONS OF EDUCATION (4)
Selected topics in psychology of human development and learning.

EDF 612. CHILD DEVELOPMENT (4)
PR: EDF 611 or CI. Educational, emotional, hereditary, intellectual, social and physical factors influencing child growth and development.

EDF 613. PRINCIPLES OF LEARNING (5)
A consideration of several theories of learning and related research studies in regard to classroom application.

EDF 615. BIOLOGICAL BASES FOR LEARNING AND BEHAVIOR (5)
PR: One course in Educational Psychology. A study of human biological development an its influence upon learning and behavior.

EDF 617. MEASUREMENT OF INDIVIDUAL INTELLIGENCE (5)
PR: EDF 305 or 611 or equivalent and a course in educational measurement or statistics. Administration and interpretatiion of individual measures of intelligence. Students may *not* receive credit for both EDF 617 and PSY 617, Individual Intelligence Testing.

EDF 621. SOCIO-ECONOMIC FOUNDATIONS OF AMERICAN EDUCATION (4)
Significant socio-economic factors as they relate to major problems facing American education.

EDF 623. HISTORICAL FOUNDATIONS OF AMERICAN EDUCATION (4)
Historical and comparative problems in American education which are relevant to contemporary issues.

EDF 625. PHILOSOPHICAL FOUNDATIONS OF AMERICAN EDUCATION (4)
Major philosophies of education which are relevant to an understanding of contemporary educational issues.

EDF 627. PROSEMINAR IN COMPARATIVE EDUCATION (4)
Contemporary policies and practices in education in selected countries of the world. Methodology in Comparative Education. Consideration will be given to needs and interests of individual students.

EDF 631 THEORIES OF PERSONALITY FOR SCHOOL PERSONNEL (4)
A comparative and integrated study of personality development according to major psychological theories. Application of the theoretical constructs to education and guidance.

Guidance

FOR UPPER LEVEL UNDERGRADUATES

EDG 401. PUPIL PERSONNEL SERVICES IN THE SCHOOLS (5)
An introduction to the role and function of guidance, school psychology, social work and other pupil personnel services from kindergarten through junior college.

FOR GRADUATE STUDENTS ONLY

EDG 581. PRINCIPLES OF GUIDANCE(4)
Cuidance as a profession; philosophic framework of the guidance program, its scope and place in the total educational context.

EDG 603. THE INFORMATIONAL SERVICE IN GUIDANCE (4)
PR: EDG 581. Occupational structure in the United States; sources and uses of educational, occupational, social and personal information; collecting, classifying and communicating such information.

EDG 607. THE INDIVIDUAL INVENTORY SERVICE IN GUIDANCE (3)
PR: EDG 581. Case study approach to the analysis of the individual with emphasis on collecting and using information for purposes of better understanding individuals.

EDG 611. THE TESTING SERVICE IN GUIDANCE (4)
PR: EDF 605 or equivalent and EDG 581. Measurement in guidance; administration of tests, interpretation and use of results.

EDG 613. ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES IN ELEMENTARY SCHOOLS (3)
PR: EDG 581. Organization of a guidance program in the elementary school, its relation to instruction and administration. Guidance roles and relationships of members of the school staff.

EDG 615. ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES IN SECONDARY SCHOOLS (3)
PR: EDG 581. Organization of a guidance program and its place in the total educational program; responsibilities of various staff members and their relationships to each other.

EDG 617. GROUP PROCEDURES IN GUIDANCE IN ELEMENTARY SCHOOLS (3)
PR: EDG 581 and EDG 621. Counterpart of EDG 619 for prospective secondary school counselors. Use of groups in the counseling and guidance of children and in working with parents and teachers.

EDG 619. GROUP PROCEDURES IN GUIDANCE IN SECONDARY SCHOOLS (3)
PR: EDG 581 and EDG 623. Group interaction and values of group activity for guidance purposes. Methods and techniques for working with groups.

EDG 621. THE COUNSELING SERVICE IN GUIDANCE IN ELEMENTARY SCHOOLS (5)
PR: EDG 581. Counterpart of EDG 623 for prospective secondary school counselors. Counseling viewed as communications through media appropriate to children.

EDG 623. THE COUNSELING SERVICE IN GUIDANCE IN SECONDARY SCHOOLS (5)
PR: EDG 581. Nature of the counseling process with emphasis on some theoretical approaches and practical techniques.

EDG 625. PRACTICUM IN ELEMENTARY GUIDANCE COUNSELING AND CONSULTING (6)
This course is the counterpart of EDG 627 for prospective secondary school counselors; enrollment by permission of program chairman only. Counseling with children in groups as well as individually; consultations with parents, teachers, administrators, and fellow professionals regarding the children being counseled.

EDG 627. PRACTICUM IN SECONDARY SCHOOL GUIDANCE COUNSELING (6)
Final course in guidance program; enrollment by permission of program chairman only. Supervised practice in working with individuals in counseling relationship.

EDG 629. COMPARATIVE GUIDANCE(4)
PR: EDG 581 (or equivalent) or CI. Guidance theory and practice in foreign countries; for example, guidance theory and practice in the Soviet block countries, Marxist ethics, socialist character formation, the role of ideology, collectivist life style, leadership requirements, hierarchy of individual and societal goals. Orthodox theory versus reformist currents. Evaluation of Marxist guidance through critical analysis of primary source materials.

EDG 633. SEMINAR IN GUIDANCE (1)
PR or CR: EDG 581. Significant issues in the field of guidance; topics for discussion will vary according to needs and interests of students.

Junior College

FOR GRADUATE STUDENTS ONLY

EDH 651. THE JUNIOR COLLEGE IN AMERICAN HIGHER EDUCATION (4)
History of higher education, philosophical and cultural bases for definition of its role, and contemporary issues, such as control, financing, and curricular patterns. The place and problems of the community junior college will be central concerns of this course.

EDH 653. SEMINAR IN COLLEGE TEACHING (5)
Implications of learning theory and student characteristics for teaching at the college level. Types of teaching procedures, innovation, evaluation, student freedom and responsibility for learning.

Library – Audiovisual

EDL 411. SCHOOL LIBRARY ADMINISTRATION AND SERVICE (5)
Development, philosophy, objectives, standards and current trends in school libraries. Introduction to library operations, programs and services in the school and in the community.

EDL 412. ORGANIZATION OF THE SCHOOL LIBRARY AS A MATERIALS CENTER (5)
Media quarters (materials center), facilities and equipment. The application of the principles of library organization and service to the administration and service of all media in the school.

EDL 419. AUDIOVISUAL MATERIALS OF INSTRUCTION (4)
Selection, utilization and care of audiovisual materials and equipment.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDL 508. TV UTILIZATION IN AND FOR THE SCHOOL (4)
Utilization of open and closed circuit broadcasting in the instructional process.

EDL 513. GENERAL REFERENCE SOURCES (4)
Basic reference tools: dictionaries, encyclopedias, handbooks, indexes, serials, bibliographies, biographical sources, atlases and gazetteers; emphasis on school library reference materials.

EDL 514. SELECTION AND ACQUISITION OF ELEMENTARY SCHOOL LIBRARY MATERIALS (4)
Selection and ordering of books and audiovisual materials for children, grades K-6.

EDL 515. TECHNICAL SERVICES IN LIBRARIES (4)
Principles and practice in the classification, cataloging and processing of books for the school library.

EDL 517. BOOKS AND RELATED MATERIALS FOR YOUNG PEOPLE—Part I (3)
Literature for adolescents: bibliographic sources, aids, and tools for the selection and utilization of books and related multi-sensory materials.

EDL 518. BOOKS AND RELATED MATERIALS FOR YOUNG PEOPLE—Part II (3)
PR: EDL 517. Examination of books and related materials for young people in terms of basic principles of selection and utilization.

EDL 523. PREPARATION AND PRODUCTION OF INSTRUCTIONAL MATERIALS (4)
Basic techniques for the preparation of a variety of audiovisual instructional materials.

EDL 524. STORYTELLING FOR ELEMENTARY SCHOOL CHILDREN (4)
Review of the literature of storytelling; criteria in selection of storytelling materials; practice in using the arts and skills of oral communication in transmitting the literary heritage to young children.

FOR GRADUATE STUDENTS ONLY

EDL 600. FOUNDATIONS OF LIBRARIANSHIP (5)
PR: EDL 411 or its equivalent. Overview of and introduction to the study of library service; history; organization; specialized literature; outstanding leaders; current trends, issues and problems. Place of the library in society with its contributions to that society.

EDL 601. BIBLIOGRAPHY AND BOOK SELECTION (5)
PR: EDL 517, 518. Bibliographical sources, evaluative criteria for books and principles of book selection for libraries.

EDL 602.† HISTORY OF LIBRARIES (4)
Development of libraries as found from the earliest records to the great libraries of modern times and the library as a social institution.

EDL 603.† HISTORY OF BOOKS AND PRINTING (4)
PR: EDL 600 or consent of the instructor. The making of books from earliest times to the beginning of the Twentieth Century, including the manuscript book, the invention and spread of printing, type design, methods and styles of illustration.

EDL 604.† CONTEMPORARY PUBLISHING AND PRINTING (4)
PR: EDL 601. A survey of book publishing as it is carried on today, primarily in the United States. Emphasis on structure of the industry, economic conditions, technological developments, social functions of book publishing and distribution. Complementary relation between libraries and publishing.

EDL 605. HISTORY OF CHILDREN'S LITERATURE (5)
Historical bibliographical survey of imaginative and informational literature for children.

EDL 607. THE CURRICULUMN AND INSTRUCTIONAL TECHNOLOGY (5)
Effective utilization of instructional materials as they relate to specific areas of the curriculum in elementary and high school programs.

EDL 609. SUPERVISED FIELD WORK IN SCHOOL LIBRARIES (4)
PR: Consent of major adviser.

EDL 610. BOOKS AND RELATED MATERIALS OF LATIN AMERICAN COUNTRIES SUITABLE FOR CHILDREN AND YOUNG PEOPLE (4)
Bibliographic sources, aids and tools for the selection and utilization of Latin American books and related materials suitable for children and young people.Examination of representative materials in terms of the basic principles and criteria of selection for libraries.

EDL 611. ADVANCED SUBJECT REFERENCE AND BIBLIOGRAPHY (4)
PR: EDL 513. Literature of the humanities, social sciences, science, and technology.

EDL 612. THE ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER (5)
PR: EDL 600 or its equivalent. Media quarters, facilities and equipment. Basic principles of organization and administration of media programs in elementary and secondary schools.

EDL 615. CLASSIFICATION AND CATALOGING OF NON-BOOK MATERIALS (3)
Principles and practice in the cataloging of non-book materials for the media center.

EDL 616. ADVANCED CATALOGING AND CLASSIFICATION (TECHNICAL PROCESSES) (4)
PR: EDL 515 or consent of the instructor. An exmaination of changing policies and procedures in the administration of acquisitions, cataloging, binding, photographic reproduction and related area. Analysis of research in the field.

EDL 619. DOCUMENTS AND SERIALS (4)
The nature of documents and serials, their reference and research value; techniques of acquisition, cataloging, organization, conservation and reference use.

EDL 621. AUDIOVISIUAL ADMINISTRATION (5)
PR: EDL 523 and 607. Audiovisual administrative practices in school systems and junior colleges.

† Only two out of sequence EDL 602, 603, 604 may be taken for any one program.

EDL 622. PROBLEMS IN AUDIOVISUAL UTILIZATION FOR NON-SCHOOL LIBRARIANS (4)
Examination of non-print media and its utilization in non-school libraries. Characteristics of media equipment and paradigms of use.

EDL 623. ADVANCED PREPARATION AND PRODUCTION OF INSTRUCTIONAL MATERIALS (4)
By permission of instructor. Designed for the media specialist. Advanced techniques for the preparation of audiovisual materials of instruction.

EDL 625. READING GUIDANCE PROGRAMS IN LIBRARIES AND CLASSROOMS (4)
The factors and forces that influence reading interests and habits of youth; programs for teaching the investigative and library skills; the materials and methods for the guidance of reading, grades 1-12.

EDL 629. RADIO AND TELEVISION TECHNIQUES FOR EDUCATORS (4)
Utilization and broadcasting techniques for educators. Stress will be placed on local school production, micro-teaching, and studio broadcasting.

EDL 630. BIBLIOGRAPHY OF THE HUMANITIES (4)
PR: EDL 513 and EDL 611 or consent of the instructor. Detailed consideration of the bibliographical and reference materials in the humanities with training and practice in their use for solving problems arising in the reference service. Emphasis upon the importance of creative literature in all libraries, illustrated by specific readings.

EDL 631. BIBLIOGRAPHY OF THE SOCIAL SCIENCES (4)
PR: EDL 513 and EDL 611 or consent of the instructor. Characteristics of the social science disciplines and structure, concepts, methods of investigation. Understanding of social science reference tools as means of bibliographic control and as vehicles of research.

EDL 632. BIBLIOGRAPHY OF THE SCIENCES AND TECHNOLOGIES (4)
PR: EDL 513 and EDL 611 or consent of the instructor. Study of representative reference sources in pure and applied sciences with equal attention given to typical problems encountered in scientific and technological reference service.

EDL 640. ADMINISTRATION AND PERSONNEL SERVICES IN THE PUBLIC LIBRARY (5)
Identification of problems and critical examination of methods in administrative areas of technical and public services, fiscal, and legal responsibilities, staff organization and supervision in public libraries.

EDL 650. ADMINISTRATION AND PERSONNEL SERVICES IN THE ACADEMIC LIBRARY (5)
Identification of problems and critical examination of methods in administrative areas of technical, student, and teaching staff services, fiscal and legal responsibilities, staff organization and supervision in academic libraries.

EDL 681. INDIVIDUAL RESEARCH AND INDEPENDENT STUDY (1-5)
PR: 20 hours earned in program and consent of adviser.

Music Education

***EDM 431. INSTRUMENTAL MUSIC IN THE ELEMENTARY SCHOOL (5)**
***EDM 432. INSTRUMENTAL MUSIC IN THE JUNIOR HIGH SCHOOL (5)**
***EDM 433. INSTRUMENTAL MUSIC IN THE SENIOR HIGH SCHOOL (5)**
***EDM 435. VOCAL MUSIC IN THE ELEMENTARY SCHOOL (5)**
***EDM 437. VOCAL MUSIC IN THE JUNIOR HIGH SCHOOL (5)**
***EDM 439. VOCAL MUSIC IN THE SENIOR HIGH SCHOOL (5)**

FOR GRADUATE STUDENTS ONLY

EDM 601. TECHNIQUES OF RESEARCH IN MUSIC EDUCATION (4)
Professional bibliography and individual research projects.

* Each class meets as a performing group. Score reading, conducting, organizational procedures, historical relationships, and methods at the appropriate grade levels. Teaching techniques concerning the presentation of elements of theory, general music, and literature.

EDM 603. MUSIC SUPERVISION AND ADMINISTRATION (3)
The music curriculum in relation to the total school program; staff and budgetary needs.

EDM 605. THE TEACHING OF MUSIC LITERATURE (3)
Music literature appropriate for grades K-12 and methods of presentation to develop music concepts and sensitivity.

EDM 614. VOCAL MATERIALS AND CONDUCTING (4)
A study of materials appropriate for use in vocal groups. Emphasis is given to vocal materials appropriate for use in secondary schools.

EDM 617. INSTRUMENTAL MATERIALS AND CONDUCTING (4)
A study of materials appropriate for use in instrumental groups. Emphasis is given to instrumental materials appropriate for use in secondary schools.

EDM 633. CURRENT TRENDS IN SCHOOL INSTRUMENTAL MUSIC (3)
New materials, equipment, techniques of teaching and recent historical trends in instrumental music.

EDM 635. CURRENT TRENDS IN SCHOOL VOCAL MUSIC (3)
New materials, equipment, techniques of teaching and recent historical trends in vocal music.

Natural Science — Mathematics

EDN 425. NEW TRENDS IN TEACHING THE PHYSICAL SCIENCES (4)
Physical Science Study Committee Physics, Chemical Education Materials Study and other new approaches to the teaching of the physical sciences. Recommended for teachers of Physics, Chemistry and Earth Sciences.

EDN 427. NEW TRENDS IN TEACHING BIOLOGY (4)
Recent developments in curriculum materials and in strategies for teaching biological sciences, grades 7-12. Recommended for pre-service teachers of secondary school biology.

EDN 451. TEACHING METHODS IN THE SECONDARY SCHOOL—MATHEMATICS (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in mathematics.

EDN 459. TEACHING METHODS IN THE SECONDARY SCHOOL—SCIENCES (4)
PR: EDC 401 or concurrent registration in EDC 401. Tehniques and materials of instruction in secondary schools sciences.

EDN 515. THE UTILIZATION OF LABORATORY TECHNIQUES IN THE TEACHING OF MATHEMATICS (4)
PR: 18 quarter hours of mathematics or CI. In this course students will make an examination of a variety of sample laboratory lessons along with methods for creating and evaluating such lessons.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDN 583. SELECTED TOPICS IN SCIENCE EDUCATION (1-5)
May be repeated when topics are not duplicated.

FOR GRADUATE STUDENTS ONLY

EDN 616. TEACHING OF PRE-SECONDARY SCHOOL MATHEMATICS I (5)
PR: 18 quarter hours of mathematics or CI. Development of strategies and materials for teaching mathematical concepts and skills appropriate to presecondary school years.

EDN 617. TEACHING OF PRE-SECONDARY SCHOOL MATHEMATICS II (5)
PR: EDN 616. Continuation of EDN 616.

EDN 618. TEACHING OF PRE-SECONDARY SCHOOL MATHEMATICS III (5)
PR: EDN 617. Continuation of EDN 616-617.

EDN 621. TEACHING OF HIGH SCHOOL ALGEBRA (4)
PR: B.A. in mathematics or certification in secondary mathematics. Philosophy, content, new trends, and methods of teaching beginning, intermediate, and advanced high school algebra.

EDN 622. TEACHING OF HIGH SCHOOL GEOMETRY (4)
PR: B.A. in mathematics or certification in secondary mathematics. Philosophy, content, new trends, and methods of teaching high school geometry.

EDN 637. CURRENT TRENDS IN SECONDARY MATHEMATICS EDUCATION (4)
Curricular patterns and instructional practices in secondary mathematics.

EDN 639. CURRENT TRENDS IN SECONDARY SCIENCE EDUCATION (4)
PR: EDN 425 or 427. Curricular patterns and instructional practices in secondary science.

EDN 641. CASE STUDIES IN SCIENCE (4)
Case studies from the Natural Sciences with implications for science teaching.

EDN 651. TEACHING SECONDARY SCHOOL BIOLOGY (4)
PR: CI. Effective use and production of instructional materials in the biological sciences. Interrelation of philosophy, materials and classroom practices.

EDN 653. TEACHING SECONDARY SCHOOL PHYSICAL & EARTH SCIENCES (4)
PR: CI. Effective use and production of instructional materials in the physical and earth sciences. Interrelation of philosophy, materials, and classroom practices.

Physical Education

***EDP 255. FIRST AID (3)**
Meets American Red Cross certification requirements in standard and advanced first aid.

***EDP 311. SEMINAR AND FIELD EXPERIENCE IN PHYSICAL EDUCATION (5)**
Approximately two hours per day are spent teaching in an elementary school which provides a variety of experiences designed to lead students to an understanding of children and how they learn in the elementary school.

***EDP 312. HUMAN KINETICS I (6)**
The development and integration of the neuromuscular and the associated sensory systems as they affect motor and perceptual-motor performance. The physiology of muscular contraction, the accompanying immediate changes in the cardiorespiratory systems, and the permanent physiological changes resulting from exercise.

***EDP 314. INDIVIDUAL ASSESSMENT (2)**
A personal evaluation of various factors related to the effective teaching of physical education. An individual profile that can be used for counseling purposes will be the final product of this course.

***EDP 321. SEMINAR AND FIELD EXPERIENCE IN PHYSICAL EDUCATION (5)**
Elementary school physical education teaching experiences are provided for students. Seminars emphasize planning and teaching methodology. Health and recreation as they relate to elementary school children are studied.

***EDP 322. HUMAN KINETICS II (6)**
The structure and function of the nervous, skeletal, and muscular systems of the human body as they contribute to efficient movement; deviations in either structure or function in these systems and the role of exercise in rehabilitation.

***EDP 331. SEMINAR AND INTERNSHIP IN PHYSICAL EDUCATION (5)**
Physical education teaching experience is provided at various grade levels. Seminars are concerned with organization, evaluation, and extra-class activities. Individual teaching is analyzed and programmed.

***EDP 332. HUMAN KINETICS III (6)**
The mechanical laws of physics as they relate to movement within and of the human

* Enrollment in these courses requires admission to the Physical Education Program.

body and the projection of objects in throwing, hitting, and kicking. Efficiency of human movement through sound body mechanics.

***EDP 365. AQUATICS** (3)
Includes analyzation and methodology of teaching swimming skills, conducting class activities, and the organization and conducting of aquatic programs in the school and the community.

***EDP 411. SEMINAR AND FIELD EXPERIENCE IN PHYSICAL EDUCATION** (5)
Students spend approximately two hours a day at either the junior or senior high school level working in team teaching situations. Emphasis is placed on understanding the secondary level student and how teaching behavior can affect the learner.

***EDP 412, 422, 432. APPLIED HUMAN KINETICS** (4 each)
A three course sequence which stresses the biomechanical analysis, motoric learning, the teaching techniques of dance, and the skills and strategies common to a number of individual and team sports.

***EDP 421. SEMINAR AND INTERNSHIP IN PHYSICAL EDUCATION** (5)
Students reverse teaching levels from EDP 411 so that they will have experience at both junior and senior high school levels. Team teaching prevails, however, a transition is made to teaching larger numbers of students. Seminars emphasize individualization techniques.

***EDP 431. SEMINAR AND INTERNSHIP IN PHYSICAL EDUCATION** (5)
Students have an option of teaching at the elementary, junior or senior high school level as well as teaching mentally retarded students. Students will teach for a full day for a period of from one to three weeks.

EDP 459. ATHLETIC TRAINING (3)
PR: CI. Principles and techniques of conditioning athletes for competition; prevention and care of injuries in physical education and athletic activities.

EDP 460. HEALTH EDUCATION PROJECT (5)
PR: CI. A practicum in health education through field experiences with official and voluntary health agencies.

EDP 468. COACHING OF SWIMMING (3)
Methods of organizing and coaching a competitive swimming team.

EDP 469. COACHING OF FOOTBALL (5)
Theory and practice of the fundamental techniques, organizational problems and strategy involved in coaching football.

EDP 478. COACHING OF WRESTLING (4)
Theory and practice of the fundamental techniques, organizational problems and strategy involved in coaching wrestling.

EDP 479. COACHING OF SOCCER (3)
Theory and practice of the fundamental techniques, organizational problems and strategy involved in coaching soccer.

EDP 486. COMMUNITY RECREATION (4)
Introduction to recreational outlets in the community and the administrative problems confronting recreational playground leaders and directors of community recreational programs.

EDP 488. COACHING OF TRACK AND FIELD (4)
Theory and practice of the fundamental techniques, organizational problems and strategy involved in coaching track.

EDP 489. COACHING OF BASKETBALL (3)
Theory and practice of the fundamental techniques, organizational problems and strategy involved in coaching basketball.

EDP 499. COACHING OF BASEBALL (3)
Theory and practice of the fundamental techniques, organizational problems and strategy involved in coaching baseball.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDP 556. SPECIAL PROBLEMS IN PHYSICAL EDUCATION (3-6)

* Enrollment in these courses requires admission to the Physical Education Program.

EDP 558. SCIENTIFIC BASIS OF COACHING (5)
The application of principles from exercise physiology, kinesiology, and psychology to competitive athletics.

EDP 566. PHYSICAL EDUCATION FOR THE MENTALLY RETARDED (4)
An analysis of the neuromuscular and perceptual motor development of children in regard to the special problems of the mentally retarded child and a study of activities designed to improve his motor skills, physical fitness, and social development.

FOR GRADUATE STUDENTS ONLY

EDP 600. PROFESSIONAL ASSESSMENT (4)
Selected readings of current trends in physical education; discussion of philosophies of teaching; and individual appraisal of knowledge, values, attitudes, and professional competencies.

EDP 610. BIO-KINETICS OF HUMAN MOVEMENT (4)
Integration of basic kinesiological foundations applied to teaching physical education. Specific topics include: physical growth and neuro-muscular development, role of neuromuscular mechanisms in motor performance, physical principles of human movement and the effects of exercise on the muscular and cardio-respiratory systems.

EDP 611. SPECIALIZED STUDY IN BIO-KINETICS OF HUMAN MOVEMENT: (SUBJECT) (1-4)
Will provide in-depth study in specific areas related to neurological, physiological, and mechanical principles of human movement.

EDP 620. SOCIO-PSYCHOLOGICAL ASPECTS OF HUMAN MOVEMENT (4)
Involves the psychological and sociological implications of movement to historical and contemporary man. Emphasis on psycho-motor learning, movement behavior, physical self-concept, role of movement in society and values and attitudes held toward movement.

EDP 621. SPECIALIZED STUDY IN SOCIO-PSYCHOLOGICAL ASPECTS OF HUMAN MOVEMENT: (SUBJECT) (1-4)
Will provide in-depth study in specific areas related to sociological and psychological principles of human movement.

EDP 630. CURRICULUMN AND INSTRUCTIONAL PROCESS IN PHYSICAL EDUCATION (4)
Application of learning theory and education innovations, study of structure of subject matter and styles of teaching and investigation of the nature of the learner as these relate to teaching physical education. Fieldwork may be a requirment of this course.

EDP 631. SPECIALIZED STUDY IN CURRICULUM AND INSTRUCTIONAL PROCESS IN PHYSICAL EDUCATION: (SUBJECT) (1-5)
Will provide in-depth study in specific areas related to the teaching-learning process of physical education.

EDP 640-641. PHYSICAL EDUCATION FOR THE HANDICAPPED I & II (5,5)
This sequential course is concerned with the motor performance and physical fitness of neurologically handicapped individuals and the unique problems of motor skill learning found in children and youth with visual, auditory, speech, or orthopedic handicaps. Study includes field experiences which apply knowledge related to psycho-educational characteristics; planning, conducting, and evaluating individualized programs of special physical education; and review of relevant literature.

EDP 650. RESEARCH IN PHYSICAL EDUCATION (4)
Emphasis will be directed toward planning, conducting, and interpreting research in physical education. The function of research in improving programs as well as the technical aspects of research designs appropriate to physical education are included for study.

EDP 651. RESEARCH PROJECT IN PHYSICAL EDUCATION (1-6)
In-depth research study of selected topics concerning human movement. Topics will vary according to needs and interests of students. May be repeated for credit.

EDP 699. RESEARCH THESIS (1-9)

Measurement – Research – Evaluation

FOR GRADUATE STUDENTS ONLY

EDQ 601. ADVANCED MEASUREMENT—COGNITIVE AREA (4)
Measurement, assessment theory and procedures appropriate to the "Cognitive Domain", i.e., intellectual abilities, aptitudes, achievements, skills.

EDQ 603. ADVANCED MEASUREMENT—AFFECTIVE AREA (4)
Measurement, assessment theory and procedures appropriate to the affective domain, i.e., feelings, attitudes, interests, personal characteristics.

EDQ 604. CRITICAL ISSUES IN EDUCATIONAL MEASUREMENT AND EVALUATION (4)
A consideration of major issues relevant to the theory and application of measurement and evaluation. Topics include such issues as culture fair testing, accountability, assessment of change, decision theory, nature of human abilities, normative vs. criterion measures, and current socio-political issues in measurement and evaluation.

EDQ 605. STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH I (4)
Application of statistical techniques to the study of education problems: Tests of significance and confidence intervals, analysis of variance (one-way and factorial), correlation and linear regression.

EDQ 607. STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH II (4)
Application of statistical techniques to the study of educational problems: Multiple correlation and regression, Introductory Factor Analysis and selected non-parametric techniques.

EDQ 608. STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH III (4)
Application of statistical techniques to the study of educational problems: Trend analysis, analysis of variance models and expectation of mean squares; Analysis of covariance; Method of least squares; Bayesian statistics (introduction).

EDQ 609. DESIGN OF EXPERIMENT-PRODUCT RESEARCH IN EDUCATION (4)
Basic Experimental research design theory and models appropriate for education.

EDQ 611. DESIGN OF DESCRIPTIVE-PROCESS RESEARCH (4)
Theory and procedures for conducting descriptive research in education.

EDQ 612. ANALYSIS OF DEMOGRAPHIC DATA FOR EDUCATIONAL RESEARCH
Fundamental procedures for the study and use of demographic data relevant to educational decisions.

EDQ 613. COMPUTER PROGRAMMING FOR EDUCATIONAL RESEARCH
Computer Solution of Educational Research and Administrative related Problems using FORTRAN as a programming language.

EDQ 620. PLANNING EVALUATION AND DEVELOPMENT IN EDUCATION (4)
The major theories, models and issues related to planning evaluation and development will be studied, discussed and evaluated. Practical experience will be gained in preparing planning proposals and evaluative reports. Emphasis will be placed on applied aspects related to conducting planning, evaluation and development activities in operational settings.

EDQ 621. SYSTEMS APPROACHES TO EDUCATIONAL PLANNING AND DEVELOPMENT (4)
The course will involve a study of primary materials presenting the basic theoretical formulations of systems approaches. The transition from theory to practice will be made by involving students in specific exercises and experiences involving systems procedures. Upon completion of the course, participants will be able to apply systems approaches to educational problems.

Reading Education

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDR 509. CURRENT TRENDS IN READING IN THE SECONDARY SCHOOL (4)
Developmental reading for the upper grade level junior high school pupils and all grade level senior high school pupils.

EDR 530. CORRECTIVE READING FOR CLASSROOM TEACHERS (4)
PR: EDE 409 or EDR 509 or equivalent. Procedures and materials for individual and group corrective reading in the classroom.

FOR GRADUATE STUDENTS ONLY

EDR 631. DIAGNOSIS OF READING DISABILITIES (4)
PR: EDF 605 and EDE 609 or EDR 509. Research concerning causes of reading disability; diagnostic procedures; techniques and materials in diagnosis of reading problems.

EDR 632. TECHNIQUES OF CORRECTIVE AND REMEDIAL READING (4)
PR: EDE 609 or EDR 509, and EDR 631. Materials and methods in remediation of moderate to severe reading disability cases.

EDR 633. PRACTICUM IN READING (3-6)
PR: EDE 609 or EDR 509, EDR 631 and EDR 632 and CI. Clinical diagnosis of severe reading disability cases, tutoring of individuals and small groups, interview techniques, preparation of case reports.

EDR 634. CURRICULUM AND SUPERVISION PROBLEMS IN READING (4)
PR: EDE 609 or EDR 509. Planning and administering programs and preparation as consultants in reading. Intensive work on individual project required.

EDR 635. SURVEY OF READING RESEARCH (4)
PR: EDF 601, EDE 609 or EDR 509. Critical analysis of current reading research; individual report or paper required.

Special Education

***EDS 211. INTRODUCTION TO SPECIAL EDUCATION (3)**
Characteristics of exceptional children and professional opportunities available in Special Education.

***EDS 311. EXCEPTIONAL CHILDREN IN THE SCHOOLS (4)**
PR: EDF 305 or CI. Characteristics and needs of the Culturally Disadvantaged, Emotionally Disturbed & Socially Maladjusted, Gifted, Hearing Impaired, Mentally Retarded, Physically Handicapped, Speech Impaired, & Visually Limited.

EDS 312. COMMUNICATION DISORDERS IN THE CLASSROOM (4)
Aiding the child with a speech, hearing, or language disorder in a classroom setting.

EDS 322. INTRODUCTION TO MENTAL RETARDATION (4)
PR: EDF 305, EDS 311, or CI. Classification, diagnosis, characteristics, and treatment of the mentally retarded.

EDS 329. UNDERGRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION (6)
Supervised Practicum experiences in the educational, social and vocational planning of mentally retarded individuals.

EDS 359. FIELD WORK WITH GIFTED CHILDREN (1-6)
Organized, supervised experiences with gifted children. Specific experiences may be either a combination of observation and assistance with gifted children or individualized projects.

EDS 423 I & II. EDUCATIONAL PROCEDURES FOR THE EDUCABLE MENTALLY RETARDED (4,4)
PR: EDS 322, EDC 401, or CI. Special class organization, curriculum adjustments, methods and techniques of teaching the educable retarded.

* EDS 211 restricted to freshmen and sophomores; EDS 311 restricted to juniors and seniors. Credit cannot be received for both courses.

EDS 424. EDUCATIONAL PROCEDURES FOR THE TRAINABLE MENTALLY RETARDED (4)
PR: EDS 322 or CI. Special class organization, curriculum adjustments, methods and techniques of teaching the trainable retarded.

EDS 479. SCHOOL PRACTICUM IN SPEECH PATHOLOGY (1-14)
Supervised practicum in Speech Pathology & Audiology in the school setting.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDS 511. THE SLOW LEARNER IN THE SCHOOL (4)
Characteristics, needs and educational planning for the slow learning child. Appropriate for special class teachers and regular class teachers.

EDS 529. GRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION (1-14)
Supervised graduate practicum encompassing teaching and supervising experiences in public school classes for the mentally retarded.

EDS 531. BEHAVIOR DISORDERS IN THE SCHOOLS (4)
PR: EDF 305 or EDF 377 or PSY 201 or CI. Survey of emotional and social disorders in children and the implications for educational programs. Students may not receive credit for both EDS 531 and PSY 613, Behavioral Disorders of Children.

EDS 541. THE CULTURALLY DISADVANTAGED AND THE SCHOOLS (4)
Characteristics and needs of the culturally disadvantaged and their implications for educational programming.

EDS 550. NATURE AND NEEDS OF THE GIFTED (4)
Characteristics and educational needs of gifted children and youth.

EDS 551. EDUCATIONAL PROCEDURES FOR THE GIFTED (4)
PR: EDS 550 or CI. Curriculum adjustments, methods and techniques, classroom organization necessary for teaching the gifted.

EDS 552. CREATIVE PROBLEM SOLVING FOR THE GIFTED (4)
Exploration of the concept of creativity, its factors, measurement and application to education. Opportunities are given to work with children in a laboratory setting and to prepare materials to be used with small groups of children.

EDS 559. FIELD WORK FOR THE GIFTED (1-14)
Planned supervised participation in activities related to specific areas of the gifted.

EDS 561. EDUCATIONAL PROBLEMS OF THE PHYSICALLY HANDICAPPED (4)
PR: EDS 311 or CI. Introduction to the educational, psychological and social problems of the physically disabled child in the public schools.

EDS 579. SCHOOL PRACTICUM IN SPEECH PATHOLOGY (1-14)
Supervised practicum in Speech Pathology & Audiology in the school setting.

FOR GRADUATE STUDENTS ONLY

EDS 610. SEMINAR IN SPECIAL EDUCATION (4)
A critical survey of the literature related to the psychological, sociological, and education problems of exceptional children.

EDS 611. PSYCHO-EDUCATIONAL APPRAISAL OF EXCEPTIONAL CHILDREN (4)
PR: EDF 303, 605, or CI. Educational planning for exceptional children based on diagnostic information.

EDS 612. SUPERVISION OF EXCEPTIONAL CHILD PROGRAMS (4)
PR: CI. Principles of supervision and their application to exceptional child education.

EDS 613. ADMINISTRATION OF EXCEPTIONAL CHILD PROGRAMS (4)
PR: CI. Procedure which local, state, and national administrators may use to implement services for exceptional children.

EDS 620. BIOLOGICAL AND PSYCHOLOGICAL ASPECTS OF MENTAL RETARDATION (4)
PR: EDS 322 and EDF 607, or CI. Evaluation of relevant literature.

EDS 621. SOCIOLOGICAL AND EDUCATIONAL ASPECTS OF MENTAL RETARDATION (4)
Evaluation of relevant literature.

EDS 622. ADVANCED EDUCATIONAL PROCEDURES FOR THE MENTALLY RETARDED (4-8)
PR: EDS 423, experience in teaching the retarded, identification of a problem prior to registration, or CI. Specific curriculum and methodological problems in teaching the retarded.

EDS 632. EDUCATIONAL PROGRAMMING FOR EMOTIONALLY DISTURBED CHILDREN I (4)
PR: EDS 531 and CI. Personality dynamics and research findings as related to the interpretation of distrubed behavior; techniques for the management of indiviudal, small group, and classroom behavior.

EDS 633. EDUCATIONAL PROGRAMMING FOR EMOTIONALLY DISTURBED CHILDREN II (4)
PR: EDS 531, 632, or CI. Personality dynamics and learning theory as related to the facilitation of learning and communication; techniques for teaching both individuals and groups with emphasis on improved interpersonal relations, academic learning, and communication skills.

EDS 639. FIELD WORK IN EMOTIONALLY DISTURBED (1-14)
PR: EDS 531 (may be taken concurrently) and CI. Supervised graduate practicum experiences with emotionally disturbed children.

EDS 649. FIELD WORK WITH POTENTIALLY HANDICAPPED (CULTURALLY DISADVANTAGED): (1-9)
Teaching and participation in activities related to teaching disadvantaged young children (N-3).

EDS 660. THE VISUALLY HANDICAPPED IN THE CLASSROOM (4)
PR: EDS 311 or CI. A survey of modern techniques to assist teachers in a broader understanding of the recognition of visual problems. Hygiene, structure and educational implications.

EDS 662. EDUCATIONAL PROBLEMS OF THE PHYSICALLY HANDICAPPED (4)
PR: EDS 311 or CI. Introduction to the educational, psychological and social problems of the pysically disabled child in the public schools.

EDS 676. SPEECH & LANGUAGE DISORDERS (4)
Group management procedures for amelioration of speech and language problems. The nature of disorders of communication and management of verbal behavior.

English

EDT 447. TEACHING METHODS IN THE SECONDARY SCHOOL—ENGLISH (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in English Education.

EDT 463. TEACHING METHODS IN THE SECONDARY SCHOOL JOURNALISM (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in journalism.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDT 531. CURRENT TEACHING OF THE ENGLISH LANGUAGE (4)
Application of recent techniques of language study, including structural and transformational grammar, to classroom teaching of English, especially in relation to current textbooks. (For graduate credit: PR: ENG 517 or ENG 535 and certification in English.)

FOR GRADUATE STUDENTS ONLY

EDT 621 CURRENT TRENDS IN TEACHING SPEECH COMMUNICATIONS (5)
PR-CI: Curricular patterns; instructional materials, facilities and practices used in teaching speech communications.

EDT 622. SEMINAR IN THE HISTORY OF SPEECH COMMUNICATION IN EDUCATION (5)
PR-CI: Studies in selected sources, critical writings, and research which have contributed to the development of speech communication as an academic discipline.

EDT 631. CURRENT TRENDS IN SECONDARY ENGLISH EDUCATION (4)
Curricular patterns and instructional practices in secondary English.

Vocational and Adult Education

EDV 141. INTRODUCTORY TYPEWRITING (3)
Basic skills of typewriting for personal use, common types of business letters, manuscripts, reports and tabulated materials. Credit by examination may be given to those students who have had less than one year prior instruction in typewriting.

EDV 143. ADVANCED TYPEWRITING (3)
Development of speed and accuracy, and a continuation of skill building procedures in production typewriting, emphasizing mailable transcripts.

EDV 251. INTRODUCTORY SHORTHAND (5)
PR: EDV 141 or equivalent. Introduction to basic skills and vocabulary in the Diamond Jubilee series of Gregg Shorthand.

EDV 252. INTERMEDIATE SHORTHAND (4)
PR: EDV 143, 251 or equivalent of each. Review of basic skills and vocabulary and emphasis on dictation speeds.

EDV 351. ADVANCED SHORTHAND DICTATION AND TRANSCRIPTION (4)
PR: EDV 143 and 252, or equivalent of each. Emphasis on advanced dictation speeds and transcription of mailable business communications.

EDV 353. ADMINISTRATIVE OFFICE MANAGEMENT (5)
Functions of the business office to include systems and procedures, communications, records management, office employee behavior, controlling the work of the office, principles of office organization, and planning for office equipment and supplies.

EDV 361. BUSINESS AND OFFICE MACHINES (5)
Instruction and practice on selected business and office machines to acquaint students with capabilities and limitations of the machines.

EDV 407. THE TEACHER IN A WORLD OF WORK (4)
A study of educational efforts in preparing people for work, the relationship of a job to man's life style, and the concept of education as a lifelong process.

***EDV 431, SUPERVISED FIELD EXPERIENCE: (Specialization) (4-8)**
PR: CI. Planned supervised functions in the area of specialization and co-ordinated with selected schools, government, offices, social agencies, businesses and industries on site.

***EDV 443. SPECIAL TEACHING METHODS: (Specialization) (5)**
Methods, techniques, and materials for skill development.

***EDV 445. METHODS OF TEACHING: (Specialization) (4)**
Methods, techniques, and materials for instruction.

EDV 461. OFFICE OCCUPATIONS PROCEDURES (5)
PR: EDV 143, 351, 361, and Senior standing. This course is designed to integrate learnings from preceding business and office education courses. Applications involve actual and simulated office situations, problems, and evaluation. Emphasis is placed on the qualifications needed for efficient business office operations.

***EDV 480. FACILITY DESIGN AND MANAGEMENT: (Specialization) (4)**
Design and develop instructional facility floor plans consistent with modern and efficient methods of instruction as well as evaluate existing classrooms, laboratories, and shops. Selection and location of equipment. Review and prepare operational plans for the management of equipment, furniture, tools, and supplies as they relate to effective student learning.

* Areas of specialization in these courses are: Adult Education, Business Education, Distributive Education, and Industrial-Technical Education.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

***EDV 503. LEARNING AND CURRICULUM CONSTRUCTION: (Specialization) (4)**
Planning and organizing an instructional program for the purpose of developing an occupational competency.

***EDV 504. PREPARATION AND DEVELOPMENT FOR TEACHING: (Specialization) (4)**
The development of selected instructional materials, use of new educational media, performance evaluation instruments, an l counseling techniques.

***EDV 506. PROGRAM MANAGEMENT: (Specialization) (4)**
Organization, co-ordination, and budgeting of adult, co-operative, and special programs.

EDV 507. PRINCIPLES OF ADULT AND VOCATIONAL EDUCATION (4)
An overview of current policies and principles to include their historical, sociological and philosophical bases out of which principles of adult and vocational education have been accepted and implemented.

EDV 511. SCHOOL-COMMUNITY DEVELOPMENT (4)
An approach to identifying and analyzing, developing and maintaining working relationships between appropriate school and community institutions, their channels of communication for the purpose of cooperative program involvement.

FOR GRADUATE STUDENTS ONLY

EDV 605. ADULT BASIC EDUCATION (4)
An overview of adult basic education with emphasis on current issues and problems of curriculum and instruction in program development for culturally different adults.

***EDV 621. INDIVIDUALIZED INSTRUCTION: (Specialization) (4)**
Attention is given to individualized instruction to include the special needs student, the slow learner, and the more capable student.

***EDV 631. CURRENT TRENDS: (Specialization) (4)**
Historical information, issues, current trends, new dimensions and problems in the area of specialization.

***EDV 641. STAFF DEVELOPMENT: (Specialization) (4)**
Implementation of new procedures addressed to discreet developmental needs of the staff as identified by an educational agency.

***EDV 651. PRACTICUM: (Specialization) (4-8)**
A problem-centered field study in the local community, school, government, office, social agency, business or industry.

EDV 661. SUPERVISION OF LOCAL PROGRAMS: ADULT OR VOCATIONAL (4)
PR: CI. A study of the factors involved in the supervision of instruction including plans for teacher education, improvement of instruction, coordination of activities, and personnel relations.

EDV 671. ADMINISTRATION OF LOCAL PROGRAMS: ADULT OR VOCATIONAL (4)
A study of the organization, selection of personnel, assignment of duties and responsibilities, and establishment of policies and procedures to accomplish the objectives of the local program within the federal, state, and local requirements.

***EDV 687. SEMINAR: (Specialization) (4)**
PR: EDF 605 & 607. Applied research techniques and investigation of important current issues or theses in the area of specialization.

Social Studies

EDW 461. TEACHING METHODS IN SECONDARY SCHOOL—SOCIAL STUDIES (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in social studies.

* Areas of specialization in these courses are: Adult Education, Business Education, Distributive Education, and Industrial-Technical Education.

FOR GRADUATE STUDENTS ONLY

EDW 643. CURRENT TRENDS IN SECONDARY SOCIAL STUDIES (4)
Curricular patterns and instructional practices in secondary social studies.

Foreign Languages

EDX 449. TEACHING METHODS IN THE SECONDARY SCHOOL-FOREIGN LANGUAGE (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in foreign languages. To be taken in the quarter prior to internship.
EDX 465. TEACHING METHODS IN THE SECONDARY SCHOOL—LATIN (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in Latin.

FOR GRADUATE STUDENTS ONLY

EDX 649. CURRENT TRENDS IN SECONDARY FOREIGN LANGUAGE EDUCATION (4)
PR: Consultation with instructor, plus foreign language fluency. Curricular patterns and instructional practices in the teaching of secondary foreign languages.

Humanities

FOR GRADUATE STUDENTS ONLY

EDY 633. CURRENT TRENDS IN THE TEACHING OF HUMANITIES (4)
Curricular patterns, materials, and instructional practices in the teaching of humanities.

ENGINEERING

Faculty: Abbey, Anderson, Bean, J. Bowers, Burdick, Burgett, Busot, Cowell Devine, Donaldson, Doty, Downey, Ellis, Filipowsky, Fraze, Friebele Garcia, Garrett, Glass, J. Gonzalez, Griffith, Henning, Henry, Hilley, Howell, Kopp, Lane, Lawton, Naehring, Nienhaus, Oline, Packer, Parr, Payne, Rashad, Ratliff, Rhodes, Rimbey, B. Ross, Sergent Scott, N. Small, N. Smith, Wilma Smith, Wm. Smith, Sortor, Thompson, Twigg, Weaver, Wimmert, Zobrist.

Basic Engineering Course Work

EGB 101. GRAPHIC ANALYSIS I (4)
The theory and application of projective systems and related topics. Basic problems in descriptive geometry. (lec-lab)
EGB 102. GRAPHIC ANALYSIS II (3)
PR: EG 101. Principles of graphic and numeric analysis. Applied problems in graphic statistics, emperical data, projective geometry, graphic calculus, and other graphic techniques for the solution of engineering problems.
EGB 103. GRAPHIC ANALYSIS III (3)
CR: EGB 101. An elective course designed for students with limited background in pre-calculus mathematics necessary for graphical processes. Emphasis on graphical concepts of algebraic and trigonometric relationships.
EGB 104. GRAPHIC ANALYSIS IV (3)
CR: EGB 102. Continuation of EGB 103.
EGB 201. ENGINEERING PROBLEMS I (2)
CR: MTH 203. Elective course for engineering majors. Applied problems paralleling mathematics sequence.

EGB 203. ENGINEERING MEASUREMENTS (3)
PR: EGB 102. An introduction to the concepts of a systems approach and various techniques of measurement in engineering systems, both discrete and continuous. (lec-lab)

EGB 231. PROGRAMMING I—INTRODUCTION (1)
Basic computer operation, programming a computer using machine language, assembly languages and FORTRAN.

EGB 232. PROGRAMMING II—FORTRAN (2)
PR: EGB 231. Continuation of EGB 231.

EGB 301. ENGINEERING PROBLEMS II (2)
CR: MTH 303. Continuation of EGB 201.

EGB 302. ENGINEERING PROBLEMS III (2)
CR: MTH 304. Continuation of EGB 301.

EGB 303. ENGINEERING PROBLEMS IV (2)
CR: MTH 305. Continuation of EGB 302.

EGB 311. INTRODUCTION TO ELECTRICAL SYSTEMS I (3)
PR: PHY 255-226, MTH 304. A course sequence in linear passive circuits, electronic circuits and electromechanical devices. Physical principles and modes. Transient and steadystate analysis. System considerations.

EGB 312. INTRODUCTION TO ELECTRICAL SYSTEMS II (3)
PR: EG 311. Continuation of EGB 311.

EGB 313. INTRODUCTION TO ELECTRICAL SYSTEMS II (3)
PR: EGB 311. Continuation of EGB 311 or EGB 312.

EGB 321. THERMODYNAMICS I (3)
PR: PHY 223. Introduction to Thermodynamics; Thermodynamic concepts of system, control volume, process, cycle, property, and state. The Zeroth Law of Thermodynamics and temperature scales. Properties of ideal and pure substances. Concepts of Work and Heat. The First Law of Thermodynamics.

EGB 322. THERMODYNAMICS II (3)
PR: EGB 321. Continuation of EGB 321. The Second Law and its consequences. Entropy. The Carnot and heat engine cycles. Mixtures of ideal gases and psychrometry. Approximations to behavior of "real" gases. Concepts of reversiblity, availability and efficiency.

EGB 325. DYNAMIC RESPONSE OF ENGINEERING SYSTEMS I (4)
PR: EGB 340, MTH 303. Linear dynamic analysis of electrical, mechanical, pneumatic, hydraulic and thermal systems. Introduction to analog computers; LaPlace transformation. Block diagram representation, transient and frequency response. (lec-lab).

EGB 337. ENGINEERING VALUATION I (3)
PR: EGB 231, MTH 303. A study in analyzing the economic limitations imposed on engineering activities using basic models which consider the time value of money.

EGB 340. SOLID MECHANICS I (5)
CR: PHY 221. Principles of statics, equilibrium of rigid bodies, elestostatics of simple structural elements (lec-problem)

EGB 341. SOLID MECHANICS II (4)
PR: EGB 340. Dyanamics of discrete particles and distributed mass bodies; spatial kinematics and kinetics. (lec-problem)

EGB 342. ENGINEERING MATERIALS I (6)
PR: CHM 213, EGB 340. An introduction to the structure and properties of engineering materials. (lec-lab)

EGB 343. FLUIDS I (6)
PR: EGB 341. Fundamental and experimental concepts in ideal and viscous fluid theory; momentum and engergy considerations; compressible flow; boundary layer, Navier-Stokes equation. (lec-lab)

EGB 401. ENGINEERING ANALYSIS I (4)
PR: MTH 304. Application of differential equations.

EGB 501, 502, 503, 504, 505. ENGINEERING ANALYSIS II, III, IV, V,VI (3 each)
PR: CC or MTH 401. Ordinary differential equations with emphais on numerical methods and series solutions; boundary value problems; orthogonal functions; vec-

tor analysis; partial differential equations; the LaPlace transform; functions of a complex variable.

EGB 601. ENGINEERING ANALYSIS VII (3)
PR: CC. Applications of applied mathematics to the study of linearized dynamic systems and networks; state space; stability theory; extensions to discrete and nonlinear systems.

Electrical and Electronic Systems

EGE 301, 302, 303, 404, 405, 406. LABORATORIES 1 through 6 (1 each)
PR: EGB 311, 312; CR: EGE 410, 420, 421, 430, respectively.

EGE 310, 410. NETWORK ANALYSIS AND DESIGN I, II (3 each)
PR: EGB 311. A second course in linear circuit analysis and design. Transient and steady-state responses of passive R-L-C networks to various forcing functions.

EGE 320, 420. ELECTRONICS I, II (3 each)
PR: EGB 312. A second course in the physical principles of electronic devices with emphasis on semi-conductor electronics. Includes the analysis and design of amplifiers and switching circuits.

EGE 330, 430. FIELDS AND WAVES I, II (3 each)
PR: PHY 225-226, EGB 401. A basic introduction to electromagnetic field theory, including static and dynamic electromagnetic fields.

EGE 404, 405, 406, SEE EGE 301

EGE 410. SEE EGE 310.

EGE 411. LINEAR SYSTEMS ANALYSIS (3)
PR: EGE 410. Provides further study in the analysis of linear networks and systems. Includes time and frequency domain points of view. LaPlace, Fourier and Superposition integrals.

EGE 420. SEE EGE 320

EGE 421. COMMUNICATION CIRCUITS (3)
PR: EGE 420. Provides further study in electronic circuits. Includes oscillator, modulator, and detector analysis and design.

EGE 425. COMMUNICATION ENGINEERING (3)
PR: EGE 421. System considerations of electronic circuits; radio propagation; antennas; transmitters and receivers.

EGE 430. SEE EGE 330.

EGE 432. DISTRIBUTED NETWORKS (3)
PR: EGE 330, EGE 410. Transmission lines, standing waves, impedance, waveguides.

EGE 440. LINEAR CONTROL SYSTEMS (3)
PR: EGB 325. Introduction to analysis and design of linear feedback control systems. Covers block diagrams, flow charts, Bode, Nyquist and Root Locus techniques.

EGE 441. CONTROL LABORATORY (1)
CR: EGE 440.

EGE 444, LOGIC DESIGN (3)
PR: EGB 312. Binary number system; truth functions; Boolean algebra; canonical forms; minimization of combinational logic circuits; logic circuits in computers.

EGE 445. LOGIC LABORATORY (1)
CR: EGE 444.

EGE 450. MICROELECTRONICS ENGINEERING (3)
PR: PHY 323, EGE 410, 420, 330. Principles of microminiaturization of electrical circuits. Fabrication techniques, component realization, component isolation, parasitics.

EGE 451. MICROELECTRONICS LABORATORY (1)
CR: EGE 450.

EGE 460, 462, 464. ELECTROMECHANICS I, II, III (3 each)
PR: EGB 312. Theory of electromechanical energy conversion. Characteristics and control of rotating electrical machines, transformers, electromagnets, loudspeakers, microphones, transducers.

EGE 461, 463, 465. ELECTROMECHANICS LAB 1, 2, 3 (1 each)
CR: EGE 460, 462, 464 respectively.

EGE 474, 476, 478. SYSTEMS ANALYSIS I, II, III (5 each)
PR: CC. A course series to permit non-electrical majors to take advanced course work in the electrical area.

EGE 475, 477, 479. SYSTEMS LABORATORIES 1, 2, 3 (1 each)
CR: EGE 474, 476, 478 respectively.

EGE 480, 481, 482. SPECIAL ELECTRICAL TOPICS I, II, III (1-4 each)
PR: CC.

EGE 499. DESIGN PROJECT (3)
PR: Senior Standing. An individual or team project involving the design of an electrical component or system. Required of all electrical seniors.

EGE 520. PULSE CIRCUIT PRINCIPLES (3)
PR: EGE 411, 421. An introduction to the analysis and design of pulse and timing circuits with applications.

EGE 530. UHF PRINCIPLES (3)
PR: EGE 411, 421, 430. A study of tubes, devices and circuits peculiar to systems which operate at ultra high and super high frequencies.

EGE 531. UHF LABORATORY (1)
CR: EGE 530.

EGE 540. NONLINEAR CONTROL SYSTEMS (3)
PR: EGE 440. Principles of state-variables, phase-plane and describing functions.

EGE 541. CONTROL LABORATORY (1)
CR: EGE 540.

EGE 542. SEQUENTIAL CIRCUITS (3)
PR: EGE 444. The design of switching circuits with inputs that are functions of time is carried from a word description through a minimum state realization using flip-flops, logic gates and delay elements.

EGE 544. DIGITAL COMPUTERS (3)
PR: EGE 44. Digital arithmetic; computer subsystems, arithmetic units; control units; memory units; general purpose computers.

EGE 545. DIGITAL LABORATORY (1)
CR: EGE 544.

EGE 547. DISCRETE STRUCTURES FOR DIGITAL SYSTEMS (3)
PR: EGE 542. Set algebra, basic algebraic structures in computers, boolean algebra, propositional logic, and graphs. Applications to computers.

EGE 548. ELECTRICAL MEASUREMENTS (2)
PR: EGE 411. Techniques and principles of electronic measurement.

EGE 549. MEASUREMENTS LABORATORY (1)
CR: EGE 548.

EGE 560. POWER SYSTEMS ANALYSIS (3)
PR: CC. Analysis techniques for AC power systems.

EGE 580, 581, 582. SPECIAL ELECTRICAL TOPICS I, II, III (1-3 each)
PR: CC

EGE 585. ENGINEERING SEMINAR (1)
PR: CC

EGE 599. RESEARCH OR DESIGN (1-9)
PR: CC

EGE 610, 611. ADVANCED CIRCUIT THEORY I, II (3 each)
PR: CC. Network fundamentals; network characterization; frequency analysis; superposition integrals; signal-flow techniques; stability problems; real-and-imaginary relations.

EGE 612. NONLINEAR CIRCUITS (3)
PR: CC. Analytical and topological approaches to nonlinear circuits; nonlinear resonance; relaxation oscillations.

EGE 614, 615, 616. NETWORK SYNTHESIS I, II, III (3 each)
PR: CC. Network functions; physical realizability; two-terminal network synthesis methods; frequency transformation; potential analogy; approximation problems; insertion-loss and transfer function synthesis.

EGE 620. INFORMATION THEORY (3)
PR: CC. Concepts of information, information channels, channel capacity, information sources and Shannon's fundamental theorem.

EGE 622. NOISE THEORY (3)
PR: CC. Electrical noise and signals through linear filters and electronic systems.

EGE 623. CODING THEORY I (3)
PR: CC. Error-correcting codes, algebraic block codes, linear codes and feedback shift registers, BCH codes and decoding methods.

EGE 624. CODING THEORY II (3)
PR: EGE 623. Convolutional codes: threshold decoding and sequential decoding. Burst error codes. Arithmetic codes.

EGE 626, 627, 628. THEORY OF COMMUNICATION I, II, III (3 each)
PR: CC. Physical basis and statistical representation of electrical noise; filtering, modulation, and de-modulation of signals corrupted by noise; correlation techniques and linear prediction; statistical estimation of signal parameter; optimum filters and receivers; ambiguity functions and inverse probability. Quantitative measure of information sources, noise channels and channel capacity; an introduction to error-correcting codes.

EGE 630, 631, 632. ELECTROMAGNETIC FIELDS AND WAVES I, II, III (3 each)
PR: CC. Electromagnetic theory from the engineering point of view, propagation and reflection of waves, guided waves, resonant activities, antennas and radiation.

EGE 635. MICROWAVE GENERATION AND AMPLIFICATION (3)
PR: CC. A study of electromagnetic wave generation and amplification. Magnetrons, klystrons, solid-state microwave oscillators and related devices.

EGE 636. ELECTRICAL LABORATORY (1)
CR: EGE 635.

EGE 637. MICROWAVE COMPONENTS (3)
PR: CC. A study of directional couplers, junctions, cavities and other passive microwave components including microwave integrated circuits.

EGE 638. MICROWAVE NETWORKS (3)
PR: CC. Scattering and transfer representations of n-ports. Odd and even mode theory. Wave filters.

EGE 640. DIGITAL CONTROL SYSTEMS (3)
PR: EGE 440 or CC. Sample-data and digital control processes.

EGE 641. RANDOM PROCESSES IN CONTROL SYSTEMS (3)
PR: EGE 440 or CC. Sample-data and digital control processes.

EGE 641. RANDOM PROCESSES IN CONTROL SYSTEMS (3)
PR: EGE 440 or CC. Analysis and design of control systems subject to random inputs and disturbances.

EGE 642. MODERN CONTROL THEORY (3)
PR: EGE 440, 540, 640, 641 or CC. A study of modern control techniques including optimum and adaptive control.

EGE 644. AUTOMATA THEORY I (3)
PR: EGE 547. Review of mathematical foundations, decomposition and interconnection of digital machines, measurement and control of finite-state sequential circuits, machine identification, regular expressions and finite-state machines.

EGE 645. AUTOMATA THEORY II (3)
PR. EGE 644. Vector spaces over finite fields, linear sequential circuits, pseudo random sequences, turing machines, recursive function, computability.

EGE 646. AUTOMATA THEORY III (3)
PR: EGE 645. Artificial languages, phase-structure grammars, operations on languages, decision problems, discrete value random processes, Markov processes, probabilistic sequential machines, non-determininistic sequential machines.

EGE 647. SIMULATION TECHNIQUES FOR ELECTRICALS (3)
PR: CC. Theory of simulation of systems characterized by lumped and distributed parameters.

EGE 648. ELECTRICAL MEASUREMENTS (2)
PR: CC. Advanced techniques and principles of electronic measurement.

EGE 649. MEASUREMENTS LABORATORY (1)
CR: EGE 648.

EGE 650, 651, 652. SOLID STATE ELECTRONICS I, II, III (3 each)
PR: CC. Theory of operation and application of circuits and devices.

EGE 660, 661, 662. ELECTRIC POWER SYSTEMS I, II, III (3 each)
PR: CC. Steady-state and transient analysis of interconnected power systems; power circuit protection; transient characteristics of apparatus.

EGE 670. PULSE COMMUNICATIONS SYSTEMS (3)
PR: CC. Sampling theory-pulse waveform generation and modulation, PAM, PWM, PPM, related multiplex systems, telemetry applications.

EGE 671. DATA TRANSMISSION I (3)
PR: EGE 670. Quantization theory-binary coding systems, ideal binary transmission, on-off keying, FSK, PSK, PCM, applications.

EGE 672. DATA TRANSMISSION II (3)
PR: EGE 671. M-ary systems-MASK, MFSK, MPSK, orthogonal systems, multilevel and multistate coding, simplex codes, orthogonal and biorthogonal codes, polysignal systems, synchronization methods.

EGE 680. SPECIAL ELECTRICAL PROBLEMS I (1-3 each)
PR: CC.

EGE 690. ADVANCED ENGINEERING SEMINAR (1)
PR: CC.

EGE 699. RESEARCH OR DESIGN (1-18)
PR: CC.

ENERGY CONVERSION AND MECHANICAL DESIGN

EGR 311. THERMODYNAMICS III (3)
PR:EGB 322. The study of energy conversion processes and cycles as modified for optimization of capacity and efficiency. Applications include pumps, compressors, turbines, internal combustion engines, power and refrigeration cycles.

EGR 315. HEAT TRANSFER I (4)
PR: EGB 322. The basic laws of conduction, convection and radiation; analysis of the effect on heat transfer of thermal conductivity, emissivity, fluid transport properties and Reynold's number. (lec-lab)

EGR 326. DYNAMICS OF MECHANICAL SYSTEMS (3)
PR: PHY 221, MTH 303. Plane and angular motion; velocity and acceleration curves, velocities and accelerations in mechanisms, static and dynamic force analysis. Rolling and sliding contact pairs, cams, gear tooth action. (lec-lab)

EGR 348. PHYSICAL MEASUREMENTS I (3)
PR: EGB 311. Basic Electrical Measurements, Oscilloscopes, Recorders, Temperature Measurement, Displacement Measurement, Pressure Measurement , Flow Measurement. (lec-lab)

EGR 350. ENERGY CONVERSION LABORATORY I (2)
CR: EGB 322. Introduction to engineering laboratory measurements with emphasis on the writing of technical reports. Experiments in the measurement of concentrations, temperature, pressure, flow of fluids; determination of density, viscosity, diffusivities, analysis of combustion products. (lec- lab)

EGR 411. THERMODYNAMICS IV (3)
PR: EGR 311. Introduction to mathematical thermodynamics, the Maxwell relations, real gas behavior, ideal mixtures and solutions, introduction to phase and chemical equilibrium.

EGR 413. FLUID MACHINERY I (4)
PR: EGB 343. Performance characteristics of pumps and fans; energy conversion in fluid machines; design of piping and duct systems; proper selection of pumps and fans for given fluid systems; analysis of system efficiency parameters; correlation of design predictions with experimental data.

EGR 417. FUELS AND COMBUSTION (3)
PR: EGB 322. A study of the combustion characteristics of gaseous, solid and

liquid fuels and equipment needed to safely and economically control combustion processes. (lec-lab).

EGR 419. POWER PLANT ANALYSIS AND DESIGN (3)
PR: EGR 311, EGR 315. Parameters affecting utility power production; daily load curves; estimation of future loads; economics of power generation; system efficiency as affected by the thermodynamic cycle, multiunit scheduling, and load variation; heat transfer regions in the steam generator; water treatment methods.

EGR 421. INTRODUCTION TO NUCLEAR ENGINEERING I (3)
PR: PHY 323. Neutron density and thermalization parameters; criticality calculations; transient flux parameters; reactor operation; control instrumentation.

EGR 424. REFRIGERATION AND AIR CONDITIONING (3)
PR: EGR 311, EGR 315. Application of thermodynamics, heat transfer and fluid flow to the design of systems for controlling our environment; heating and cooling load calculations; psychrometrics of air conditioning processes.

EGR 428. MACHINE ANALYSIS AND DESIGN (3)
PR: EGB 340. Stress analysis, stress strain relations, deflection analysis, shock and impact, selection of materials, strength of materials. Principles of design. (lec-lab).

EGR 429. MECHANICAL DESIGN I (3)
PR: EGR 326, EGR 428. Application of the principles of engineering mechanics, materials and manufacturing to the analysis and design of mechanical elements. (lec-lab).

EGR 441. ANALOG COMPUTERS I (3)
PR: EGB 325, EGR 348 or CI. The study of linear and nonlinear engineering systems using analog computers Magnitude and time scaling. (lec-lab).

EGR 445. DYNAMIC RESPONSE OF ENGINEERING SYSTEMS II (3)
PR: EGB 325. Analysis of response of dynamic systems with emphasis on the inter-disciplinary nature of such response. A continuation of Dynamic Response I, EGB 325.

EGR 450. ENERGY CONVERSION LABORATORY II (1)
PR: EGR 350. Continuation of EGR 350 with emphasis on measurement techniques, energy balances of operating systems and technical report writing. (lec-lab).

EGR 453. MECHANICAL CONTROL (3)
PR: EGB 311, 325. Analysis of devices for measurement and control. Transmitters, error detectors, controllers and final control elements. Block diagram representation. (lec-lab).

EGR 471. CHEMICAL PROCESS CALCULATIONS (3)
PR: CHM 213, MTH 304, PHY 215. Mathematical formulation of industrial chemical process problems, including graphical and numerical methods. Principles of Stoichiometry.

EGR 472. TRANSPORT PHENOMENA (4)
PR: EGB 321, EGR 471. An introduction to momentum transfer, energy transfer, and mass transfer as applied to industrial chemical process problems.

EGR 473, 474. CHEMICAL PROCESS PRINCIPLES I, II (4 each)
PR: CHM 442, EGB 343, EGR 471. Application of transport concepts to the solution of problems concerned with the design, economics and operation of chemical process equipment; fluid flow, heat transfer, absorption, drying, evapo ration, crystallization, extraction, and distillation.

EGR 475. INDUSTRIAL CHEMISTRY (3)
PR: CHM 332, EGR 474. A critical study of selected chemical process industries in order to give the student a better understanding of the direct application of basic chemical process principles.

EGR 481. SPECIAL TOPICS ENERGY CONVERSION I (1-4)
PR: CC

EGR 482. SPECIAL TOPICS ENERGY CONVERSION II (1-4)
PR: CC

EGR 511. STATISTICAL THERMODYNAMICS (3)
PR: CI. The statistical and microscopic approach to molecular transport phenom ena. Boltzman and quantum statistics; entropy and probability; the third law of thermodynamics; evaluation of partition functions.

EGR 513. FLUID MACHINERY II (3)
PR: EGR 413. Performance characteristics of compressors and exhausters, vacuum pumps, and gas turbines; internal energy exchange and fluid flow paths; piping and ducting considerations; economic selection of proper equipment to match fluid and power system requirements; evaluation of off-design conditions.

EGR 515. HEAT TRANSFER II (4)
PR: EGR 315. A continuation of EGR 315. Analysis of non-steady heat transfer by mathematical and graphical means. Radiation from and through flames. Design of heat transfer equipment. (lec-lab).

EGR 522. ACOUSTICS AND NOISE CONTROL (3)
PR: CC. Fundamentals of sound propagation; sound power and intensity; psychoacoustics, industrial noise sources, methods of noise attenuation; community noise ordinances; instrumentation for noise measurement. (lec-lab).

EGR 523. MECHANICAL UTILITIES SYSTEMS (3)
PR: EGR 413, EGR 424. Analysis and design of a building's mechanical systems for fire and lightning protection, air conditioning, water supply, waste, and storm drains.

EGR 526. ANALYSIS METHODS FOR MECHANICAL DESIGN (3)
PR: EGR 428. Treatment of stress, strain and strength aspects of Machine Design. Application of failure theories, residual stresses and energy principles to machine elements.

EGR 527. ADVANCED DYNAMICS OF MACHINERY (3)
PR: EGR 326. A continuation of the undergraduate course and devoted to a more detailed study of velocities, accelerations and forces in machine parts having reciprocating, rotating and combined motions. A complete force analysis will be made of an internal combustion engine.

EGR 528. MECHANICAL DESIGN II (3)
PR: EGR 429. A continuation of EGR 429. (lec-lab).

EGR 529. PROJECT DESIGN (3)
PR: EGR 429. Correlation of previously acquired mechanical design experiences with a creative design project. (lec-lab).

EGR 533. MECHANICAL VIBRATION AND BALANCING (3)
PR: EGB 341, 401. Transient and steady state vibration analysis of mechanical systems with lumped parameters. Dynamic balancing, vibration isolation and simulation of systems.

EGR 535. LUBRICATION I (3)
PR: EGR 343, 401. The theoretical basis of lubrication and hyrdrodynamic bearing theory. The study of lubrication requirements of different types of machines.

EGR 541. ANALOG COMPUTERS II (3)
PR: EGR 441. A continuation of EGR 441. Logical mode control, constrained mechanical systems, parameter identification techniques. (lec-lab).

EGR 553. PROCESS CONTROL (3)
PR: EGR 453 or CI. Analysis and design of process control systems. Consideration of typical control sensors and controllers as well as advanced process control techniques such as feedforward and ratio control.

EGR 554. HYDRAULIC CONTROL (3)
PR: EGR 453 or CI. Hydraulic control system components and their effects on closed loop system performance. (lec-lab).

EGR 560. POWER UTILIZATION SYSTEMS (3)
PR: EGB 312. Standard electrical voltages, NEMA standards, motor parameters, motor control, control system elements, interlocks, conductors, raceways, National Electrical Code. Protective devices.

EGR 576. REACTOR DYNAMICS (5)
PR: EGR 474. Lecture: (3 contact hours) Introduction to design and control of chemical reactors with particular emphasis on the roles of mixing and heat

transfer. Laboratory: (6 contact hours). The student in this laboratory will be responsible for the safe and efficient manufacture of a "chemical" in the planned Chemical Process Laboratory.

EGR 577. DESIGN AND CASE PROBLEMS (3)
PR: EGR 474. DESIGN: This part of the course exposes the chemical student to the design of a chemical plant or a major part of a process. The annual A. I. Ch. E. student contest design problems and typical design problems supplied by local industries will be used. CASE PROBLEMS: This part of the course stresses engineering "art". The word "case" connotates a specific engineering problem situation actually experienced by someone in the past or present. The student must generate his own individual approach to problem solving, benefitting from those of others in the class.

EGR 581. SPECIAL TOPICS ENERGY CONVERSION III (1-4)
PR: CC.

EGR 582. SPECIAL TOPICS ENERGY CONVERSION IV (1-4)
PR: CC.

EGR 611. THERMODYNAMICS OF FLUID FLOW (3)
PR: CC. Interrelationship of the equations of fluid motion and of thermodynamics for ideal gases; subsonic and supersonic gas flows; flows with friction and with heat transfer; supersonic nozzle design; parameters of fluid thurst.

EGR 612. ADVANCED THERMODYNAMICS (3)
PR: CC. Advanced treatment of the general equations of thermodynamics, principal equations of chemical reaction; the chemical potential and equilibrium; analysis of metastable states. Irreversibility and steady flow.

EGR 615. HEAT TRANSFER III (3)
PR: CC. Advanced treatment of basic heat transfer phenomena. Radiation through absorbing and non-absorbing media; radiation from gases and plasmas; "grey" body calculations. Analysis of convective heat transfer by boundary layer theory and equations of fluid motion.

EGR 617. ENERGY TRANSFORMATION AND STORAGE (3)
PR: CC. Analysis of direct energy conversion systems; photoelectric cells, thermocouples, fuel cells, thermionic converters, magnetohydrodynamic devices, solar energy cells, rectifiers, inverters, energy storage devices.

EGR 621. INTRODUCTION TO NUCLEAR ENGINEERING II (3)
PR: CC. Continuation of EGR 420. Heat Transfer, fluid flow and energy removal in reactors. Reactor materials and fuels. Radiation protection and shielding, preliminary reactor design.

EGR 624. AIR CONDITIONING SYSTEMS (3)
PR: EGR 413, EGR 424. Analysis and design of air conditioning systems; criteria for selection of central systems, unit air conditioners, or self-contained units; performance characteristics of single zone systems, with and without reheat, multizone systems, double duct and variable volume systems.

EGR 629. ADVANCED MECHANICAL DESIGN (3)
PR: CC. A technical application course involving the problem of developing machines to perform specified functions. The machine to be designed will be designated by the instructor. The analysis will include evaluating all parts for stress, vibration, wear and proper consideration of manufacturing processes involved. (lec-lab).

EGR 630. APPLIED ENGINEERING ASPECTS OF FATIGUE (3)
PR: EGR 526. Evaluation of strength of machine members under fatigue loadings. Stress concentrations, residual stress effects, surface coatings, environmental effects. Statistical treatment in fatigue analysis.

EGR 633. VIBRATION ANALYSIS (3)
PR: EGR 533. Application of generalized coordinates, LaGrange's equation, matrix iteration, and other specialized methods to discrete multimass systems.

EGR 635. LUBRICATION II (3)
PR: EGR 535. A continuation of EGR 535 with emphasis on hydrodynamic squeeze film theory and gas lubricated bearings.

EGR 640. DIGITAL TECHNIQUES IN ENERGY TRANSFER SYSTEMS (3)
PR: EGB 333, EGR 441 or CI. Application of both general purpose and specialized programs to the solution of problems in the design of control systems, kinematic mechanisms and energy transfer systems. Some languages and programs to be used are FORTRAN, the Continuous System Modeling Program and the Mechanism Design Program.

EGR 642. DIMENSIONAL ANALYSIS AND MODEL THEORY I (3)
PR: CC. Theory of dimensional analysis, similitude, and design of models.

EGR 643. DIMENSIONAL ANALYSIS AND MODEL THEORY II (3)
PR: EGR 642. Continuation of EGR 642. Including model testing and corelation of tests with fractional analysis.

EGR 648. DIRECT DIGITAL CONTROL (3)
PR: EGB 503, EGR 553, 656 or CI. Application of digital computers to control of engineering processes. Includes study of digital filtering, Z-transforms, supervisory control, A / D and D / A conversion.

EGR 651. PHYSICAL MEASUREMENTS II (3)
PR: EGR 348, 441, 450 or CI. The techniques and theory for measuring temperature, pressure, displacement, speed, acceleration, force, power, and psychrometric properties with particular attention to dynamic measurement. (lec-lab).

EGR 656. NUMERICAL measurement and control (3)
PR: CC. Incremental and absolute control systems. Number systems used in numerical control. Digital to analog and analog to digital conversion. Applicatiions.

EGR 657. FLUID AMPLIFIERS AND CIRCUITS (3)
PR: CC. Analysis and design of fluid devices for use as amplifiers, logic devices and memory elements in instrumentation and control systems.

EGR 659. ADVANCED MECHANICAL CONTROL (3)
PR: EGR 445, EGB 502, EGE 540 or CI. Application of state space techniques to analysis and design of energy transfer control systems. Includes study of optimal control and adaptive control.

EGR 681. SPECIAL PROBLEMS I (1-4)
PR: CC.

EGR 682. SPECIAL PROBLEMS II (1-4)
PR: CC.

EGR 698. ADVANCED SEMINAR (1-3)
PR: CC.

EGR 699. RESEARCH OR DESIGN (1-9)
PR: CC.

INDUSTRIAL SYSTEMS

EGS 401. INDUSTRIAL SYSTEMS (3)
Introduction to organizational, planning and control functions in industrial systems.

EGS 402. INDUSTRIAL PROCESSES (3)
PR: EGB 337. Introduction to basic industrial processes emphasizing interdependency and similarities among industries. Students research specific industries and visit local industrial plants. lec-lab.

EGS 403, 404. PRODUCTION DESIGN I, II (3 each)
PR: EGS 402, 461. Methods study, predetermined time systems, wage administration, work measurement techniques including stop-watch time study, work sampling, standard data and production studies. lec-lab.

EGS 405, 406. PRODUCTION CONTROL SYSTEMS I, II (3 each)
PR: EGS 404, 441. Principles and techniques of industrial planning and control systems design. Cost analysis, forecasting and controlling production activities, including the use of CPM, PERT and LOB.

EGS 407. ENGINEERING VALUATION II (3)
PR: EGB 337 or equivalent. Analysis of economic limitations on engineering projects. Income tax considerations, replacement models, MAPI and obsolesence.

EGS 409. PLANT FACILITIES DESIGN I (4)
PR: EGS 405. Design and modification of plant facilities, including design of a

complete manufacturing operation. Problems in plant location, layout, material handling and equipment selection.

EGS 421. HYBRID COMPUTERS (3)
PR: EGB 232, EGS 325. The use of hybrid computers for the solution of problems in systems analysis. lec-lab.

EGS 423. COMPUTER SYSTEMS I (3)
PR: MTH 305, EGB 232 or equivalent. Alogrithms and computing. Computer organization and operating systems. Data management procedures. Structure and application of programming languages.

EGS 424. COMPUTER SYSTEMS II (3)
PR: EGS 423. Introduction to computer hardware. Peripheral subsytems. Transfer of information and control within a complete operating system. Executive systems and control monitors.

EGS 425. COMPUTER SYSTEMS III (3)
PR: EGS 424. A continuation of EGS 424 stressing detailed applications of machine and assembly language to computer operating systems.

EGS 427. FORTRAN APPLICATIONS I (3)
PR: EGB 232, MTH 305. Solution of engineering problems using digital computers. Numerical methods using FORTRAN.

EGS 429. COMPUTER PROJECTS (3)
PR: CC. Special projects involving the use of and operation of digital/analog computers.

EGS 441, 442. OPERATIONS RESEARCH I, II (3 each)
PR: EGS 461. An introduction to the basic operations research techniques—linear programming, dynamic programming, simulation and queueing.

EGS 461, 462. ENGINEERING STATISTICS I, II (3 each)
PR: MTH 303. An introduction to the basic concepts of statistical analysis. Prob ability, distribution functions, estimating and testing procedures, regression and correlation analysis.

EGS 503. HUMAN FACTORS (3)
PR: CC. Problems in the design, analysis and evaluation of man-machine systems from the viewpoint of physical, mental and psychological characteristics and limitations encountered.

EGS 505. INVENTORY CONTROL (3)
PR: EGS 406 or equivalent. Properties of inventory systems and the fundamentals of deterministic and probabilistic inventory models.

EGS 507. ENGINEERING VALUATION STUDIES (3)
PR: CC. The analysis of economic considerations affecting engineering decision making. Not open to students who have had EGS 407.

EGS 521, 522. COMPUTER SIMULATION I, II (3 each)
PR: CC. Use of digital, analog and hybrid computers in simulating physical and industrial systems.

EGS 533. FORTRAN APPLICATIONS II (3)
PR: EGS 333 or equivalent. Advanced numerical methods using FORTRAN, applied to higher level problems in the individual student's field of engineering, mathematics or applied science.

EGS 540. OPERATIONS RESEARCH (3)
PR: CC. Linear programming, game theoretic models, economic optimization. Not open to students who have had EGS 442.

EGS 541, 542. NUMERICAL METHODS OF SYSTEMS ENGINEERING I, II (3 each)
PR. MTH 401. The study and application of matrix algebra, differential equations, calculus of finite differences, operation and transform methods, and stochastic processes.

EGS 560. INDUSTRIAL STATISTICS (3)
PR: CC. Industrial applications of probability, testing of hypotheses, regression techniques and analysis of variance. Not open to students who have had EGS 462.

EGS 561, 562. DESIGN OF EXPERIMENTS I, II (3 each)
PR: EGS 462 or equivalent. Development of the basic experimental designs. Randomized block, latin squares and factorial designs.

EGS 563. ENGINEERING STATISTICS III (3)
PR: EGS 462 or equivalent. Application of non-parametric statistics, sequential analysis, orthogonal polynomials and other optimization techniques to industrial problems.

EGS 565. STATISTICAL QUALITY CONTROL (3)
PR: EGS 461 or equivalent. Application of statistical techniques to the control of industrial processes. Control charts and acceptance procedures. Sequential sampling.

EGS 566. RELIABILITY ENGINEERING (3)
PR: EGS 462 or equivalent. Fundamental concepts of reliability control. Estimation of reliability of systems and components. Measures of availability, maintainability and reliability.

EGS 580, 581, 582. SPECIAL INDUSTRIAL PROJECTS I, II, III (1-3 each)
PR: CC.

EGS 603. MAN/MACHINE SYSTEMS (3)
PR: EGS 503. Principles of work measurement, process analysis, value analysis, and human factors and their application to industrial situations.

EGS 605. PRODUCTION CONTROL SYSTEMS III (3)
PR: EGS 406 or equivalent. Forecasting procedures, development of production plans, scheduling techniques and inventory models. Application of EDP to production control systems.

EGS 607. ADVANCED ENGINEERING VALUATION (3)
PR: EGS 407 or equvalent. Statistical models for analyzing engineering alternatives from an economic viewpoint. The use of advanced engineering economy concepts in solving industrial problems.

EGS 609. PLANT FACILITIES DESIGN II (3)
PR: EGS 409 or CC. Advanced techniques for evaluation of alternative plans for plant arrangement, including equipment location and material handling systems.

EGS 620. COMPUTER THEORY I (3)
PR: EGS 425 or equivalent. Advanced concepts in computer organization. Combinatorial logic, data representation and transfer, control functions, storage and accessing. Input/output facilities. Modular programming concepts.

EGS 621. COMPUTER THEORY II (3)
PR: EGS 620. Advanced concepts in programming languages. The interrelation between machine, assembly and procedure oriented languages. Introduction to the design of monitors, assemblers, compilers.

EGS 622. COMPUTER THEORY III (3)
PR: EGS 621. Continuation and extension of EGS 621 emphasizing detailed design principles used in the construction of monitors, assemblers and compilers.

EGS 641. LINEAR PROGRAMMING (3)
PR: EGS 442 or equivalent. The simplex method, degeneracy, duality theory; applications of linear programming to industrial problems.

EGS 642. NONLINEAR AND DYNAMIC PROGRAMMING (3)
PR: EGS 641. Optimization procedures using nonlinear and dynamic programming. Analysis of multi-stage systems.

EGS 644. QUEUEING TREORY (3)
PR: EGS 442, 462. Deterministic and probabilistic queueing models. Poisson queues and special non-Poisson queues with exponential and non-exponential services. Single and multiple channel queues.

EGS 646. MULTIVARIABLE OPTIMIZATION (3)
PR: EGS 562, 563. Optimum seeking methods: search methods, response surfaces, ridge analysis and stochastic approximations.

EGS 647, 648. STOCHASTIC PROCESSES I, II (3 each)
PR: EGS 662. Theory and application of stochastic processes as models for empirical phenomena, with emphasis on the following processes: Poisson, stationary,

normal, counting, renewal, Markov, birth and death. Spectral representations, time series, smoothing and filtering.

EGS 666. THEORY OF RELIABILITY (3)
PR: EGS 462 or equivalent. Topics in statistical methodology which have applications in the field of reliability. Discrete and continuous distribution models, reliability estimation, reliability structure and growth models, and statistical design for reliability.

EGS 668. SPECIAL TOPICS IN STATISTICS (3)
PR: CC. Special topics in statistics related to research in engineering.

EGS 680, 681, 682. SPECIAL INDUSTRIAL TOPICS I, II, III (1-3 each)
PR: CC.

EGS 687, 688. INDUSTRIAL SYSTEMS DESIGN I, II (3 each)
PR: EGS 521. Design of integrated systems using statistical and operations research models. Simulation of integrated systems using digital, analog and hybrid computers.

EGS 698. ADVANCED ENGINEERING SEMINAR (1-3)
PR: CC.

EGS 699. RESEARCH OR DESIGN (1-12)

STRUCTURES, MATERIALS, FLUIDS

EGX 401. STRUCTURES I (5)
PR: EGB 232, 340. Elastic-plastic behavior of structural members. Introduction to energy concepts in structural analysis; introduction to the theory of elasticity. (lec-lab)

EGX 402. ENGINEERING MATERIALS II (4)
PR: EGB 342, EGB 321. Thermodynamics of Solid Materials. Entropy and free energy concepts applied to equilibrium and rate processes in metallic, ceramic and polymer systems. Metallography. (lec-lab.)

EGX 409. SENIOR RESEARCH/DESIGN PROJECT I (1)
PR: Completion of 150 hours. Presentation current and future problem-oriented research/design topics for engineers. Organization of student-faculty investigative teams for senior projects in EGX 509 or EGX 599.

EGX 410. STRUCTURES II (4)
PR: EGX 401. Introduction to the behavior of composite structural members: laminates, sandwich panels, reinforced concrete, timber and structures. (lec-lab)

EGX 411. CONCEPTS OF STRUCTURAL DESIGN (4)
PR: EGX 401. Applications of solid mechanics, materials science and structural analysis to the design of building, bridge, aircraft and ship structures. Critical review of current codes and specifications. (lec-lab)

EGX 420. CONCEPTS OF MATERIALS ENGINEERING (3)
PR: EGX 402. Application and selection of metals, ceramics, and polymers in engineering problems. Materials technology and failure analysis. (lec)

EGX 421. PROCESSES IN MATERIALS ENGINEERING (3)
PR: EGX 402 or CI. Introduction to the basic metal extraction and refining operations, discussion of the various techniques of elding and joining materials, and discussion of the primary methods of shaping and forming materials.

EGX 481. TRANSPORTATION I (4)
PR: EGB 203, CI. Introduction to Transportation Engineering. (lec)

EGX 485. SOIL MECHANICS I (4)
PR: EGB 341. Fundamental and experimental concepts in soil mechanics with emphasis on soil properties, soil moisture, soil structure and shearing strength. (lec)

EGX 503. FLUID MECHANICS II (4)
PR: EGB 343. Fundamental and applied aspects of compressible flow, free surface flow and unsteady flow. Flow of Compressible Gases, Free Surface Flow, Unsteady Flow.

EGX 504. EXPERIMENTAL SMF I (4)
PR: EGB 343. An introduction to the experimental methods used in the study of structures, materials, fluids. (lec-lab)

EGX 505. SOLID MECHANICS III (3)
PR: EGB 341. Dynamics of discrete and distributed mass, spatial kinematics, and kinetics, inertia tensor, Euler equations. (lec)
EGB 509. SENIOR RESEARCH/DESIGN PROJECT II (3)
PR: EGX 409. Problem-solving experience and training for seniors in research/design projects. Oral and written final reports are required.
EGX 510. STRESSED-SURFACE STRUCTURES I (5)
PR: EGX 410 and 511 or 576. Elastic and inelastic behavior of plate and shell structures; smooth and ribbed surfaces. Use of finite element techniques. (lec-lab)
EGX 511. STRUCTURES III (5)
PR: EGX 401. Elastic and plastic analysis of determinate and indeterminate frames and trusses. Emphasis on matrix-computer techniques. (lec-lab)
EGX 513. PRESTRESSED STRUCTURES (5)
PR: EGX 410. Analysis and design of prestressed structural systems. Emphasis on prestressed structural systems. Emphasis on prestressed concrete. (lec-lab)
EGX 514. STRUCTURAL CONNECTIONS (3)
PR: EGX 411. Use of theoretical and experimental data in the analysis and design of structural connections in metal, wood, concrete and plastic. (lec-lab)
EGX 515. STRUCTURES IV (5)
PR: EGX 511. Analysis of suspension structures, towers and tall buildings by both approximate and exact methods. (lec-lab)
EGX 516. STRUCTURAL DESIGN IN METALS (4)
PR: EGX 411, 511. Design of ductile metallic structural elements and systems. (lec-lab)
EGX 520. ENGINEERING MATERIALS III (4)
PR: EGB 342. The Structure of Solid Materials, Crystalline and glassy states in metals and ceramics. Diffraction methods in Materials Science.Electron microscopy. (lec-lab)
EGX 521. ENGINEERING POLYMERS (3)
PR: CC. Structure and bulk properties of polymers. High elasticity, topicsvisco-elasticity, the glass transition, irreversible deformation. Technology of plastics, fibers and elastomers. (lec)
EGX 522. CORROSION (3)
PR: EGX 402 or CI. Corrosion principles and forms of corrosion. Testing, failure analysis and protection. Emphasis on application to engineering problems. Introduction to electro-chemical kinetics. (lec)
EGX 523. DIFFUSION (3)
PR: EGX 402. Theoretical and practical analysis of diffusion in solids including the physical meaning and implications of the concepts which influence and apply to diffusion in crystalline solids. (lec)
EGX 524. FRACTURE MECHANICS (3)
PR: CI. Introduction to mechanics of fracture. Design and testing for fracture toughness; microscopic plastic deformation, crack propagation, fatigue, ductile-brittle transition. (lec-lab)
EGX 525. STRENGTHENING PROCESSES IN MATERIALS (3)
PR: EGX 402. Introduction to the separate and combined effects of theten primary strengthening mechanisms in materials. Application to the real material systems such as steels, titanium, berylium, nickel and refractorymetal alloys; and composites.
EGX 530. FLUID MECHANICS III (4)
PR: EGB 343. Mathematical hydrodynamics, inviscid flow. (lec-lab)
EGX 535. WATER RESOURCES ENGINEERING I (4)
PR: EGB 343. A study of the engineering principles involved in the sustaining and managing of the quality and quantity of water available for human activities with particular emphasis on hydrology and hydraulics.(lec)
EGX 536. WATER RESOURCES ENGINEERING II (4)
PR: EGB 343. A study of the engineering principles involved in the sustaining and managing of the quality and quantity of water available for human ac-

tivities with particular emphasis on water uses, engineering economy, and regional water resource development. (lec)

EGX 538. AERODYNAMICS (3)
PR: EGB 343. Fundamentals of compressible flow and flight dynamics. Structural Design; materials consideration. (lec)

EGX 540. EXPERIMENTAL SMF II (4)
PR: CC. Review of elasticity, boundary value problems, finite element solutions; static and dynamic applications, circuitry; grid, brittle coating methods. (lec-lab)

EGX 550. SOLID MECHANICS IV (3)
PR: EGB 341. Dynamics of Elastic Systems, Vibration of rods, plates, shells, structures; Energy and approximate solution techniques, transform techniques. (lec)

EGX 551. VIBRATIONS (3)
PR: EGX 505, Wave motion in solids and fluids, thermal and mechanical shock wave transmission and attenuation; blast loading. Phase-plane analysis. (lec)

EGX 570. INTRODUCTION TO CONTINUUM (3)
PR: CC. Development of techniques of applied mathematics to SMF problems; partial differential equations, complex variable, vector and tensor analysis. (lec)

EGX 571. CONTINUUM I (3)
PR: CC. Development of fundamental problems in solids and fluids froma unified viewpoint; application to ideal media; elastic, plastic, viscoelastic, and fluids. (lec)

EGX 572. CONTINUUM II (3)
PR: EGX 571. Mathematical Theory of elasticity. Two dimensional problems in plane stress and plane strain using cartesian and curvilinear coordinates; three dimensional applications to torsion, bending and semi-infinite solids. (lec)

EGX 573. MECHANICS OF COMPOSITE MATERIALS (3)
PR: EGX 401. Physical and Mathematical models for composites. Response to thermal, electrical and mechanical loading. Special compositesystems and shapes: filamentary plates, shells, isotensoid domes, etc.

EGX 575, 576. FINITE ELEMENT METHODS. (3)
PR: EGX 571 or CI. Finite element methods in continuum mechanics. Application to solid and fluid mechanics problems. Computer solutions. (lec)

EGX 580. SPECIAL TOPICS IN SMF (1-4)
PR: CC.

EGX 581. TRANSPORTATION II (4)
PR: EGX 481. Transportation system planning. (lec)

EGX 585. SOIL MECHANICS II (4)
PR: EGX 485. A study of the application of the principles of soil mechanics to problems in soils engineering. (lec)

EGX 598. RESEARCH IN SMF (1-4)
PR: CC.

EGX 599. RESEARCH IN SMF (1-4)
PR: CC.

EGX 610. STRESSED SURFACE STRUCTURES (5)
PR: EGX 401. Elastic and plastic behavior of plate and shell structures, smooth and ribbed surfaces. (lec-lab)

EGX 611. STRUCTURAL STABILITY I (5)
PR: EGX 511. Elastic and inelastic stability of trusses and frames, local buckling of structural members and plates.

EGX 612. STRUCTURAL DYNAMICS I (4)
PR: EGX 511. Behavior of structural components and systems when subjected to periodic dynamic loads. Introduction to random dynamic loads.

EGX 613. STRUCTURAL OPTIMIZATION (5)
PR: EGX 411, 511. Use of optimization techniques in the design of structures including use of the digital computer as a design aid. (lec-lab)

EGX 615. STRUCTURAL STABILITY II (4)
PR: EGX 610, 612. Elastic and inelastic stability of shells and latticed structures.

EGX 616. ADVANCED STRUCTURAL DESIGN (5)
PR: EGX 511, 514. A study of design of more complicated structural systems such as curved bridges, orthotropic bridges, tall buildings, towers,suspension structures.

EGX 617. STRUCTURAL DYNAMICS II (4)
PR: EGX 612. Emphasis on advanced techniques in analysis of dynamic behavior of structures: power spectral desnity function, statistical treatment of random vibrations. Vibration of shell structures.

EGX 618. STRESSED SURFACE STRUCTURES II (5)
PR: EGX 410, 610 and 615. Advanced analysis and design of smooth and ribbed shell structures made of both metallic and nonmetallic and composite materials. (lec-lab)

EGX 620. ENGINEERING MATERIALS IV (4)
PR: CC. Electronics processes in materials. Conductors and semi-conductors. Magnetic and Dielectric properties of solids, Quantum and statistical.models. (lec-lab)

EGX 621. ENGINEERING MATERIALS V (4)
PR: CC. Mechanical Behavior of Materials. Dislocation mechanics, plasticity, fracture. Mechanical failure mechanisms. Strengthening of solids. Elastic and anelastic behavior. (lec-lab)

EGX 622. MICROMECHANICS (3)
PR: CC. The discrete and continuum concepts in crystalline, poly-crystalline and composite materials. Size effect and the continuum limit. (lec)

EGX 623. ADVANCED X-RAY METHODS (4)
PR: CI. X-Ray diffraction analytical and experimental studies of defects,texture, residual stress, crystal and polycrystalline aggregates. (lec-lab)

EGX 630. FLUID MECHANICS IV (4)
PR: CC. Flow of Newtonian and Non-Newtonian viscous fluids. (lec-lab)

EGX 631. GAS DYNAMICS (3)
PR: CI. Fundamentals of compressible flow. Wave and shock motion in unsteady and steady flow. Subsonic and supersonic speeds. (lec)

EGX 640. EXPERIMENTAL SMF III (4)
PR: EGX 504. Moiré and photoelastic experimental techniques. (lec-lab)

EGX 641. EXPERIMENTAL SMF IV (4)
PR: EGX 504. Theory and application of photoelasticity (lec-lab)

EGX 642. EXPERIMENTAL SMF V (4)
PR: EGX 504. Three dimensional stress analysis methods. (lec-lab)

EGX 643. EXPERIMENTAL SMF VI (4)
PR: EGX 504. Theory and application of holography and optical imagery. (lec-lab)

EGX 650. SOLID MECHANICS V (3)
PR: EGX 505. Elastic and plastic stress wave propagation in solids, experimental and theoretical treatment, method of characteristics. (lec)

EGX 651. NONLINEAR DYNAMICS (3)
PR: EGX 505. Non-linear restoring force, viscous friction, Duffing and Van-der Pol's equations, perturbation methods. (lec)

EGX 660, 661, 662. HYDROSPACE ENGINEERING I, II, III, (3 each)
PR: CC. Advanced analysis of structural, material and fluid systems for marine environment, including underwater acoustics. (lec)

EGX 670. CONTINUUM MECHANICS III (3)
PR: CC. Theory of Plasticity. Initial and subsequent yield surfaces, incremental and deformation theories, flow theories; problems in ideal plasticity, strain hardening and slip line fields. (lec)

EGX 671. CONTINUUM MECHANICS IV (3)
PR: CC. Theory of thermoelastic and viscoelastic behavior in continuous media. Basic laws of irreversible thermodynamics and elasticity and application to

one, two and three dimensional problems. Inelastic thermal stress. Viscoelastic-elastic analogy, linear viscoelastic theory and applications. (lec)

EGX 672. NUMERICAL METHODS IN ENGINEERING ANALYSIS (3)
PR: CI. Application of computational and mathematical techniques and principles to advanced engineering problems concerning structures, materials, fluids. (lec)

EGX 673. ADVANCED ELASTIC ANALYSIS (3)
PR: CI. Contemporary elasticity theory and applications. (lec)

EGX 674. APPLIED TENSOR ANALYSIS (3)
PR: CI. Tensor analysis applied to structures, materials, fluids. (lec)

EGX 675. WATER RESOURCE SYSTEMS (5)
PR: EGX 536. The planning, design, and operation of water resource systems by the use of systems analysis and operations research techniques. (lec)

EGX 680. SPECIAL TOPICS IN SMF (1-4)
PR: CC.

EGX 698. ADVANCED ENGINEERING SEMINAR (1-3)
PR: CC.

EGX 699. RESEARCH IN SMF (1-9)
PR: CC.

EGX 798. RESEARCH AND DISSERTATION (1-9)
PR: CC. Supervised independent research.

EGX 799. RESEARCH AND DISSERTATION (1-12)
PR: CC. Supervised independent research.

COMPUTER SERVICE COURSES

ESC 301. INTRODUCTION TO COMPUTERS I (3)
Basic principles of computer operation, program structure, machine and assembly language.

ESC 302. COMPUTER PROGRAMMING-FORTRAN (3)
PR: ESC 301. Programming of scientifically oriented problems using FORTRAN. Introduction to the use of the systems library.

ESC 303. COMPUTER PROGRAMMING-COBOL I (3)
PR: ESC 301. Introduction of computer systems and commercially oriented languages. Analysis of COBOL language elements and divisions. Development of file structures and application of the COBOL language.

ESC 304. COMPUTER PROGRAMMING—COBOL II (3)
PR: ESC 303. Advanced applications of COBOL. Development of matrix structures, subscripting and data manipulating techniques as used in comprehensive data processing problems.

ESC 310. INTRODUCTION TO COMPUTERS II (3)
PR: ESC 301. Component parts of a computer system. Internal representation and manipulation of data and program instructions. Algorithms and flowcharting. Programming languages and systems. (no credit for engineering majors)

ESC 311. INTRODUCTION TO COMPUTERS III (3)
PR: ESC 310. Continuation of the material in ESC 310. (No credit for engineering majors)

ESC 312. INTRODUCTION TO COMPUTERS IV (3)
PR: ESC 311. Continuation of the material in ESC 311. (no credit for engineering majors)

ESC 501. COMPUTER SYSTEMS (3)
PR: ESC 302 or equivalent. Study of computer systems components, 1/0 devices, memory devices, theory of computer operation. (Not available to students who have taken ESC 310, 311 and 312)

ESC 502, 503. COMPUTER LANGUAGES AND COMPUTATION 1, II (3 each)
PR: ESC 501. Study of principles of machine, assembly and compiled languages. Programming applications.

ESC 510. COMPUTER OPERATION (4)
PR: Graduate engineering or science status, EGB 232 or equivalent, and CC, A comprehensive study of computer operating systems for mature students who

have limited prior computer experience. Course covers material necessary to prepare the student for entry into the EGS 620, 621, 622 sequence.

ENGINEERING TECHNOLOGY

ETK 421. PRINCIPLES OF INDUSTRIAL OPERATIONS I (3)
PR: ETK classification or CC. Techniques of work measurement and methods design.

ETK 422. PRINCIPLES OF INDUSTRIAL OPERATIONS II (3)
PR: ETK 421. Techniques of production control and job evaluation.

ETK 423. PRINCIPLES OF INDUSTRIAL OPERATIONS III (3)
PR: ETK 422. Techniques of plant location and layout.

ETK 601. SPECIAL TECHNICAL TOPICS I (1-4)
PR: CC.

ETK 602. SPECIAL TECHNICAL TOPICS II (1-4)
PR: CC.

ETK 603. SPECIAL TECHNICAL TOPICS III (1-4)
PR: CC.

ENGLISH

Faculty: Parrish, chairman; Beauchamp, Bentley, Broer, Caflisch, R. Carr. Chisnell, Cole, Collins, W. Davis, Deats, I. Deer, R. Dietrich, Fabry, Figg, Fiore, Hall, Harmon, Hartley, Hatcher, Heim, Henley, Hirshberg, Iorio, Kaufmann, Kay, Mason, Moore, Morris, Ochshorn, O'Hara, Palmer, Parker, H. Popovich, Reader, Ross, Rubin, Sanders, Scheuerle (leave of absence), E. Smith (leave of absence), Valentine, Walther, Wyly, Zbar, Zetler.

ENG 131. READING ACCELERATION (2)
Designed to change the reading habits and patterns of students. (Also see Developmental Reading.)

ENG 201. MAJOR BRITISH WRITERS TO 1660 (4)
PR: CBS 102. An introduction to the poetry, prose, and drama of English literature from its beginning through the Metaphysical poets.

ENG 202. MAJOR BRITISH WRITERS, 1660-1780 (4)
PR: CBS 102. English literature from Milton through the pre-Romantics.

ENG 203. MAJOR BRITISH WRITERS, 1780-1912 (4)
PR: CBS 102. English literature from the Romantics through the late Victorians.

ENG 301. CURRENT FICTION (3)
An examination of significant fiction written since 1960. Recommended for nonmajors; will not be counted toward the major.

ENG 302. CURRENT DRAMA (3)
An examination of significant drama written since 1950. Recommended for nonmajors; will not be counted toward the major.

ENG 305. MAJOR AMERICAN WRITERS TO 1865 (4)
PR: CBS 102. A study of the major writers of the Colonial, Federal, and Romantic periods. These include Edwards, Taylor, Hawthorne, Poe, Emerson, Thoreau, and Melville.

ENG 306. MAJOR AMERICAN WRITERS, 1865-1912 (4)
PR: CBS 102. A study of the major realists and early naturalists. These include Whitman, Twain, James, Crane, Dickinson, Dreiser, and Robinson.

ENG 307. MODERN BRITISH AND AMERICAN WRITERS, 1912-1945 (4)
PR: CBS 102. Works by such American and British writers as Eliot, Pound, Yeats, Thomas, Shaw, Fitzgerald, Hemingway, Faulkner, Huxley, Woolf, Joyce, Lawrence, and others.

ENG 311. MASTERPIECES OF ENGLISH LITERATURE (5)
Examination of representative writers of English literature. Recommended for nonmajors; will not be counted toward the major.

ENG 312. MASTERPIECES OF AMERICAN LITERATURE (5)
Examination of representative writers of American literature. Recommended for nonmajors; will not be counted toward the major in Liberal Arts.

ENG 313. MASTERPIECES OF WORLD LITERATURE (5)
Examination of representative writers (exclusive of English and American) from the classical and medieval periods, the Renaissance and the Enlightenment, and the modern period. Will not be counted toward the major in Liberal Arts.

ENG 314. INTRODUCTION TO LITERATURE: GENERAL (4)
This course develops in the student the ability to read with understanding and interpret the genres of fiction, drama, and poetry. It is concerned with analysis rather than with historical periods. Recommended for nonmajors; will not be counted toward the major.

ENG 315. INTRODUCTION TO LITERATURE: FICTION (3)
An examination of the short story and the novel as a form. Recommended for nonmajors, it will not be tied to any historical period. Will not be counted toward the major.

ENG 316. INTRODUCTION TO LITERATURE: POETRY (3)
An examination of the poem as form. Recommended for nonmajors, it is not tied to any historical period. Will not be counted toward the major.

ENG 317. INTRODUCTION TO LITERATURE: DRAMA (3)
An introduction to drama as literature to be read rather than as literature to be performed. Recommended for nonmajors, it will not be tied to any historical period. Will not be counted toward the major.

ENG 319. THE BIBLE AS LITERATURE (4)
PR: CBS 102. Major emphasis on literary types, literary personalities of the Old and New Testaments, and Biblical archetypes of British and American literary classics.

ENG 321. NARRATION AND DESCRIPTION (4)
PR: CBS 102. Emphasis upon excellence in the techniques of description and narration. Practice in the personal essay, and narrative sketch.

ENG 325. ADVANCED EXPOSITORY WRITING (4)
PR: CBS 102. Composition techniques in exposition, methods and styles of writing the article and the report.

ENG 335. WORLD LITERATURE (4)
PR: CBS 102. Masterpieces of the western world, in translation, including ancient, medieval, and Renaissance literature.

ENG 336. WORLD LITERATURE (4)
PR: CBS 102. Translated masterpieces of the Neoclassical, Romantic, Realistic and Naturalistic, Symbolist and Modern periods.

ENG 337. FOLKLORE AND POPULAR LITERATURE (4)
PR: CBS 102. Fairytales, folk tales, and ballads, from Sir Patric Spens to Bob Dylan and contemporary minstrel poets.

ENG 383. SELECTED TOPICS IN ENGLISH STUDIES (1-4)
PR: Sophomore standing. This course will examine in depth a recurring literary theme of the work of a small group of writers. Special courses in writing may also be offered under this title.

ENG 411. PLAYS OF SHAKESPEARE (4)
PR: ENG 201 and 12 hours of literature. A study of ten representative plays by Shakespeare.

ENG 415. BLACK FICTION. (4)
Studies in the development of Black Fiction. Writers to be studied include Wright, Baldwin, Ellison, and others.

ENG 416. BLACK POETRY AND DRAMA. (4)
Examination of representative black poets and dramatists, including Hughes, Jones, Cullen, Brooks; Hansberry, Davis, Baldwin, and Jones.

ENG 421. IMAGINATIVE WRITING—POETRY (4)
Studies and exercises in prosody and imagery; written assignments in traditional and contemporary forms; evaluation of student work in individual conferences; selected reading. May be taken twice for credit. When the course is offered twice in the same academic year, the second offering is open only to students who took the course in the previous quarter.

ENG 423. IMAGINATIVE WRITING—FICTION (4)
PR: ENG 321. Study and writing of the short story and sections of the novel. Evalua-

tion of student work in conferences, selected readings. May be taken twice for credit. When the course is offered twice in the same academic year, the second offering is open only to students who took the course in the previous quarter.

ENG 425. THE AMERICAN NOVEL (4)
PR: 16 hours of literature. Selections from the novels of Charles Brockden Brown, Cooper, Hawthorne, Melville, Twain, Stephen Crane, Frank Norris, Edith Wharton, Henry James, and Theodore Dreiser.

ENG 426. THE AMERICAN DRAMA (4)
PR: 16 hours of literature. American dramatic literature from the beginnings to the present.

ENG 429. EIGHTEENTH-CENTURY BRITISH NOVEL (4)
PR: 16 hours of literature. The historical development of the British novel; precursors of the novel; Richardson, Fielding, Smollett, Sterne, and the Gothic novelists.

ENG 430. NINETEENTH-CENTURY BRITISH NOVEL (4)
PR: 16 hours of literature. A continuation of the development of the British novel; Austen, Scott, Thackeray, Dickens, Trollope, the Brontes, Eliot, Meredith, Hardy, and Butler.

ENG 437. CONTINENTAL NOVEL (4)
PR: 12 hours of literature. Major European novels from the Eighteenth Century to the present. Emphasis upon French and Russian novels of the Nineteenth Century.

ENG 459. DRAMA AND THE MODERN LITERARY TEMPER (4)
PR: 12 hours of literature. A study of the major literary problems faced by modern dramatists since Ibsen and the rise of realism.

ENG 481. INDIVIDUAL RESEARCH (1-5)
PR: 12 hours of literature. Directed study in special projects. Special permission of chairman required.

ENG 483. SELECTED TOPICS IN ENGLISH STUDIES (1-4)
PR: Sophomore standing. The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers. Special courses in writing may also be offered under this title.

ENG 500. OLD ENGLISH LITERATURE (4)
PR: 20 hours of literature. Old English literature (to 1100) in modern translation.

ENG 501. CHAUCER (4)
PR: 20 hours of literature. An introduction to the language through the "Prologue" to The Canterbury Tales. Study of the Book of the Duchess, a selected number of Tales, the House of Fame, and Troilus and Criseyde.

ENG 502. THE LITERATURE OF MEDIEVAL ENGLAND (4)
PR: 20 hours of literature. An examination of the historical and social backgrounds of medieval literature and representative works of the period.

ENG 503. ENGLISH DRAMA FROM THE BEGINNINGS THROUGH MARLOWE (4)
PR: 20 hours of literature. Readings in representative tropes, cycle plays, morality plays, interludes and school plays; and in early Elizabethan dramatists: Lyly, Peele, Greene, Kyd, with an emphasis on Marlowe.

ENG 504. ENGLISH DRAMA FROM BEN JONSON TO 1642 (4)
PR: 20 hours of literature. Chapman, Marston, Dekker, Middleton, Tourneur, Beaumont and Fletcher, Shirley; with emphasis upon Jonson, Webster, and Ford.

ENG 505. SEVENTEENTH-CENTURY POETRY (4)
PR: 20 hours of literature. Emphasis upon leading Metaphysical and Cavalier poets: Donne, Herbert, Jonson, Herrick, Marvell, and others.

ENG 506. SIXTEENTH-CENTURY ENGLISH POETRY (4)
PR: 20 hours of literature. Raleigh, Sidney, Spenser, Shakespeare and others.

ENG 507. MILTON (4)
PR: 20 hours of literature. An examination of Paradise Lost, Paradise Regained, Comus, the shorter poems, and selected prose works.

ENG 508. ENGLISH RENAISSANCE PROSE (4)
PR: 20 hours of literature. English fiction and nonfiction 1500-1660; Lyly, Sidney, Nashe, Bacon, Donne, Browne, Hobbes, Milton.

ENG 511. RELIGIOUS AND EXISTENTIAL THEMES IN MODERN LITERATURE (4)
Theological and philosophical ideas, allusions, and symbols in the writings of Dostoevski, Nietzsche, Mann, Joyce, Eliot, Camus, Sartre, and others.

ENG 513. THE ROMANTIC WRITERS (4)
PR: 20 hours of literature. The poetry and poetics of Blake, Wordsworth, Coleridge, Byron, Shelley, Keats; with attention to lesser figures.

ENG 515. HISTORY OF THE ENGLISH LANGUAGE (4)
PR: 24 hours of literature. The evolution of the language from Anglo-Saxon through Middle English to Modern English. Changes in pronunciation and syntax; discussion of the forces which influenced them.

ENG 517. STRUCTURE OF AMERICAN ENGLISH (4)
PR: 20 hours of literature. The phonology, morphology, and syntax of American English. Structural grammar; the application of linguistics to the teaching of English.

ENG 518. LINGUISTICS AND LITERATURE (4)
PR: ENG 517, ENG 535, or LIN 501. The analysis and interpretation of British and American literature, poetry, prose, and drama, using relevant materials from the field of descriptive and comparative linguistics.

ENG 519. SHAKESPEARE'S COMEDIES AND HISTORIES (4)
PR: ENG 411. An intensive study of Shakespeare's major comedies and histories.

ENG 520. SHAKESPEARE'S TRAGEDIES (4)
PR: ENG 411. An intensive study of Shakespeare's major tragedies.

ENG 521. RESTORATION AND 18TH CENTURY LITERATURE (4)
(exclusive of the drama and novel)
PR: 20 hours of literature. Concentration upon selected figures of the period: Dryden, Pope, Swift, Johnson and others.

ENG 523. NINETEENTH-CENTURY BRITISH LITERATURE (4)
Essays of Carlyle, Newman, Mill, Ruskin, Arnold, Pater; poetry of Tennyson, Browning, Swinburne; novels of Dickens, Meredith; plays of Wilde, Shaw.

ENG 527. MODERN BRITISH AND AMERICAN POETRY (4)
PR: 20 hours of literature. Selected poets from Hopkins to the present, with attention to modern poetic theory.

ENG 528. CONTEMPORARY BRITISH & AMERICAN FICTION (4)
A critical study of British and American fiction since World War II. Works by Mailer, Beckett, Bellow, Ellison, Nabokov, and others.

ENG 531. LITERARY CRITICISM (4)
PR: 24 hours of literature. Emphasis on either the great critics and the principles of criticism or on applied criticism of fiction, poetry and drama.

ENG 535. TRANSFORMATIONAL GRAMMAR (4)
PR: 90 hours or CI. An introduction to the basic concepts of generative-transformational grammar with emphasis upon its implications for teachers of English.

ENG 559. RESTORATION-EIGHTEENTH-CENTURY DRAMA (4)
PR: 20 hours of literature. Dryden, Congreve, Sheridan, Goldsmith, and others.

ENG 581. INDIVIDUAL RESEARCH (1-5)
PR: 20 hours of literature. Directed study in special projects. Special permission of chairman required.

ENG 583. SELECTED TOPICS IN ENGLISH STUDIES (1-4)
PR: 20 hours of literature. The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.

ENG 585. DIRECTED READING (4)
Readings in special topics.

FOR GRADUATE STUDENTS ONLY

ENG 601. PROBLEMS IN COLLEGE ENGLISH INSTRUCTION: COMPOSITION (3)
PR: Graduate standing. An examination of the objectives of freshman English and an investigation of current techniques for achieving those objectives, emphasizing the problems of developing critical reading and the techniques of expository writing at the college level.

ENG 616. STUDIES IN MIDDLE ENGLISH (4-16)
PR: 24 hours of literature in English. Selected focused studies in language and in various authors and writings 1100-1500: Chaucer, the *Pearl* poet, *Everyman*, ballads, drama. May be retaken with different subject matter three times.

ENG 620. STUDIES IN SIXTEENTH-CENTURY BRITISH LITERATURE (4-16)
PR: 24 hours of literature in English. Selected focused studies in 16th Century British literature: Shakespeare, Sidney, Spenser, Marlowe, and others. May be retaken with different subject matter three times.

ENG 625. STUDIES IN SEVENTEENTH-CENTURY BRITISH LITERATURE (4-16)
PR: 24 hours of literature in English. Selected focused studies in British literature 1600-1660: Bacon, Donne, Jonson, Herbert, Milton, and others. May be retaken with different subject matter three times.

ENG 627. BRITISH RENAISSANCE PROSE (4)
PR: 24 hours of literature in English. A study of the thematic, generic, and rhetorical development of prose in England from 1500 to 1660; Lyly, Greene, Bacon, Donne, Browne, Hobbes, Milton, and others. May not be taken in addition to ENG 657.

ENG 630. STUDIES IN RESTORATION AND EIGHTEENTH-CENTURY BRITISH LITERATURE (4-16)
PR: 24 hours of literature in English. Selected focused studies in Restoration-Eighteenth-Century British literature: Dryden, Defoe, Pope, Swift, Fielding, Sheridan, Johnson, Boswell, and others. May be retaken with different subject matter three times.

ENG 640. STUDIES IN NINETEENTH-CENTURY BRITISH LITERATURE (4-16)
PR: 24 hours of literature in English. Selected focused studies in British Romantic and Victorian literature. May be retaken with different subject matter three times.

ENG 646. STUDIES IN NINETEENTH-CENTURY BRITISH NOVEL (4)
PR: 24 hours of literature in English. Dickens, Thackeray, Eliot, and others. May not be taken in addition to ENG 667.

ENG 650. STUDIES IN AMERICAN LITERATURE TO 1860-1920 (4-16)
PR: 24 hours of literature in English. Selected focused studies in American literature before 1860: the Puritans, Franklin, Cooper, Irving, Poe, Emerson, Hawthorne, Melville, and others. May be retaken with different subject matter three times.

ENG 660. STUDIES IN AMERICAN LITERATURE 1860-1920 (4-16)
PR: 24 hours of literature in English. Selected focused studies in American literature: Whitman, Twain, Howells, James, Crane, Dreiser, and others. May be retaken with different subject matter three times.

ENG 665. STUDIES IN LATE NINETEENTH-CENTURY AMERICAN FICTION (4)
PR: 24 hours of literature in English. Twain, James, Crane, and others. May not be taken in addition to ENG 687.

ENG 670. STUDIES IN TWENTIETH-CENTURY LITERATURE (4-16)
PR: 24 hours of literature in English. Selected focused studies of literature in our century: Joyce, Hemingway, Eliot, Faulkner, and others. May be retaken with different subject matter three times.

ENG 681. GRADUATE RESEARCH (1-5)
PR: CI and 24 hours of literature in English. Directed study in special projects. Special permission of chairman required.

ENG 683. SELECTED TOPICS IN ENGLISH STUDIES (1-8)
PR: 24 hours of literature in English. Current topics offered on a rotating basis include The Nature of Tragedy; The Nature of Comedy and Satire; The Nature of Romanticism and Classicism; and The Nature of Myth, Allegory, and Symbolism. Other topics will be added in accordance with student demand and instructor interest.

ENG 690. SCHOLARSHIP AND CRITICISM (4-8)
PR: 24 hours of literature in English. Selected focused study of research approaches to English. May be retaken with different subject matter once.

ENG 691. GRADUATE SEMINAR IN ENGLISH (4)
PR: Consent of graduate advisor.

ENG 693. METHODS OF RESEARCH (4)
PR: 24 hours of literature in English. Introduction of aims and methods of literary scholarship. Detailed studies of bibliographies of cultural milieus, genres, periods, and authors. May not be taken in addition to ENG 623.

ENVIRONMENT

ENV 301. DIALOGUE IN ENVIRONMENTAL SURVIVAL (4)
A multidisciplinary course dealing with environmental problems. (Pass/Fail)

FINANCE

Faculty: Longstreet, Chairman; Brunhild, Deaux, Deiter, D. A. Johnson, Kares, Landry, Meyer, Modrow, Power, Rappold, C. T. Smith.

FIN 201. PERSONAL FINANCE (5)
Survey of the problems and techniques of family financial planning. Includes consumer credit, insurance, home ownership and personal investing, with attention given to current economic and legal constraints. Not available for credit to upper level students who have been admitted to the College of Business.

FIN 202. PERSONAL INVESTMENTS (4)
PR: FIN 201. Designed for non-business administration students who have not taken accounting or corporation finance, it emphasizes the operations of the security markets in the U.S. and the risks and returns of alternative investment media. Not available for credit to upper level students who have been admitted to the College of Business.

FIN 301. PRINCIPLES OF FINANCE (5)
PR: ACC 305, and ECN 201. Fundamental tools and techniques applicable to financial planning of incorporated and unincorporated business, emphasizing the problems of acquisition, supervision, and allocation of resources.

FIN 303. PRINCIPLES OF INSURANCE (5)
Analysis of insurable risks of both businesses and individuals. An examination of the characteristcs of those areas of risk and uncertainty where the mechanisms of insurance are effective alternatives. The concept, contracts and institutions involved in insurance are examined in relationship to the socio-economic environment.

FIN 305. PRINCIPLES OF REAL ESTATE (5)
Economics of urban land utilization and the nature of property rights. Problems of urban development and the valuation of real property in terms of the structure and operations of the real estate market.

FIN 321. MONEY AND BANKING (4)
PR: ECN 202. Examines the structure and operations of our monetary system, commercial banking, central banking, money and capital markets, and provides an introduction to monetary theory and policy.

FIN 351. INTERNATIONAL FINANCE (5)
PR: ECN 202 or CI. Principles of the acquisition, supervision and allocation of funds for multi-national firms.

FIN 411. ADVANCED CORPORATION FINANCE (4)
PR: FIN 301. An examination of the financial policies of publicly-owned corporations, with special reference to dividend policy, financial structure, capital expenditures, acquisitions, mergers and reorganization.

FIN 421. PRINCIPLES OF INVESTMENT (4)
PR: FIN 301 and ECN 202. Survey of the risks and returns of investment media in relation to the investment objective of individual and institutional investors. Includes an examination of the capital markets, information flows and analytical techniques in terms of their impact upon the valuation process.

FIN 431. FINANCIAL INSTITUTIONS (4)
PR: FIN 321. A study of financial intermediaries and the capital markets and their interaction in the capital formation process.

FIN 451. FEDERAL RESERVE SYSTEM AND MONETARY POLICY (4)
PR: ECN 323 or FIN 321. An analysis of the structure of the Federal Reserve System and monetary policy within the framework of monetary theories.

FIN 461. FINANCIAL POLICIES AND STRATEGIES (3)
PR: FIN 411. Senior seminar for majors in finance. Quantitative and qualitative analysis of financial policies based on independent readings and empirical research.

FIN 471. PORTFOLIO MANAGEMENT (3)
PR: FIN 421. Study of advanced investment methods with special emphasis on quantitative, timing, and diversification techniques of individual and institutional investors.

FIN 489. SPECIAL STUDIES IN FINANCE (1-5)
PR: CI. Independent study program under the guidance of departmental staff. Includes an examination of professional literature and empirical research.

FOR SENIOR LEVEL AND GRADUATE STUDENTS ONLY

FIN 501. BUSINESS FINANCE (3)
PR: ACC 501 and ECN 501 or its equivalent. Accelerated introduction to fundamentals of business finance. Emphasis is placed on the formal presentation of financial models for decision making. The institutional features of the financial environment are also covered.

FOR GRADUATE STUDENTS ONLY

FIN 601. FINANCIAL MANAGEMENT (3)
PR: ECN 503, FIN 501 or their equivalent. An examination of financial practice at the level of the individual firm with emphasis on quantitative analysis of the variables affecting solvency and profitability.

FIN 602. CAPITAL MARKETS (3)
PR: ECN 501 and 502 or their equivalent. An investigation of the capital markets and their relationship to the external financing of firms.

FIN 621. INVESTMENTS (3)
PR: FIN 501 or equivalent, CI. An examination of the risks and returns of alternative investment media within the framework of various valuation models. Special attention is given to the investment process and the criteria for investment decisions.

FINE ARTS (Intradivisional)

Faculty: Hug, G. Johnson, Kase, McCracken, O'Sullivan, Strawn.

FNA 443. FINE ARTS FORUM (1)
PR: CC. To aid Fine Arts students in understanding and appraising the various

arts through systematic attendance at performances and other aesthetically significant events. Critical evaluation sessions will be held.

FNA 453. FINE ARTS SEMINAR FOR OFF-CAMPUS TERM (1-9)
PR: CC. CR: FNA 543. To facilitate an intensive study of the fine arts through primary experiences with creative activities which are uniquely available in major artistic centers.

FNA 543. COMPARATIVE ARTS/ISSUES IN CREATIVITY (3)
PR: Two history courses, theory or literature courses in major area or CC. An analysis of various theories of art and the intellectual implication of differing propositions about asthetics.

FNA 553. FINE ARTS SENIOR SEMINAR (3)
PR: FNA 543 or CC. To aid majors to understand, appraise and perfect their own art and technique through critical and aesthetic judgements of their colleagues. Discussion and critical evaluation.
Section 001 is reserved for Music and Music Education students.
Section 002 is reserved for Theatre Arts students.
Section 003 is reserved for Visual Arts and Art Education students.
Section 004 is reserved for Dance students.

FRENCH

SEE MODERN LANGUAGES

GENERAL BUSINESS ADMINISTRATION

Faculty: Allen, Birkin, Grant, Kahn, C. Kayser, Knipper, Richardson, Rogier, Steinike, Van Voorhis, Walsh, Welker.

GBA 333. COMPUTERS IN BUSINESS I (3)
An introductory interdisciplinary examination of basic computer applications in business organizations. Problems are reduced to schematic logic, then focus is placed on decision making through computer output. Computer hardware and software systems will be introduced.

GBA 351. COMPUTERS IN BUSINESS II (5)
PR: GBA 333. An advanced interdisciplinary examination of the computer's impact on the business enterprise. Concepts of data collection and information theory are developed. In addition, model manipulation techniques are introduced in the areas of extremuum finding and search.

GBA 361. BUSINESS LAW I (5)
The nature of legal institutions, essentials of a binding contract, remedies granted in event of breach of contract and rights acquired by assignment of contracts.

GBA 362. BUSINESS LAW II (5)
PR: GBA 361. Legal problems in marketing of goods, nature of property, sales of personal property, securing of credit granted, nature and use of negotiable instruments.

GBA 363. THE LAW OF BUSINESS ASSOCIATIONS (5)
PR: GBA 361. A study of the law of corporations, the law of partnerships, and the law of agency.

GBA 371. BUSINESS COMMUNICATIONS (4)
Analysis and application of the principles of persuasion in business communication; composition and evaluation of functional business letters; examination of effective text, tabular and graphic presentation in formal business reports.

GBA 489. INDIVIDUAL RESEARCH (1-2)
Individual research in the students major area supervised by an appropriate faculty member.

GBA 499. SENIOR SEMINAR IN ADMINISTRATION (3)
PR: Graduating senior and minimum GPR of 2.5. The course is intended to provide a unifying, integrating, and coordinating opportunity to tie together concepts, principles, and skills learned separately in other, more specialized courses in Business Administration.

GBA 501. CBS WORKSHOP (1-6)
Professional applications workshop in various areas of finance, marketing, economics, accounting, management. May be repeated when subjects differ. Not applicable to degree programs in College of Business Administration.

FOR GRADUATE STUDENTS ONLY

GBA 601. LEGAL ENVIRONMENT OF BUSINESS (3)
A study of the governmental regulation of business emphasizing the constitutional limitations on the powers of the federal government, the administration of the federal antitrust laws, and administrative law.

GBA 603. QUANTITATIVE METHODS I (3)
PR: MTH 211, or equivalent. Mathematical techniques for administrative problems, including linear programming, game theory, and optimization models and procedures using calculus and matrix algebra.

GBA 605. QUANTITATIVE METHODS II (3)
PR: MTH 211, ECN 431, or equivalents. Probability and sampling, Bayesian decision theory, and the design of experiments, as applied to administrative problems.

GBA 615. INTEGRATIVE SEMINAR (3)
PR: CI. The integration of analysis and policy for the decision-making process in administration. This course should be taken at the end of a student's program.

GBA 699. THESIS (6)

GEOGRAPHY

Faculty: Fuson, chairman; Limoges, Palmer, Rothwell, Schaleman, Stafford, Stowers.

GPY 301. SYSTEMATIC GEOGRAPHY (5)
Principles and concepts of the discipline; maps, earth-sun relations, weather, climate.

GPY 302. SYSTEMATIC GEOGRAPHY (5)
PR: GPY 301. Landforms and conservation of resources. Latter part of course deals with man's use of the natural environment.

GPY 303. HUMAN GEOGRAPHY (5)
PR: GPY 301-302. Systematic treatment of man's activities on earth: population, settlement, agriculture, industry, trade, transportation, and political aspects are among those considered.

GPY 371. GENERAL GEOGRAPHY (5)
Varied topics in regional and topical geography. May be repeated as topics vary, but the same topic may not be repeated for credit. *Open to anyone in the University.*

GPY 403. PHYSICAL GEOGRAPHY (5)
PR: 301-302. Courses include: meteorology, climatology, physiography, biogeography, soils, water bodies. May be repeated as courses vary, but the same course may not be repeated for credit.

GPY 405. CULTURAL GEOGRAPHY (5)
PR: GPY 301-302-303. Courses include: economic, political, urban, historical geography; population, settlement, conservation. May be repeated as courses vary, but the same course may not be repeated for credit.

GPY 407. REGIONAL GEOGRAPHY (5)
PR: GPY 301-302. Synthesis and analysis of the physical and cultural elements in a selected geographic region. May be repeated as regions vary, but the same regions may not be repeated for credit.

GPY 409. GEOGRAPHIC TECHNIQUES AND METHODOLOGY (5)
PR: 301-302-303. Courses include: cartography, graphics, map design and analy-

sis, air photo interpretation, field methods, quantitative analysis, seminar. May be repeated as courses vary, but the same course may not be repeated for credit.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

GPY 501. GEOGRAPHIC LITERATURE AND HISTORY (4)
PR: Senior or graduate standing in geography, or CI. The origins and development of the discipline as revealed through an examination of the principal written sources. Special attention paid to leading personalities and modern periodicals.

GPY 503. METHODOLOGY I: QUANTITATIVE (4)
PR: Senior or graduate standing in geography, and a course in statistics, or CI. The application of quantitative techniques to geographic problems; factor, sensitivity, and spatial analysis.

GPY 505. METHODOLOGY II: CARTOGRAPHIC (4)
PR: Senior or graduate standing in geography, GPY 409 (Cartography), or CI. Application of various techniques for presenting graphic illustrations as research tools.

GPY 507. METHODOLOGY III: FIELD WORK (4)
PR: Senior or graduate standing in geography, GPY 503 or 505. Data collection in a field situation, including observation, classification, interpretation, and presentation of the data.

GPY 581. INDIVIDUAL RESEARCH (1-5)
PR: 30 hours in geography and CI, or graduate standing in geography. Arrangement must be made with chairman prior to registration. May be repeated.

GPY 585. DIRECTED READING (1-5)
PR: 30 hours in geography and CI, or graduate standing in geography. Arrangement must be made with chairman prior to registration. May be repeated.

FOR GRADUATE STUDENTS ONLY

GPY 601. METHODOLOGY IV: ACADEMIC (4)
PR: Graduate standing in geography. Current trends in college geography, with the emphasis on the junior college program. Not available to thesis students.

GPY 603. SEMINAR IN ADVANCED PHYSICAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a problem selected from one or more aspects of the atmosphere, biosphere, hydrosphere, or lithosphere. May be repeated once for credit, but topic may not be repeated.

GPY 605. SEMINAR IN ADVANCED CULTURAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a problem selected from one or more aspects of the cultural landscape (urban, political, economic, population, settlement). May be repeated once for credit.

GPY 607. SEMINAR IN ADVANCED REGIONAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a selected region of the world. May be repeated once for credit, but region may not be repeated.

GPY 609. SEMINAR IN ADVANCED TECHNIQUES & METHODOLOGY (4)
PR: Graduate standing in geography. Analytic study of a selected geographic technique (such as remote sensing, graphics, photo interpretation, or computer applications) or an investigation into an aspect of methodology. May be repeated once for credit, but topic may not be repeated.

GPY 689. DIRECTED TEACHING (1-9)

GPY 699. THESIS (1-9)

GEOLOGY

Faculty: Ragan, chairman; Boulware, Huang, Keller, O'Donnell, Spangler, R. G. Stevenson

GLY 201. INTRODUCTION TO GEOLOGY (5)
Study of earth materials and the processes responsible for changing the face of the

earth. Examination of minerals and rock specimens, topographic and geologic maps and aerial photographs. Occasional field trip studies. Required lec-lab.

GLY 301. INTRODUCTION TO HISTROICAL GEOLOGY (4)
Study of the record of past life and interpretation of the major physical events in the history of the earth. Occasional field trip studies. lec-lab.

GLY 302. INTRODUCTION TO PALEONTOLOGY I (4)
PR: GLY 301 or CI. Paleontology and stratigraphic occurrence of most important invertebrate fossils of the geologic record. lec-lab.

GLY 303. INTRODUCTION TO PALEONTOLOGY II (4)
The second half of GLY 302.

GLY 311. MINERALOGY (4)
PR: GLY 201 and General Chemistry, or equivalent; or CI. Origin, occurrence, and chemistry of mineral groups. Identification of common minerals by physical and chemical properties. lec-lab.

GLY 351. INTRODUCTION TO HYDROGEOLOGY (5)
PR: GLY 201, 301 and CC. Occurrence, circulation, and distribution of subsurface water, its chemical and physical properties, relation to the geologic environment, exploration and development, lec-field-lab.

GLY 361. STRUCTURAL GEOLOGY (5)
PR: GLY 201 or equivalent. Application of basic principles of geology, mathematics, and physics in solving relationships of strata and interpreting structural features in the earth's crust. lec-lab.

GLY 371. GEOLOGY OF OUR NATION'S PARKS (4)
Representative parks used to illustrate current concepts in Geology of general interest. Designed for the student not majoring in science. (May not be counted for credit toward a Geology or divisional major in Geology).

GLY 401. FIELD AND SUBSURFACE METHODS (5)
PR: 24 hours of geology courses, CC. Fundamentals of geology in the field and marine laboratory; compass and plane table mapping, mapping of aerial photos, reconnaissance surveys, interpretation of geologic structures. lec-lab.

GLY 411. MARINE GEOLOGY (4)
PR: GLY 201, 301. Fundamentals of marine geology, including the collection, analysis, and geologic interpretation of marine waters, sediments, and environments Occasional marine trips. lec-lab.

GLY 412. OPTICAL MINERALOGY (4)
PR: GLY 311 (Non-majors from other departments, CC). Theory and use of the polarizing microscope. Techniques for identification and analysis of minerals using the polarizing microscope, with emphasis on rock-forming minerals. lec-lab.

GLY 441. ECONOMIC MINERAL DEPOSITS (4)
PR: or CR: GLY 412. Principles involved in the origin, occurrence, recovery, and use of mineral resources. lec-lab.

GLY 471. GEOLOGY OF SOILS (5)
PR: General Chemistry or equivalent. The origin, geologic development, formation, and nature of soils. Fundamentals of soil science, including the physical, chemical, and biological factors affecting soil fertility with special application to the soils and ecology of Florida, lec-lab.

GLY 473. CONCEPTS IN EARTH SCIENCE (5)
Earth's environment in space, including a selected study of its materials, processes, climate, oceans, soils and history, lec-disc.
(No credit for geology or natural science divisional geology majors)

GLY 475. HYDROGEOLOGY AND HUMAN AFFAIRS (5)
PR: Open to all junior and senior level students. Geologic analyses of the present critical and urgent problems of water resources, pollution control, water supply, flood control, and underground waste disposal as they relate to economic, legal and other social aspects of modern society. No credit for Geology majors.

GLY 481. UNDERGRADUATE RESEARCH (1-6)
PR: Senior or advanced junior standing and permission of department chairman prior to registration. Individual experimental investigations with faculty supervision. (S/U grade only.)

FOR SENIOR LEVEL AND GRADUATE STUDENTS

GLY 503. SEDIMENTATION I (4)
PR: GLY 303 and 412. Geologic factors governing chemical, physical, and biological interactions and deposition of sediments. lec-lab.

GLY 504. SEDIMENTATION II (4)
The second half of GLY 503.

GLY 512. MARINE GEOLOGY (4)
PR: Senior or graduate standing in a natural science and CC. Geological interpretation of marine processes and products. Seminar and field studies. lec-lab.

GLY 513. PETROGRAPHY (5)
PR: GLY 311 and 412. Systematic study of igneous and metamorphic complexes using modern methods of rock study, emphasizing use of the polarizing petrographic microscope for thin-section analysis. lec-lab.

GLY 521. PRINCIPLES OF APPLIED GEOPHYSICS (4)
PR: Senior or advanced Junior standing, one year of Physics, or CI. Elementary treatment of gravimetric, magnetic, electric and seismic geophysical techniques as applied to site investigations and mineral deposits. lec-lab.

GLY 531. PRINCIPLES OF STRATIGRAPHY (4)
PR: GLY 361 or CI. Environmental and paleogeographic reconstruction of sedimentary basins. Seminar. lec-lab.

GLY 532. ADVANCED STRATIGRAPHY (5)
PR: GLY 531 or CI. Study of the stratigraphy and paleotectonic development of North America and Europe.

GLY 533. GEOMORPHOLOGY (4)
PR: Senior or advanced junior standing and CC. Origin, evolution, and distribution of land forms.

GLY 534. QUANTITATIVE GEOMORPHOLOGY (4)
PR: GLY 533 or CI. Quantitative methods and their application to geomorphic problems; review and concepts of recent theories and literature. lec-lab.

GLY 541. GEOPHOTO INTERPRETATION (5)
PR: Senior standing, GPY 409 and/or CI, Geo-analysis of air photos and earth data, including some acquired by remote sensing techniques. Analysis of chemical and physical sample data. lec-lab.

GLY 553. ADVANCED HYDROGEOLOGY (5)
PR: GLY 351, MTH 213 or 303, PHY 215-216, or CI. Aquifer evaluation and quantitative determination of the hydraulic characteristics of hydrogeologic systems, lec-field-lab.

GLY 561. X-RAY ANALYSIS (2)
PR: GLY 412 or CI. (Non-majors from other areas, CI.) The use of X-rays for the identification of crystalline materials.

GLY 571. GEOCHEMISTRY I (4)
PR: CHM 211, 212, 213 or equivalent. Origin and chemistry of the earth. Age, formation, heat balance, and evolution of the earth and the solar system. Application of basic chemical concepts and processes that govern the distribution of the elements in geologic environments.

GLY 572. GEOCHEMISTRY II: Low Temperature Solution Geochemistry (5)
PR: CHM 213, GLY 513, or CI. Application of the fundamentals of solution chemistry and equilibrium of aqueous species in multi-component systems to the natural environments such as ores, weathering, diagenesis, rivers, lakes, ocean and other aqueous environments.

GLY 573. GEOCHEMISTRY III: Analytical Geochemistry (4)
PR: CHM 213, GLY 513, or CI. Experimental techniques by chemical and modern methods to determine major and trace elements in minerals, rocks, meteorites, and natural water; statistical and mathematical modeling to the solution of geochemical problems also discussed.

GLY 575. GEOTECHNICS (4)
PR: Senior or advanced Junior standing or CI. Concept of soil and rock mechanics, and their relationship to geological conditions influencing the location, design, construction and maintenance of engineering projects. lec-field-lab.

GLY 583. SELECTED TOPICS IN GEOLOGY (1-6)
PR: Senior or advanced junior standing and CC. Each topic is a course in directed study under supervision of a faculty member. Courses include: Introductory Geological Oceanography, Advanced Stratigraphic Paleontology, Palynology, Sedimentary Processes, Sedimentary Techniques, Universal Stage, Seismology, Marine Geophysics, Exploration Geophysics, Ground Water Problems and others. Department permission prior to registration.

GLY 591. GEOLOGY SEMINAR (1)
PR: Senior or advanced junior standing and CC. May be repeated once. (S/U grade only.)

FOR GRADUATE STUDENTS ONLY

GLY 603. RECENT NERITIC SEDIMENTATION (5)
PR: GLY 504 or CC. Environmental/tectonic factors and resulting sediment types in shallow marine environments. Application to problems in stratigraphy and petroleum studies. lec-lab.

GLY 604. RECENT FLUVIAL AND TRANSITIONAL SEDIMENTATION (4)
PR: GLY 504 or CI. Environmental factors and resulting sediment types accumulated in fluvial and transitional environments. lec-lab.

GLY 605. OCEANIC SEDIMENTATION (5)
PR: GLY 504 or CI. Structural development, sedimentation processes, and sediments of shoreline, continental slope, continental rise, and abyssal plain environments. lec-lab.

GLY 607. CARBONATE PETROLOGY I (4)
PR: GLY 503 or CC. Genesis of recent carbonate sediments and the interpretation of ancient carbonate rocks by the use of conceptual models. Field-lab-seminar.

GLY 608. CARBONATE PETROLOGY II (4)
The second half of GLY 607.

GLY 611. ADVANCED IGNEOUS PETROGENESIS (4)
PR: CI. Detailed study of igneous rocks and their origin.

GLY 612. ADVANCED METAMORPHIC PETROGENESIS (4)
PR: CI. Detailed study and interpretation of metamorphism and the origin of metamorphic rock complexes, utilizing thin section microscopy, X-ray diffraction, and chemical analyses.

GLY 621. MARINE MICROPALEONTOLOGY (6)
PR: GLY 301, 303 or equivalents and CC. Principal groups of microfossils in marine sediments and cores. Paleoecology, correlation, and application to petroleum and paleomarine problems.

GLY 631. CENOZOIC STRATIGRAPHY (3)
PR: GLY 531 or CI. Structural elements, paleogeography, stratigraphy, and economic resources of the Gulf of Mexico coastal plain. lec-lab.

GLY 652. DEVELOPMENT OF GROUND-WATER RESOURCES (5)
PR: GLY 553 or CC. Analysis of cause-effect relationships between ocean, streams, lakes and aquifers; planning and design of hydrogeology resources investigations, lecture-field-lab.

GLY 661. CLAY PETROLOGY (4)
PR: GLY 513, 561, or CC. Composition, structures, origin, and diagenesis of clay minerals. Identification of clay minerals by x-ray diffraction techniques.

GLY 673. HISTORY OF GEOLOGY (2)
PR: CC. Historical development of geologic thought. lec. Alternate years.

GLY 675. GEOLOGY OF FLORIDA (5)
PR: 24 hours of earth science credits or CI. Designed for teachers of earth science. Mineralogy, structure, stratigraphy, paleontology, geomorphology, tectonics, and petrology of Florida and contiguous areas. lec-field-lab. Alternate years.

GLY 681. GRADUATE RESEARCH GEOLOGY (1-15)
PR: CC. (S/U grade only).

GLY 683. SELECTED TOPICS IN MARINE GEOLOGY (1-6)
PR: CC. Sedimentary Petrology, Shoreline and Marine Physiography, Advanced Sedimentology, Shoreline Geology, Geology of Coastal Plain and Shelf, Geochronology, Geochemistry of the Ocean, Structure of Ocean Floor and Continental Mar-

gins, Geological Oceanography of Gulf of Mexico, Advanced Paleontology, Paleoecology, Foraminiferal Ecology, Pleistocene Geology, Cenozoic Geology, Petroleum Geology, Gravimetry Geophysics, Geotectonics, Geomagnetism and Terrestrial Heat Flow, Paleomagnetism, Advanced Geophysics, Advanced X-Ray, Hydrogeology of Carbonate Terrains, computer applications, and others.

GLY 688. RECENT ADVANCES IN GEOLOGY WITH EMPHASIS ON THEIR IMPACT ON COLLEGE-LEVEL COURSES. (3-6)
PR: Graduate Standing. Recent developments in geology that effect presentation of introductory material. (Credit not applicable toward thesis degree requirements.) (S/U grade only.)

GLY 689. DIRECTED TEACHING. (3-9)
PR: Graduate Standing. Supervised teaching of graduate teaching assistants in elementary and/or laboratory courses. (Credit not applicable toward thesis degree requirements.) (S/U grade only.)

GLY 691. GRADUATE SEMINAR (2)
PR: CC. (S/U grade only.)

GLY 699. THESIS (1-9)
PR: CC (S/U grade only.)

GERMAN

SEE MODERN LANGUAGES

GERONTOLOGY

Faculty: Rich, director; Lawton and Wilson, co-directors; Bosserman, Buckingham, Davis, Fleming, Geis, Gilmore, Guest, Kaplan, Kenerson, Krivanek, Saxon.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

AGE 501. PHYSIOLOGY OF AGING (3)
Lectures and discussion concerned with the biological bases of the aging phenomenon as it occurs on the levels of the cells, organs, tissues, and organism.

AGE 502. PSYCHOLOGY OF AGING (3)
Consideration of basic psychological processes as related to the aging process, changes in functioning and perceptual motor and cognitive areas from the developmental perspective.

AGE 503. SOCIOLOGICAL ASPECTS OF AGING (3)
Examines, within a sociological frame of reference, the inter-relationships between the aged (or aging) and the structure and function of the social system and its major institutionalized subsystems.

AGE 504. AGING AND PERSONALITY (2)
An introduction to personality theory and concepts of adjustment with an overview of counseling techniques and rehabilitative efforts with the aged.

AGE 507. ECONOMICS AND AGING (3)
A study of the basic processes of macroeconomic thought in the modern mixed economy and what influences these processes have on the subject of aging. The course will include discussions on economic issues pertinent to aging such as income maintenance, problems, theories of consumption and income, and labor force problems.

AGE 509. LEISURE FOR THE AGING (2)
This seminar consists of general data and observations on trends and research in the leisure field, directed theoretical analysis of these studies as they pertain to the elderly and contact with progress by visits, interviews, and reports.

AGE 585. DIRECTED READINGS (1-3)
PR: CI. A reading program with topics in gerontology conducted under the supervision of a faculty member.

FOR GRADUATE STUDENTS ONLY

AGE 603. SOCIAL RESEARCH METHODS APPLIED TO GERONTOLOGY (3)
Systematic study of the methods and techniques employed in social, psychological, and health studies of population groups. Directed toward the consumers of research findings—persons whose positions call for the ability to interpret, evaluate, and apply the findings produced by others.

AGE 605. INTERPERSONAL RELATIONS PRACTICUM (4)
A practicum involving students in group and individual settings in interaction with older persons. Content will include implications from interviewing, counseling, and current conceptions of personality in the aged.

AGE 606. INSTITUTIONAL ADMINISTRATION (3)
This course deals with the management problems and practices in the administration of institutions in the field of aging. Consideration is given to the economics of aging, federal and state legislation, the management of people, and fiscal management.

AGE 608. HUMAN RELATIONS IN ORGANIZATIONS (3)
An analytical view of the modern human relations movement with stress on development since the 1930's. Incorporates the philosophy of the behavioral sciences and alternative theories and relates them to the management process.

AGE 610. ADMINISTRATIVE APPLICATIONS OF DEMOGRAPHY (3)
Acquaints the student with various sources of demographic data and its use. Emphasis is placed upon applicability in program planning and student experience in locating, tabulating, and interpreting data from selected publications.

AGE 611. PROJECTS IN AGING I (1-6)
In depth study of special topics with the objective of identifying problems for research and developing research proposals.

AGE 612. PROJECTS IN AGING II (1-6)
PR: AGE 611. A continuation of AGE 611.

AGE 691, 692, 693, 694. SEMINAR IN SOCIAL GERONTOLOGY (2)
Designed to give the graduate student an opportunity to integrate concepts within the field of gerontology and relate these to other fields of study. Guest lecturers from a variety of disciplines participate in the seminar.

AGE 695. FIELD PLACEMENT (12)
Internship in an agency or setting. An assignment to an agency or organization engaged in planning or administering programs for older people or in providing direct services to older people.

HISTORY

Faculty; Dilkes, chairman; Belohlavek, Billingsley, Burke, Currey, DellaGrotte, Dillon, Jordan, Kleine, Mayer, Parker, Perez, Rollins, Silbert, Silver, Swanson, Tipps, Tsangadas, Wrong.

Part I

HTY 100. THE IDEA OF HISTORY (4)
Required of all history majors. The course deals with history conceived as a mode of inquiry, emphasizing the acquisition of the conceptual tools required for systematic, critical thought about human problems in the historical perspective. May be waived in the case of transfer students.

HTY 201, 202. ANCIENT HISTORY (4, 4)
PR: HTY 100 or CI. A survey study of the ancient civilizations 201 treats Near Eastern and Greek history to the beginning of the career of Alexander the Great; 202 treats the career of Alexander, the Hellenistic World, and Rome to the death of Constantine. Attention is drawn to the correlative work in CLS 321, Ancient Civilizations.

HTY 211, 212. AMERICAN HISTORY (4,4)
PR: HTY 100 or CI. A history of the United States with attention given to relevant developments in the Western Hemisphere. 211: European origins to 1865; 212: 1865 to present.

HTY 221, 222. MEDIEVAL HISTORY (4,4)
PR: HTY 100 or CI. A thematic survey of the Middle Ages. 221 deals with the nascent, Christian civilization of Europe, circa 300-1050 A.D.; 222 treats the mature medieval civilization of Europe, circa 1050-1500.

HTY 231, 232. MODERN EUROPEAN HISTORY (4,4)
PR: HTY 100 or CI. A thematic survey of Europe in the modern age. 231 treats the period from the Renaissance to the French Revolution; 232, from the French Revolution to the present.

HTY 251, 252. LATIN AMERICAN HISTORY (4,4)
PR: HTY 100 or CI. A thematic survey of the Iberian-Indian civilization in the New World from the 15th through the 20th Centuries. 251 treats the period from discovery to the independence movements of the 19th Century; 252, the Ibero-American states from the Wars of Independence to the present.

Part II

HTY 301, 302. A HISTORY OF THE AMERICAN COLONIAL PERIOD (4,4)
PR: HTY 100, 211, 212, or CI. A study of European interest and involvement in America from the Age of Reconaissance to 1789 with emphasis on institutional development and the establishment of the American national system.

HTY 303, 304. AGE OF EXPANSION AND CONTINENTAL DEVELOPMENT (4,4)
PR: HTY 100, 211, 212, or CI. A study of the formation of the American national state and its continental expansion. 303 covers the period from 1783 to 1815; 304 focuses on the years to the Compromise of 1850.

HTY 311, 312. THE AMERICAN SOUTH (4,4)
PR: HTY 100, 211, 212, or CI. A chronological study of the South in its relation to the rest of the United States. 311 treats the origins and growth of southern institutions and thought; 312, the South and the nation.

HTY 315, 316. THE CIVIL WAR AND ITS AFTERMATH (4, 4)
PR: HTY 100, 211, 212, or CI. A study of the causes of the Civil War and the factors, forces, and atmosphere which produced the reconstruction policy following the war.

HTY 317. HISTORY OF FLORIDA (4)
A history of Florida and the Caribbean. Florida as an area of discovery, colonization and imperial conflict; the emergence of Florida within its regional setting.

HTY 319, 320. THE EMERGENCE AND GROWTH OF MODERN AMERICA (4, 4)
PR: HTY 100, 211, 212, or CI. A study of the transition of American society from the end of Reconstuction to the present. 319 treats the era from 1877 to World War I; 320 focuses on the period from World War I to the present.

HTY 321, 322. ANCIENT GREECE (4,4)
PR: HTY 100, 201, 202, or CI. A study of Greece in the ancient period. 321 offers instruction in the pre-Hellenic and Hellenic periods, to the death of Philip II of Macedon; 322 treats the career of Alexander the Great and the Hellenistic period. Attention is drawn to the correlative work in CLS 527, Greek Civilization.

HTY 324. MEDIEVAL SPAIN AND PORTUGAL (4)
PR: HTY 100, 221, 222, or CI. A study of the peoples of the Iberian Peninsula in the Middle Ages.

HTY 325, 326. ANCIENT ROME (4, 4)
PR: HTY 100, 201, 202, or CI. A study of Rome in the ancient period.

325 treats the development of Rome to the end of the Republic, 27 B.C.; 326 offers instruction in the development of the Roman Empire from 27 B.C. to the death of Constantine, A.D. 337. Attention is drawn to the correlative work in CLS 529, Roman Civilization.

HTY 327, 328. MEDIEVAL INSTITUTIONAL HISTORY (4, 4)
PR: HTY 100, 221, 222, or CI. A study of the major institutions of feudal Europe. 327 treats the history of the Empire and Papacy; 328 deals with the history of the Western monarchies.

HTY 329. MEDIEVAL ENGLISH HISTORY (4)
PR: HTY 100, 221, 222, or CI. A study of the major developments in England from the Anglo-Saxon period to the 15th Century.

HTY 333, 334. FRENCH HISTORY (4,4)
PR: HTY 100, 231, 232, or CI. A study of the major developments of French history in the modern period. 333 deals with the period from the Renaissance to the French Revolution; 334, from the Revolution to the present.

HTY 335, 336. GERMAN HISTORY (4, 4)
PR: HTY 100, 231, 232, or CI. A study of the major developments of German history. 335 deals with the period from the Reformation to the French Revolution; 336, from the Revolution to the present.

HTY 337, 338. RUSSIAN HISTORY (4, 4)
PR: HTY 100, 231, 232, or CI. A study of the primary social, economic, and cultural forces which have shaped the historical development of Russia. 337 treats the period to 1855; 338, 1855 to present.

HTY 340. HISTORY OF MODERN ITALY—1861 TO PRESENT (4)
PR: HTY 100, 231, 232, or CI. A critical thematic approach with emphasis on a socio-psychological examination of bourgeoise liberalism and nationism, the crisis of liberalism, the rise of the Italian socialist movement, World War I, and the Fascist synthesis.

HTY 341, 342. BRITISH HISTORY (4,4)
PR: HTY 100, 231, 232, or CI. A study of the major developments of British history. 341 treats the period from the Reformation to 1715; 342, from 1715 to present.

HTY 345, 346. BRITISH EMPIRE AND COMMONWEALTH (4,4)
PR: HTY 100, 231, 232, or CI. A study of the old and new empires with emphasis upon the evolution of the Commonwealth.

HTY 347. HISTORY OF CANADA (4)
PR: HTY 100 or CI. A study of the major themes in the political and social development of Canada, with particular emphasis on the origins and development of French-Canadian nationalism, continentalism, and dominion-provincial relations.

HTY 353. HISTORY OF MEXICO (4)
PR: HTY 100, 251, 252, or CI. A study of Mexican history from discovery to the present, with emphasis on the empire and republican periods.

HTY 355. HISTORY OF BRAZIL (4)
PR: HTY 100, 251, 252, or CI. A study of Brazilian history from discovery to the present with emphasis on the empire and republican periods.

HTY 365, 366. BYZANTINE HISTORY (4,4)
PR: HTY 201-202, or HTY 221-222, or CI. A thematic treatment of the history of the Byzantine Empire, including social, economic, religious, political, military, ecclesiastical developments, together with consideration of literature, learning, and the arts. HTY 365 deals with the period from 324 A.D. to 867; HTY 366 deals with the period of Imperial Byzantium, including its decline and fall: 867-1453 A.D.

Part III

HTY 401, 402. SOCIAL & INTELLECTUAL HISTORY OF THE ANCIENT WORLD (4,4)
PR: HTY 100 and 201-202 and 321-322 or 325-326 or CI. Selected topics in

the social and intellectual history of the ancient world. 401 treats the period of ancient Greece; 402 treats the period of ancient Rome.

HTY 409, 410. A HISTORY OF AMERICAN FOREIGN RELATIONS (4,4)
PR: HTY 100, 211, 212, or CI. The development of American foreign relations from the Revolution to the present. HTY 409 deals with earlier period to 1877; HTY 410, with the period from 1877 to present.

HTY 411, 412. AMERICAN SOCIAL AND INTELLECTUAL HISTORY (4,4)
PR: HTY 100, 211, 212, or CI. A study of the major religious and philosophical ideas of the American people in relation to the nation's social environment. 411 deals with the earlier period to 1865; 412, from 1865 to present.

HTY 421, 422. A HISTORY OF THE AMERICAN ECONOMIC PROCESS (4, 4)
PR: HTY 100, 211, 212, ECN 201, 202, or CI. The development of American economic thought and policies from the colonial period to the present, emphasizing the inter-relationship of economic development with the major political, ideological, and institutional currents of American history. A student may not receive credit for both HTY 421, 422, and ECN 371.

HTY 423. MEDIEVAL THOUGHT AND CULTURE (4)
PR: HTY 100, 221, 222, or CI. A study of the culture and the major intellectual developments of the medieval world.

HTY 425, 426. A HISTORY OF THE RENAISSANCE AND REFORMATION PERIODS (4,4)
PR: HTY 100, 231, 232, or CI. HTY 425 deals with the European Renaissance; HTY 426 with the major developments of Reformation Europe.

HTY 427, 428. EUROPE IN THE BAROQUE AND ENLIGHTENMENT PERIODS (4,4)
PR: HTY 100, 231, and any two of courses 333, 335, 337 and 341 or CI. A study with emphasis on comparative developments. 427 deals with major topics of the Baroque period; 428, with the Enlightenment.

HTY 429, 430. EUROPE IN THE NINETEENTH AND TWENTIETH CENTURIES (4,4)
PR: HTY 100, 231, 232, or CI. A study with emphasis on comparative developments. 429 treats the Nineteenth Century; 430, the Twentieth Century.

HTY 431, 432. EUROPEAN SOCIAL AND INTELLECTUAL HISTORY (4, 4)
PR: HTY 100, 231, 232, or CI. Selected topics in the social and intellectual history of modern Europe. 431 treats the early modern period; 432, the Nineteenth and Twentieth centuries.

HTY 451. A HISTORY OF INTER-AMERICAN RELATIONS (4)
PR: HTY 100, 251, 252, or CI. An examination of the mutual problems of the American nations since independence with emphasis upon the development of Pan Americanism and the Organization of American States.

HTY 453. SOCIAL AND INTELLECTUAL HISTORY OF LATIN AMERICA (4)
PR: HTY 100, 251, 252, or CI. A study of the origins and development of major intellectual and social trends affecting the histories of the Latin American people.

HTY 455. STUDIES IN TUDOR-STUART ENGLAND (4)
PR: HTY 100, 231, 232, or CI. Selected topics in the history of Sixteenth and Seventeenth Century England.

HTY 461. REVOLUTION IN THE MODERN WORLD (4)
PR: HTY 100, 231, 232, or CI. An analytical and comparative study of the nature of revolution in modern history leading to a development of a paradigm of the revolutionary process.

HTY 464. FASCIST AND OTHER TOTALITARIAN SYSTEMS (4)
PR: HTY 100, 231, 232, or CI. A critical and comparative study of the growth of Fascist and other bureaucratic totalitarian movements in the 19th and 20th century western world: a socio-psychological analysis.

HTY 465. SCIENCE AND CIVILIZATION (4)
PR: HTY 100, 231, 232, or CI. A comparative survey of the impact of science on Western civilization from the ancient Egyptians to the present, emphasizing

the relationship of science to the socio-economic, political, and intellectual development.

HTY 485. DIRECTED READING (1-4)
PR: Arrangement with instructor prior to registration. Readings in special topics.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

HTY 587. THEORY OF HISTORY (4)
PR: to be taken during the senior year. An investigation of the philosophical problems of history, with emphasis on the evolution of the discipline.

HTY 591. PRO-SEMINAR IN HISTORY (4)
Advanced topics in the fields emphasizing readings, discussion, research, and writing. One pro-seminar is required of all history majors. Non-majors may enroll with the consent of the instructor. Topics vary within each field.

HTY 592. SENIOR SEMINAR IN HISTORY (4)
Introduction to the methods of historical research and writing, bibliography, and directed research in special topics designed to meet the particular needs and interests of individual students.

FOR GRADUATE STUDENTS ONLY

HTY 600. ANALYSIS OF HISTORICAL KNOWLEDGE (4)
A study of history as a form of knowledge with emphasis on epistemological considerations of the explanation devices and models of the discipline.

HTY 601. THEORY AND INTERPRETATION (4)
A systematic examination and evaluation of various schools of historical interpretation.

HTY 602. HISTORY AND THE SOCIAL SCIENCES (4)
An examination of the conceptual modes and methodology of the other disciplines with emphasis upon their application to historical research.

HTY 680. COLLOQUIUM IN HISTORY (4)
Reading and discussion of selected topics within the fields. Subject and scope to be determined by the instructor. May be repeated for credit.

HTY 685. READINGS IN HISTORY (1-4)
Arrangement with instructor prior to registration and CC. Individual reading and discussion of selected problems. May be repeated for credit.

HTY 691. SEMINAR IN HISTORY (4)
Research in selected problems within the fields. Subject and scope to be determined by the instructor. May be repeated for credit. The master's candidate is required to satisfactorily complete work in at least one graduate seminar to fulfill the requirement for the Master's Degree in History.

HTY 699. THESIS IN HISTORY (1-8)
Required of all candidates for the Master's Degree in History.

HUMANITIES

Faculty; Kiefer, chairman; T. Burns, Conway, C. Cooper, Gowen, Hoffman, Juergensen, Kashdin, Koenig, MacKay, McRae, Rutenberg, Shackson, Spillane, Watkins, Zylstra.

HUM 311, 312, 313. HUMANITIES AND HUMANE VALUES (5,5,5)
PR: CBS requirement in humanities or CI. Masterpieces of music, visual arts, theater, literature, and philosophy in varying cultural and historical situations.

HUM 411, 412. TWENTIETH-CENTURY ARTS AND LETTERS (5,5)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the twentieth century.

HUM 415, 416. ARTS AND LETTERS OF THE ROMANTIC PERIOD (4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the romantic period.

HUM 417, 418. NINETEENTH-CENTURY ARTS AND LETTERS (4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the nineteenth century.

HUM 419, 420. THE ENLIGHTENMENT (4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the Enlightenment.

HUM 423, 424. RENAISSANCE ARTS AND LETTERS (4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the Renaissance.

HUM 427, 428. MEDIEVAL ARTS AND LETTERS (4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the middle ages.

HUM 431, 432. CLASSICAL ARTS AND LETTERS (4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the ancient world.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

HUM 535, 536, 537. HUMANITIES IN AMERICA (4,4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the United States.

HUM 539, 540. SELECTED NON-WESTERN HUMANITIES (4,4)
PR: CBS requirement in humanities or CI. Materials chosen from the arts and letters of Asia, Africa, Oceania, and the Middle East. May be repeated for credit.

HUM 541. HUMANITIES IN THE ORIENT: INDIA (4)
PR: CBS requirement in humanities or CI. Examples from the arts and letters of India and the relationship of these arts to the Hindu and Buddhist philosophy-religions.

HUM 542. HUMANITIES IN THE ORIENT: CHINA (4)
PR: CBS requirement in humanities or CI. Examples from the arts and letters of China; their relationship to Taoism, Confucianism and other Chinese philosophies; Western influences on 20th-century Chinese arts and letters.

HUM 543. HUMANITIES IN THE ORIENT: JAPAN (4)
PR: CBS requirement in humanities or CI. Examples from the arts and letters of Japan, their relationship to Zen Buddhism and other Japanese philosophy-religions; Western influences on 20th-century Japanese arts and letters.

HUM 545. LATIN AMERICAN ARTS AND LETTERS (4)
PR: CBS requirement in humanities or CI. Analysis of selected Latin American works of art in their cultural context.

HUM 581. DIRECTED STUDY (1-5)
PR: CBS requirement in humanities and CI. Specialized individual study determined by the student's needs and interest.

HUM 591. SELECTED PROBLEMS IN HUMANITIES (3)
PR: Senior classification and CI. Problems in the interrelationships among the fine arts and the natural, social and behavioral sciences. A senior essay for humanities majors.

FOR GRADUATE STUDENTS ONLY

HUM 611. STUDIES IN CONTEMPORARY ARTS AND LETTERS (4)
Concentration on major artists and recent trends.

HUM 623. STUDIES IN THE RENAISSANCE (4)
Masterpieces and major artists of the Renaissance in Europe and England.

HUM 681. DIRECTED STUDY (1-4)
Specialized independent study determined by the student's needs and interests.

HUM 683. SELECTED TOPICS IN HUMANITIES (1-4)
Each topic is a course of study in a subject not covered by a regular course.

LANGUAGE-LITERATURE (Interdisciplinary)

Faculty; Bentley, J.B. Camp, Carr, Cole, Deer, Gould, O'Hara, Robertson, Stanton.

LLI 301, 302. MAIN CURRENTS OF WESTERN THOUGHT I & II (3,3)
A study of the principal forces that have shaped Western thought since 1500. These include humanism, Protestantism, rationalism, romanticism, communism, and naturalism. Among the authors included in the course are Machiavelli, Swift, Newman, Freud, Dreiser, and Camus. 301: 1500-1720; 302: 1720-present.

LLI 305. THE IDEA OF PROGRESS (4)
A study of the ways in which the idea of progress has affected philosophical, social, political and literary theory since the Renaissance to the French revolution. Among the authors considered are: Bacon, Descartes, Pascal, Locke, Condorcet, Malthus, and Adam Smith.

LLI 306. THE IDEA OF UTOPIA (4)
A study of the relationship between the idea of progress and the growth of modern ideologies. Emphasis will be placed on the development of liberalism, Utopian socialism, social Darwinism and conservatism by the study of such authors as: Burke, T. Paine, J.S. Mill, R. Owen, T. Huxley, G. Orwell, and A. Malraux.

LLI 315. THE IDEA OF FREEDOM (3)
An analysis of the idea of freedom, both in general and in particular. Various philosophical, literary, and journalistics aspects will be analyzed: metaphysical, ethical, political, social, religious and economic.

LLI 321. LITERATURE AND THE OCCULT (4)
An introduction to the occult tradition as a major ingredient in English, Continental, and American literature; analysis of the origins, classifications, and areas of the various "black," or magic arts, including astrology, necromancy, spells, charms, occult practices, esoteric rites, from classical times through the present.

LLI 383. SELECTED TOPICS (3-5)
Course contents depend on students' need and instructor's interest. Agreement with instructor required *prior* to registration.

LLI 401. THREE CENTRAL IDEAS IN WESTERN CULTURE: HIERARCHY, MECHANISM AND ORGANISM (4)
A humanistic study of the structure and function of the three seminal ideas of hierarchy, mechanism and organism, with the main emphasis upon their significant influence in art, science and letters to 1900.

LLI 402. DOMINANT IDEAS IN THE 20TH CENTURY (4)
The impact of major scientific hypothesis on the various forms of cultural expression.

LLI 411. THE ROMANTIC IDEA OF THE SELF (4)
An investigation of the Romantic idea of the self as revealed in the works of major writers, philosophers, and psychologists of the 19th Century, with emphasis on the impact of this idea on contemporary thought.

LLI 483. SELECTED TOPICS (2-5)
PR: CI. Junior standing. Course contents depend on students' need and instructor's interest. Agreement with instructor required *prior* to registration.

LLI 583. SELECTED TOPICS (2-5)
PR: CI. Course contents depend on students' need and instructor's interest. Agreement with instructor required *prior* to registration.

LINGUISTICS

Faculty; Cole, chairman; Caflisch, Gessman, O'Hara, Silverman, Wall

LIN 301. INTRODUCTION TO LINGUISTICS (4)
Introduction to the basic principles of linguistic science: phonological and

grammatical analysis and description; language change and genetic relationships.

LIN 483. SELECTED TOPICS (3-5)
PR: CI. Course content depends upon students' needs and instructor's interest and may range over the entire field of linguistics.

FOR UPPER LEVEL AND GRADUATE STUDENTS

LIN 511. HISTORY OF LINGUISTIC THOUGHT (4)
Survey of the development of language study in the West from Antiquity to the present: Classical and medieval theories of language; origins of traditional grammar; rationalist linguistic theory and philosophical grammar, and an examination of the origin of contemporary linguistic controversies.

LIN 530. FIELD METHODS (4)
PR: LIN 301 and SPE 503. An introduction to the techniques of gathering language data in the field and to making an analysis of such data. Native informants are brought on campus to replicate the field experience: students will become familiar with equipment and tools used by linguists in the field.

LIN 540. THE SOCIAL STRUCTURE OF LANGUAGE (4)
PR: LIN 301, ENG 517, or, ENG 535. An analysis of the interrelation of a language and the structure of the society using it. The linguistic behavior patterns characteristic of particular social, political, economic, educational, and racial groups. Problems in communication between strata.

LIN 541. PSYCHOLINGUISTICS (4)
PR: CI. The nature of linguistic structure and its correlates in behavior and perception. Examination of the hypotheses of Whorf, Chomsky, and others.

LIN 543. KINESICS (4)
PR: CI. Introduction to kinesics and paralinguistics: the language of gesture, semiotics, religious ritual, and other significant areas of non-verbal communication.

LIN 551. STUDIES IN COMPARATIVE STRUCTURE (5)
PR: CI. An introduction to linguistic typology consisting in a systematic comparison of characteristic representatives of the various language types, such as Vietnamese, Malay, Hungarian, Swahili, Sanskrit, Hebrew, and others. No knowledge of any of these languages on the part of the student is presumed.

LIN 581. INDIVIDUAL RESEARCH (3-5)
PR: CI. Specialized individual work in area of student's interest.

LIN 583. SELECTED TOPICS (3-5)
PR: CI. Course content depends upon students' needs and instructor's interest and may range over the entire field of linguistics. Study of languages not otherwise offered, such as Japanese and Hindi. Enrollment can be repeated.

LIN 585. DIRECTED READING (4)
PR: CI. Readings in special topics. Must be arranged prior to registration.

FOR GRADUATE STUDENTS ONLY

LIN 601. PHONOLOGICAL DESCRIPTION (4)
Analysis of the phonological component of a grammar, its role and formal structures. The generative model is compared to taxonomic descriptions. Theory and data-solution problems.

LIN 602. SYNTACTIC DESCRIPTION (4)
Analysis of syntactic descriptions of various languages through data-solution problems in co-occurrence relations, agreement, permutation, conjoining, and embedding. Feature grammars and other models are discussed.

LIN 611. HISTORICAL LINGUISTICS (4)
An advanced survey of the principles and methodology of historical linguistics.

LIN 612. COMPARATIVE LINGUISTICS (4)
The principles and methodology of comparative linguistics, focusing upon a major Indo-European subfamily, such as Romance, Germanic, or Balto-Slavic.

LIN 621. STUDIES IN SEMANTICS (4)
Selected problems in the area meaning and the relationship between linguistic structure and cognition. Mappings of presupposition, kinship fields, emotive concepts, and other problems are surveyed. Theories such as Fodor-Katz-Chomsky, Ross-Lakoff-McCawley, and others are contrasted.

LIN 631. FORMAL STYLISTICS (4)
Studies in the relationship between the development of language study and literary criticism; developments in modern linguistic theory and their application to problems of aesthetics, literary structure, and style.

LIN 641. PRINCIPLES OF ENGLISH AS A SECOND LANGUAGE (4)
Analysis of the phonological, morphological, and syntactic features of English as a basis for linguistic application to problems of English language acquisition by non-native speakers.

LIN 661 TOPICS IN THEORETICAL LINGUISTICS (4)
Offerings will include current issues in any area of linguistic theory.

LIN 671. TOPICS IN APPLIED LINGUISTICS (4)
Offerings may include topics in such fields as sociolinguistics, psycholinguistics, and stylistics.

LIN 683. SELECTED TOPICS (3-5)
Content will depend upon instructor's interests and students' needs. Such topics as computational and mathematical linguistics, biolinguistics, dialectology and linquistic geography, and pidgins and creoles may be treated, as well as the study of the structures of languages not ordinarily taught.

LIN 685. DIRECTED READING (3-5)
Readings in special topics and specialized individual work. Must be arranged prior to registration.

LIN 699. RESEARCH AND THESIS (1-8)
Required of all candidates for the M.A. degree in Linguistics. Registration may be repeated, but accumulated credit may not exceed eight hours.

For a list of courses outside the core that may count toward the major in Linguistics, see the program requirements on P. 115.

ITALIAN

See MODERN LANGUAGES

JOURNALISM

See MASS COMMUNICATIONS

MANAGEMENT

(Former prefix: MGT)

Faculty: Bartlett, chairman; Birkin, Dutton, English, Hamilton, Harlow, C. Kayser, T. Kayser, Kenerson, Knipppen, Lefferts, Mitchell, Rogier, Rose, Richardson, J. J. Sherman, R. C. Sherman, Steinike, Tyree, Van Voorhis, Walsh, White, W. Young.

MAN 301. PRINCIPLES OF MANAGEMENT (5)
Organized system of concepts running the gamut from quantitative to behavior sciences which provide broad overview of science of management.

MAN 311. MANAGEMENT SYSTEMS (3)
PR: MAN 301, GBA 333, ECN 331. Study of interface between environment and open systems. Analysis and design of computer and noncomputer systems as tools in management planning and control.

MAN 321. BEHAVIORAL FACTORS IN ORGANIZATIONS (3)
PR: MAN 301 or CI. Integrates concepts learned in CBS Behavioral Area (or equivalent) into managerial framework. Includes theories of communication, delegation, discipline, group, motivation, needs, perception and rules.

MAN 331. INDUSTRIAL RELATIONS (3)
PR: MAN 301 or CI. Impact of unionization on management flexibility in decision making. Emphasis on theories and models that when applied bear upon how best to manage in union organized workplace in both public and private sectors.

MAN 341. PERSONNEL MANAGEMENT (3)
PR: MAN 301 or CI. Systematic analysis of multitude of functions in personnel; recruiting, selection, job evaluation, performance appraisal, wage and salary, incentives, training & development, etc., utilizing case approach.

MAN 421 OPERATIONS MANAGEMENT (3)
PR: MAN 311, GBA 351, ECN 331. Develops conceptual framework and principles applicable for any managerial decision process including proper utilization by line of staff expertise. Integrates previous courses into planning & control model.

MAN 431. ORGANIZATIONAL ANALYSIS (3)
PR: MAN 321 and Senior Standing. Theory and research findings from all previous management courses integrated by means of a rigorous conceptual model.

MAN 451. INTERPERSONAL DYNAMICS LABORATORY (3)
PR: MAN 321 or CI. More structured, content-oriented t-group model to provide, through task accomplishment, better awareness of application to modern management theory of concepts and tools from social sciences.

MAN 453. CHANGING ORGANIZATIONS (3)
PR: MAN 321 or CI. Central unifying concept is the Change Agent. Student exposed to total range of theory related to resistance to change and introduction of change including whether locus should be in or out of organization.

MAN 461. LEGAL CONSTRAINTS AND MANAGEMENT DECISION MAKING (3)
PR: MAN 331, GBA 361 or CI. Case analysis of legal constraints on managerial decision-making: FLSA; Workmen's Compensation; Anti-discrimination laws; Lie Detectors & Psychological Testing; NLRB rulings, court decisions, statutes.

MAN 463. SEMINAR IN MANAGEMENT CONTRACT ADMINISTRATION AND SETTLEMENT (3)
PR: MAN 331 or CI. Case exercises to test application of tools and theories pertaining to I.R. and other management functions involving conflicting interest groups that must integrate or co-exist, interact and cooperate.

MAN 465. LABORATORY IN THE RESOLUTION OF CONFLICT (3)
PR: MAN 321 or CI. In depth exposure to panorama of interdisciplinary theories having relationship to dispute settlement in any context. Controlled laboratory testing of said theories through cases and/or management game.

MAN 471. MANAGEMENT SCIENCE I (3)
PR: MAN 421 or CI. Heavy emphasis upon population of calculus, matrix algebra, boolean algebra, set theory, probability and game theories, and other operations research techniques to management problem analysis.

MAN 472. MANAGEMENT SCIENCE II (3)
PR: MAN 471 or CI. Examination of Linear Programming, dynamic programming, queuing, stochastic inventory models, markov chain analysis for applications to problem analysis and decision making under uncertainity.

MAN 473. QUANTITATIVE METHODS OF OPERATION: PLANNING AND CONTROL (3)
PR: MAN 472 or CI. Review of all conceptual tools, methods and techniques available to modern scientific manager including depth integration of how and why of quantitative decision process at policy level.

MAN 489. GUIDED RESEARCH IN MANAGEMENT (3)
PR: Graduating Quarter or CC. Student engages in integrating field project, or other research, where all of his course work can be utilized. Only most general departmental supervision is exercised; management is by results.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

MAN 501. SURVEY OF MANAGEMENT (3)
An analysis of the theory and practice of management, including a study of the determination of goals and means, the functions of management, decision-making and the administrative process in general.

FOR GRADUATE STUDENTS ONLY

MAN 601. HUMAN RESOURCE MANAGEMENT (3)
Investigates some of the complex factors important for a basic understanding of human behavior in formal organizations. Within a systems framework (the variables considered are mutually dependent) and using the case method approach, discussion topics include motivational aspects of individual, inter and intra-group behavior.

MAN 602. ADMINISTRATIVE DECISION PROCESSES (3)
PR: GBA 603, GBA 605, (both may be concurrent). Analysis of the rational components of executive decision and action: objective functions, constraints, admissible courses of action, search, sequential learning and decision revision. Students build models of characteristic systems and use optimization techniques and heuristic simulation to investigate model properties.

MAN 603. ORGANIZATIONAL COMMUNICATIONS (3)
Analysis, organization, and presentation of research findings. Students learn through individual efforts and class discussion how to define a topic, organize data relevantly, and present written material in forms acceptable to industry and the academic community. Each student is expected to complete at least one research project and contribute to the efforts of his colleagues through group interaction in weekly "workshop" sessions which typify the class meetings.

MAN 606. ADVANCED MANAGEMENT SCIENCE (3)
PR: GBA 603. Study of current operations research techniques, including dynamic (non-linear) programming, Markov chain analysis as they apply to problems in the business firm.

MAN 607. SEMINAR IN INDUSTRIAL RELATIONS (3)
An in-depth study and analysis of critical and/or current problems in industrial relations.

MAN 608. SEMINAR IN OPERATIONS ANALYSIS (3)
PR: GBA 603. Analytical study of planning and control with particular stress on operational problems and decision-making. The use of simulation will be treated.

MAN 609. ADVANCED INTERPERSONAL DYNAMICS (3)
PR: MAN 601 or equivalent. The study of personal and interpersonal behavior through experiencing the information via experiments, as well as a study of the relevant literature.

MAN 610. SEMINAR IN QUANTITATIVE METHODS I (3)
PR: GBA 603, GBA 605, MAN 606, MAN 608. Operational analysis of management measurements including: value analysis, cost-benefit analysis, payoff-trees and tables, PERT/CPM, the computer as a tool in managerial decisions. Stresses the functional use of quantitative methodology.

MAN 611 OR EQUIVALENT. SEMINAR IN ORGANIZATION THEORY (3)
PR: MAN 601. The study of the structure, functions, and dynamics of modern organizations. Stress is given to the contributions of behavioral science to analysis of formal and informal organizations.

MAN 613 OR EQUIVALENT. SEMINAR IN ORGANIZATIONAL CHANGE (3)
PR: MAN 601. The study of organizational change with special stress on adaptation

of the firm, or sub-strata of the firm, to environmental alteration. Intra-firm analysis, and sensitivity training are also covered.

MAN 615. SEMINAR IN ADMINISTRATIVE POLICY (3)
PR: *Final quarter of M.S. degree program or CC.* A course designed to present an organized and integrated approach to the managerial decision-making process. This course should be taken in the *final* quarter of the quarter of the program.

MAN 699. FIELD RESEARCH OR THESIS (6).
PR: Consent of Chairman.

MARINE SCIENCE

Faculty: Humm, director & chairman; Full-time at St. Petersburg campus—Baird, Carder, Hopkins, Pyle; Associate faculty—Betz, Bloch, Briggs, Dawes, Flynn, Friedl, Griffin, Lawrence, Linton, Martin, Merner, Ross, Simon, Smyth, Strong, Taft.

OGY 311. INTRODUCTION TO OCEANOGRAPHY (3)
A survey of modern oceanography and its methods, including the important features of physical, chemical, biological and geological oceanography.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

OGY 521. CHEMICAL OCEANOGRAPHY (4)
PR: CHM 213 and CI. The ocean as a chemical system, including composition, physical-chemical aspects, role of nutrients, trace metals, interaction between bottom and overlying water, modern methods of analysis in routine use in oceanography. lec-lab.

OGY 531 . GEOLOGICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI. An introduction to the physical, historical sedimentary, and structural geology of the ocean basins and their borders. lec-lab.

OGY 541. PHYSICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI, PHY 225. The world ocean including its morphology, physical properties, currents, waves, tides, heat budget, and related topics. lec-lab.

OGY 551. BIOLOGICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI, BIO 201-203. The study of life in the sea with special reference to distribution, reproduction, adaptation, competition, and populations. lec-lab. For students who have not majored in a biological science.

FOR GRADUATE STUDENTS ONLY

OGY 681. GRADUATE RESEARCH (1-9)
PR: CI. Directed research on non-thesis topics. May be repeated.

OGY 691. GRADUATE SEMINAR IN OCEANOGRAPHY (1)
PR: Graduate standing. May be repeated.

OGY 699. M.A. THESIS (1-9)
PR: CI. May be repeated to a maximum of 9 credits.

MARKETING

Faculty: Sleeper, chairman; Carmichael, DeBord, Futhey, Heath, Nicholas, Oescher, Stevens, Towery, Wallace, B. M. Williams.

MKT 301. BASIC MARKETING (5)
PR: ECN 201-202 or CI. Survey of the marketing of goods and services within the economy. The integration of functional, commodity, and institutional approaches from the consumer and managerial viewpoints.

MKT 311. PRINCIPLES OF SALESMANSHIP AND SALES MANAGEMENT (3)
PR: MKT 301. Personal selling and sales management as basic elements in the marketing strategy of firms. Includes the scientific management of resources and the dynamics of interpersonal and small group behavior and decision processes.

MKT 312. PRINCIPLES OF ADVERTISING AND SALES PROMOTION (3)
PR: MKT 301. A comprehensive coverage of advertising, stressing purposes, techniques, organization, research, and media selection including relationships with other marketing mix components. Consideration given to economic and social aspects of advertising and total promotional strategies.

MKT 315. MARKETING INSTITUTIONS AND CHANNELS (4)
PR: MKT 301. A detailed study of marketing channels as a functional area of marketing management responsibility and as a part of marketing strategy. Attention given to wholesaling and retailing and their structural, dynamic interrelationships including distribution logistics.

MKT 316. MARKETING MODELS AND MARKETING SYSTEMS (3)
PR: ECN 331, MKT 315, and GBA 333. An investigation of the utility of formal, logical, mathematical, and other quantitative methods and models as these might be applied to marketing management.

MKT 401. MARKETING LOGISTICS (3)
PR: MKT 315, ECN 331, GBA 333, or CI. Analysis of the logistics of marketing systems for firms engaged in the marketing of goods and services. Component parts of each system are studied and analytical tools are presented for selecting those alternatives which will attain the goals of the firm.

MKT 403. PUBLIC RELATIONS AND THE MARKETING PROCESS (3)
PR: MKT 312 or CI. Principles, practices, and problems in public relations as an integrated part of and supplement to marketing management responsibilities and decisions.

MKT 405. INDUSTRIAL MARKETING (3)
PR: MKT 315. Problems of marketing industrial goods. Characteristics of markets, channels, industrial sales, promotional practices, research and marketing policies.

MKT 407. MANAGEMENT OF ADVERTISING AND SALES PROMOTION (3)
PR: MKT 312, MKT 315. Discussion and analysis of cases bearing on managerial aspects of advertising and sales promotion including research, budget determination, strategy, tactics, and evaluation of results.

MKT 409. INTERNATIONAL MARKETING (3)
PR: MKT 312, MKT 315, or CI. A study of the procedures and problems associated with establishing marketing operations in foreign countries. The institutions, principles and methods involved in the solution of these business problems will be treated as well as effects of national differences on business practices.

MKT 411. MARKETING RESEARCH (4)
PR: MKT 312, MKT 315, ECN 331 or MTH 345; or CI. A study of research methods applicable to problem-solving in the field of marketing.

MKT 413. CONSUMER BEHAVIOR (3)
PR: MKT 301 or CI. An investigation and application of the behavioral factors affecting consumer demand. Consideration given to industrial, governmental, and ultimate consumers.

MKT 414. SEMINAR IN MARKETING AND CONSUMER BEHAVIOR RESEARCH (3)
PR: MKT 312, MKT 315, MKT 411, MKT 413. Indepth discussion, formulation application, and evaluation of advanced research techniques and practices as currently applied to facilitate marketing decisions.

MKT 417. RETAILING MANAGEMENT (3)
PR: MKT 301, MKT 315, MKT 413. A comprehensive analysis of the retailing structure, institutions and environment. To include pertinent management theories and practices of organizing, planning and controlling retail operations.

MKT 419. MARKETING MANAGEMENT PROBLEMS (4)
PR. MKT 411. MKT 413, and 3 other MKT courses, or CI. The integration of marketing knowledge applied to decision roles in managing the total marketing

effort of firms, and coordination with other major functional areas on specific problems.

MKT 489. SPECIAL STUDIES IN MARKETING (1-3)
PR: MKT major and CI. Intensive independent research in marketing under the direction of a major professor; progress and final analysis reported in seminar.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

MKT 501. SURVEY OF MARKETING (3)
PR: ECN 501. A critical analysis of the field of marketing including aspects of marketing policies, institutions, research, and trends. Special emphasis given to product development, pricing strategy, channel selection, and promotion as a basis for marketing management decisions. Assigned readings, discussions, and reports.

FOR GRADUATE STUDENTS ONLY

MKT 601. ADVANCED MARKETING PROBLEMS (3)
PR: MKT 301 or 501, ECN 605. A study of the marketing problems of the firm approached from a management point of view. Emphasis is placed upon the development of the student's ability to analyze marketing situations, identify problems, determine solutions, implement corrective action, and plan marketing strategy.

MKT 602. ANALYSIS FOR MARKETING MANAGEMENT (3)
PR: MTK 601, GBA 603, ECN 605, or CI. The use of quantitative techniques and analytical concepts in marketing decision making; marketing research model building and simulation; selected statistical decision techniques and computer applications.

MKT 603. SEMINAR IN MARKETING (3)
PR: MKT 301 or 501; ECN 601, 605. The study of contemporary marketing thought, advanced marketing concepts, and recent developments in the field of marketing. Readings, discussions, and individual investigation.

MKT 605. BEHAVIORAL CONCEPTS IN MARKETING DECISION MAKING (3)
PR: MKT 601 or CI. The application and techniques of the behavioral sciences to the understanding and improvment of the marketing process and decision making concerning consumer behavior.

MTK 607. SEMINAR IN PROMOTIONAL POLICY AND STRATEGY (3)
PR: MKT 605 or CI. An analysis of theories and practices of advertising, selling and sales management, and sales promotion as they relate to the total marketing program of firms. Emphasis upon the coordination of promotional policy and strategy.

MKT 609. MARKETING CHANNELS AND PHYSICAL DISTRIBUTION MANAGEMENT (3)
PR: MKT 602, MKT 605, or CI. An analysis of the development of integrated distribution systems. Channel alternatives including the institutions involved and physical flow as a part of marketing strategy.

MKT 611. MARKETING RESEARCH AND INFORMATION SYSTEMS (3)
PR: MKT 602, GBA 603, GBA 605, or CI. A study of the marketing research process, methods and techniques and the need and applicability of information systems.

MKT 683. DIRECTED RESEARCH IN MARKETING (1-6)
PR: MKT 601, MKT 602, and CI. Intensive advanced independent research in marketing guided by a marketing professor.

MASS COMMUNICATIONS

Faculty: Sanderson, chairman; Carr, Griscti, Horsman, Lucoff, O'Hara, Parker, Stalnaker, Yates.

CBS 101. FRESHMAN ENGLISH (4)
One section each fall quarter is reserved for journalism-interest students.

COM 300. INTRODUCTION TO MASS COMMUNICATIONS (3)
The functions of agencies of mass communication and their impact upon society; critical analyses of press performance in relation to current events; evaluation of the press through a study of its history, with emphasis on the print media. (Formerly JNM 341.)

COM 301. THE POPULAR ARTS IN AMERICA (4)
A survey of the growth of the popular arts (motion pictures, radio, television, art, best sellers, jazz and other forms of music, the comics, etc.) as mirrors, transmitters and transformers of American cultural values.

MKT 312. PRINCIPLES OF ADVERTISING AND SALES PROMOTION (3)
For course description, refer to Department of Marketing section.

COM 313. ADVERTISING COPYWRITING AND LAYOUT (4)
PR: MKT 312, or CI. Application of persuasive writing techniques and principles of design and graphic arts to mass media advertising, including copy, visualization, layout, typography, print production, TV storyboards, radio commercials, film, etc.

COM 321. MAGAZINE ARTICLE AND FEATURE WRITING (4)
PR: CBS 102. Planning, researching, writing and marketing articles for general and special interest magazines and newspaper magazine supplements; experience in developing article ideas; inductive analysis of contemporary magazine articles. (Formerly JNM 349.)

COM 325. MAGAZINE EDITING (4)
PR: COM 330. Comparative study of types of magazines and businesspapers as to objectives and content; planning to meet magazine objectives and reader interest; article and photograph selection and preparation for printing; use of research methods in planning and evaluation; ethical and legal limitations and administrative problems of the editor.

COM 330. BEGINNING REPORTING (4)
PR: CBS 102. Basic instruction in news judgment, sources of news, newsgathering, and newswriting techniques. Typing ability is required. (Formerly JNM 342.)

COM 331. ADVANCED REPORTING (4)
PR: COM 330. Getting information and writing the more complex and specialized story; techniques of investigative and analytical reporting, including ethical and legal considerations. (Formerly JNM 343.)

COM 338. NEWSPAPER MANAGEMENT (2)
PR: COM 331 or CI. A pro-seminar to discuss advertising, business, circulation, mechanical, personnel, promotional, and news-editorial operations of the press with editors and managers of leading daily and weekly newspapers.

COM 341. PRINCIPLES OF PUBLIC RELATIONS (4)
PR: COM 330 and junior standing, or CI. The role and functions of public relations within corporate and institutional structures; ethical practices, especially as influences in shaping or altering public opinion.

COM 351. LITERATURE AND THE FILM (3)
PR: CBS 102. A study of what happens when a novel is adapted for the movies; of the insights of modern writers and literary critics into the motion picture as an art form analogous to, yet distinct from, literature and of the impact of literature on film-making (Formerly LLI 311.)

COM 352. PHILOSOPHY AND THE FILM (3)
PR: CBS 102. A study of the philosophical implications of the motion picture as an art form: esthetics in general versus film esthetics, and the connections between the world views of such modern philosophers as Bergson, Whitehead and Bradley and the world view expressed through the motion picture; the connections between "pure ideas," the ideas in the documentary film, and the ideas in the fictional film. (Formerly LLI 312.)

COM 353. INTRODUCTION TO FILM WRITING (4)
PR: CBS 102 and CI. An introduction to the techniques of writing for the film with special emphasis on adaptations from fiction and examinations of scripts as models and as subjects for critical analysis. (Formerly LLI 313.)

COM 354. THE FILM AS MASS COMMUNICATION I: SYNTAX (4)
PR: CBS 102; and junior standing or CI. The language, conventions, elements and patterns of the film medium as related to current models of effective mass communication and new theories of non-verbal communication.

COM 355. THE FILM AS MASS COMMUNICATION II: RHETORIC AND STYLISTICS (4)
PR: COM 354 or CI. A continuation of COM 354 to include the effective arrangements of scenes and sequences in motion picture and television films.

COM 356. THE FILM AS MASS COMMUNICATION III: WORKSHOP (4)
PR: COM 355, or CI. Practical exercises, demonstrations and experiences in applying material covered in COM 354 and 355.

COM 357. CLASSICS OF THE SILENT FILM (4)
Examples of the silent film studied from social, intellectual, historical, and artistic points of view. (Formerly CBS 460.)

COM 358. CLASSICS OF THE SOUND FILM (4)
Examples of the sound film studied from social, intellectual, historical, and artistic points of view.

COM 371. PHOTOJOURNALISM I (4)
PR: CBS 102. Camera operation, darkroom techniques, picture composition; editing, ethics, history and laws in connection with photojournalism.

COM 372. PHOTOJOURNALISM II (4)
PR: COM 371 or CI. Extensive study and use of color in photography and newspaper production, including the theory and actual photomechanical color separation; study will be given to certain laws of science as they relate in photography to light, optics, films, chemicals, and color.

COM 375. TYPOGRAPHY I (4)
PR: CBS 102. The history and design of type, major classifications of type faces, typographic nomenclature, printer's measurements and the science of type design and identification.

COM 376. TYPOGRAPHY II (4)
PR: COM 375, or CI. A study of the history of typesetting, the emergence of computers and coldtype composition; extensive study and use of copyfitting methods for body type and headlines; principles of typography and photocomposition including readability and legibility.

COM 403. HISTORY AND PRINCIPLES OF COMMUNICATIONS LAW (4)
PR: Junior standing. Historic and Constitutional backgrounds of freedom and control of expression, statutory enactments, major Supreme Court cases, court decisions and administrative rulings which have shaped legal control of communications.

COM 425. MAGAZINE PLANNING AND PRODUCTION (4)
PR: COM 325, COM 371, COM 375. Research in new magazine design and production techniques; training in the creative use of typography, photography, art work, text in the "area concept"; letterpress and offset production; financial management of magazines; preparation of a detailed dummy for a model magazine.

COM 433. NEWS EDITING I (4)
PR: Com 331. Evaluating news and its display; editing and rewriting copy for the mass media, with emphasis on the daily newspaper; typography, makeup, and news judgment; ethical problems. (Formerly JNM 347.)

COM 434. NEWS EDITING II (4)
PR: COM 433. Continuation of COM 433, with more intensive practice on the copydesk in processing live copy and its display; evaluating, editing and headlining wire copy; managing the news desk. Laboratory work.

COM 441. WRITING FOR PUBLIC RELATIONS (4)
PR: COM 341. Persuasive writing formats and techniques unique to the practice of public relations; applied principles and ethical practices in problem-solving situations drawn from case studies; writing techniques used in publicity and promotional literature.

COM 451. SOCIAL HISTORY OF THE FILM TO 1945 (4)
PR: CBS 102. The industrial, technological, philosophical and social factors

bearing on the rise and development of the motion picture as a popular art. Intensive study of a series of films through screenings and readings.

COM 452. SOCIAL HISTORY OF THE FILM, 1945 TO THE PRESENT (4)
PR: CBS 102 and COM 451 or CI. A continuation of COM 451, covering the development of the film from 1945 to the present.

COM 453. THE DOCUMENTARY FILM (4)
PR: CBS 102. The development of the documentary movment: Kino-Pravda, Flaherty, Grierson and the GPO Unit, Reifenstahl, U.S. Government-sponsored films, the Canadian Film Board, Cinema Verite, Maysles, etc.

COM 454. FILM CRITICISM (4)
PR: Junior standing. The film as a mass medium, comparing and contrasting its mass communication aspects with other important aspects. Critical analyses of selected films and intensive readings in the theory of film. Literary, social dramatic, philosophic and historic approaches to film criticism.

COM 481. INDIVIDUAL RESEARCH IN MASS COMMUNICATIONS (var.)
PR: CC and CI. The course provides means for a student to do independent study in an area not covered by a numbered course.

COM 483. SELECTED TOPICS IN MASS COMMUNICATIONS STUDIES (var.)
PR: CI and junior standing. Courses designed to meet current or specific topics of interest to the instructor and students.

COM 485. DIRECTED READINGS IN MASS COMMUNICATIONS STUDIES (var.)
PR: CI and CC, and junior standing. Reading and directed study in special topics.

COM 491. SENIOR SEMINARY: INTERCOMMUNICATION—THE MASS MEDIA IN PERSPECTIVE (4)
PR: Senior standing and 12 hours of COM. The inter-relationships among the mass media and institutions; their effect upon each other and upon contemporary society.

COM 500. THEORY OF MASS COMMUNICATIONS (4)
PR: Senior standing. The nature of the mass communication process, its effects on individuals and groups; the moral, ethical, social and political implications in influencing and directing behavior. Analyses of theories of mass communication, primarily those of McLuhan, Schramm, Lazarsfeld, Seldes, Reisman, and Katz.

COM 539. SEMINAR: PROBLEMS IN NEWS-EDITORIAL JOURNALISM (2)
PR: Senior standing and COM 433 or COM 491, or CI. A study of the role of the free press in a democracy and its efforts to fulfill its social and ethical obligations by analyses and discussions of the problems which face the reporter, editor, and publisher.

COM 541. PUBLIC INFORMATION (4)
PR: Senior standing and COM 341, or CI. The functions and obligations of information specialists as public employees in reporting news of increasing complex government to the people.

COM 581. INDIVIDUAL RESEARCH IN MASS COMMUNICATIONS (1-4)
PR: Senior standing, CI and CC. The course provides means for a student to do independent study in an area not covered by a numbered course.

COM 583. SELECTED TOPICS IN MASS COMMUNICATIONS STUDIES (1-4)
PR: Senior standing or CI. Courses designed to meet current or specific topics of interest to the instructor and students.

COM 585. DIRECTED READINGS IN MASS COMMUNICATIONS STUDIES (1-4)
PR: Senior standing, CI and CC. Reading and directed study in special topics.

MATHEMATICS

Faculty: Ratti, chairman; Braun, Chesley, Clark, Gard, Goodman, Isaak, Liang, Lieberman, Y-F. Lin, Manougian, Michaelides, Mukherjea, Pothoven, Price, J. H. Reed, E. Saff, Snider, Thieleker, Tserpes, Zerla.

MTH 101. FOUNDATIONS OF UNIVERSITY MATHEMATICS (5)
PR: Two years of secondary school alegebra, one year of plane geometry. Real numbers and their properties; introduction to analytic trigonometry and geometry. (No student who has previously earned a "C" or better in MTH 211 or MTH 302 or their equivalents will receive credit for MTH 101.)

MTH 211. ELEMENTARY CALCULUS I (4)
PR: Two years of secondary school algebra, one year of plane geometry or C.C. Real numbers exponential, logarithmic and trigonometric functions. The sequence MTH 211-212-213 is primarily for students from Biological Sciences, Social Sciences and Business. (No credit for math majors or students with credit in MTH 101.)

MTH 212. ELEMENTARY CALCULUS II (4)
PR: MTH 211 or CC. Rules for differentiation, applications of the derivative, definite integral, fundamental theorem of calculus, integration. (No credit for students with credit in MTH 302.)

MTH 213. ELEMENTARY CALCULUS III (4)
PR: MTH 212. Functions of several variables, partial derivatives, introduction to infinite series (No credit for students with credit in 302.)

MTH 302. CALCULUS I (5)
PR: MTH 101 with a grade of "C" or better or CC. Limits derivatives applications, definite integral.

MTH 303. CALCULUS II (4)
PR: MTH 302 with a grade of "C" or better or CC. Antiderivatives, the definite integral, applications, log, exponential, and trig functions.

MTH 304. CALCULUS III (4)
PR: MTH 303 with a grade of "C" or better or CC. Integration, polar coordinates, conic sections, vectors, indeterminate forms and improper integrals.

MTH 305. CALCULUS IV (4)
PR: MTH 304 with a grade of "C" or better or CC. Vectors in 3-space, partial derivatives, multiple integrals, infinite series.

MTH 309. SET THEORY (3)
PR: MTH 302 or CC. Relations, functions, order, cardinal numbers.

MTH 323. LINEAR ALGEBRA (4)
PR: MTH 302 or CC. Vectors, matrices, systems of linear equations, linear transformations.

MTH 345. INTRODUCTORY STATISTICS I (5)
Hypothesis testing, estimation; normal, Chi-square, t, F, binomial, multinomial, distributions; ANOV, CR, RCB designs; single df, regression, correlation, contingency tables. Students who successfully complete this course may *not* also receive credit for either ECN 331-431 Business and Economic Statistics or SSI 301 Social Science Statistics.

MTH 346. INTRODUCTORY STATISTICS II (5)
PR: MTH 345 or CC. Factorials, ANCOV; multiple curvilinear regression; response surfaces; Latin square, Split Plots, incomplete blocks designs; distribution free methods.

MTH 401. DIFFERENTIAL EQUATIONS (4)
PR: MTH 305. First order linear and nonlinear differential equations, higher order linear equations, applications.

MTH 405. ADVANCED CALCULUS I (4)
PR: MTH 305 with a grade of "C" or better. Functions of several variables, partial derivatives, implicit-function theorems, transformations.

MTH 406. ADVANCED CALCULUS II (4)
PR: MTH 405. Continuation of MTH 405.

MTH 420. ELEMENTARY ABSTRACT ALGEBRA (3)
PR: MTH 309 or CC. Groups, rings, integral domain, fields, integers, the rational, real and complex number systems.

MTH 423. GEOMETRY I (3)
PR: MTH 302. Emphasis on axiomatics, advanced Euclidean geometry, elements of projective geometry, non-Euclidean geometries.

MTH 424. GEOMETRY II (3)
PR: MTH 423. Continuation of MTH 423.

MTH 431. VECTOR ANALYSIS (3)
PR: MTH 305. The algebra and calculus of vectors, applications, general coordinates, introduction to tensor analysis.

MTH 445. INTRODUCTORY PROBABILITY THEORY I (3)
PR: MTH 305 and MTH 309 or CC. Probability spaces, discrete and continuous probability distributions, expectations.

MTH 446. INTRODUCTORY PROBABILITY THEORY II (3)
PR: MTH 445. Joint distributions, sums of random variables, weak and strong laws of large numbers, limit theorems.

MTH 447. NUMERICAL ANALYSIS (4)
PR: MTH 401. Interpolation and quadrature, finite differences, numerical solution of algebraic and transcendental equations, numerical solutions of differential equations, computer techniques.

MTH 471. THE SCOPE AND SIGNIFICANCE OF MATHEMATICS (3)
(For non-science majors)
PR: Senior or junior standing. Students having completed MTH 302 are not eligible to enter this course. The development of mathematical thought and its application to the physical world, the social sciences, and the fine arts, emphasizing the importance and meaning of mathematics in comtemporary culture.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

MTH 501. ADVANCED DIFFERENTIAL EQUATIONS (4)
PR: MTH 401 or CC. Series solutions of second order linear equations, boundary value problems, existence theorems and Fourier series.

MTH 510. ELEMENTARY MATHEMATICAL LOGIC (3)
PR: CC. Truth tables, tautologies, quantifiers, rules of inference, informal proofs in mathematics.

MTH 511. ADVANCED LINEAR ALGEBRA (4)
PR: MTH 309, 323 or CC. Vector spaces, linear independence, dimension, matrices, linear transformations.

MTH 513. REAL ANALYSIS I (4)
PR: MTH 305 and 309. Continuity, differentiation and derivatives, sequences and series of functions, convergence.

MTH 514. REAL ANALYSIS II (4)
PR: MTH 513. Continuation of MTH 513.

MTH 515. CALCULUS ON MANIFOLDS (4)
PR: MTH 511 and 514. Calculus of several variables.

MTH 520. COMPLEX ANALYSIS I (4)
PR: MTH 405. Complex numbers, analytic functions and mappings, integrals.

MTH 521. COMPLEX ANALYSIS II (4)
PR: MTH 520. Power series, residues and poles, conformal mapping.

MTH 523. ALGEBRA I (4)
PR: MTH 305 and 309. Semi-groups and groups. Rings and ideals; homomorphisms.

MTH 524. ALGEBRA II (4)
PR: MTH 523. Polynomial rings, integral domains; factorization. Fields and field extensions; reducibility.

MTH 531. TOPOLOGY I (4)
PR: MTH 305 and MTH 309. Metric and topological spaces, continuity, homeomorphisms, connectedness, fundamental group, compact spaces, separation axioms, product spaces.

MTH 532. TOPOLOGY II (4)
PR: MTH 531. Continuation of MTH 531.

MTH 541. APPLIED MATHEMATICS I (4)
PR: MTH 401 or CC. Elements of complex analysis, Laplace transforms, Fourier

series, and Fourier transforms. Mathematical techniques for scientists and engineers. Equivalent to PHY 541.

MTH 542. APPLIED MATHEMATICS II (4)
PR: MTH 401 or CC. Series solutions of differential equations, Strum-Liouville Theory, Green's functions, integral equations, special functions, eigenvalue problems, and diagnolization of matrices. Mathematical techniques for scientists and engineers. Equivalent to PHY 542.

MTH 543. INTEGRAL TRANSFORMS I (4)
PR: MTH 401, 405, or CC. Introduction to integral transforms with special emphasis on the Laplace and Fourier transforms, applications to differential equations.

MTH 544. INTEGRAL TRANSFORMS II (4)
PR: MTH 543. Continuation of MTH 543.

MTH 545. STATISTICAL METHODS IN RESEARCH I (4)
Primarily for graduate students with research problems. Distribution of sample statistics estimation, tests of hypotheses.

MTH 546. STATISTICAL METHODS IN RESEARCH II (4)
PR: MTH 545 or CC. Randomized blocks, Latin squares, factorials, regression, correlation, split plots.

MTH 548. INTRODUCTORY THEORETICAL STATISTICS (5)
PR: MTH 305 and either MTH 345 or equivalent. Frequency, sampling, limiting distributions and their moments; theory of point and interval estimation, hypothesis testing, ANOV.

MTH 549. INTRODUCTORY THEORY OF LEAST SQUARES (5)
PR: MTH 305 and either MTH 548 or CC. The general linear hypothesis, least squares for experimental design models, components of variance. Applications.

MTH 553. INTRODUCTION TO GRAPH THEORY (3)
PR: CC. Brief introduction to classicial graph theory (4 - color conjecture, etc.), directed graphs, connected digraphs, point bases, condensations, incidence matrices, Polya's Theorem.

MTH 560. ANALYSIS OF ALGORITHMS I (4)
PR: MTH 448 or CC. Mathematical Theory associated with algorithms for computer information processing; expected time and space requirements of algorithms, comparison of alogrithms, construction of potional algorithms, theory, underlying particular algorithms.

MTH 561. ANALYSIS OF ALGORITHMS II (4)
PR: MTH 560. Continuation of MTH 560.

MTH 563. ANALYSIS OF NUMERICAL METHODS I (4)
PR: MTH 323, MTH 401, EG 231 or CC. Corequisite: MTH 405. Numerical matrix techniques, Iterative solutions of equations, polynomial approximations, numercial differentiation and integration, solution of ordinary and partial differential equations, accuracy and round-off error, convergence.

MTH 564. ANALYSIS OF NUMERICAL METHODS II (4)
PR: MTH 563. Continuation of MTH 563.

MTH 571. GEOMETRY FROM AN ADVANCED STANDPOINT (3)
PR: A bachelor's degree or CC. Axiomatic development of geometries, with emphasis on Euclidean geometry, for teachers and others.

MTH 573. SET THEORY AND ALGEBRA FROM AN ADVANCED STANDPOINT (3)
PR: A bachelor's degree or CC. Basic concepts of the language of mathematics, including a study of relations, functions, algebraic structures, for teachers and others.

MTH 583. SELECTED TOPICS (1-6)
PR: Senior or junior standing and CC. Each topic is a course of study. 01-History of Mathematics, 03-Logic and Foundations, 05-Number Theory, 07-Topics in Algebra, 09-Mathematics for Physics, 11-Topics in Probability and Statistics, 13-Topics in Analysis, 15-Topics in Topology.

FOR GRADUATE STUDENTS ONLY

MTH 603. THEORY OF ORDINARY DIFFERENTIAL EQUATIONS I (4)
PR: MTH 501 or CC. Existence theorems, topics in oscillation theory, asymptotic behavior, stability and boundedness of solutions of differential equations.

MTH 604. THEORY OF ORDINARY DIFFERENTIAL EQUATIONS II (4)
PR: MTH 603. Continuation of MTH 603.

MTH 614. MODERN ANALYSIS I (4)
PR: CC. Metric and Banach spaces, integration and measure in locally compact spaces, function spaces.

MTH 615. MODERN ANALYSIS II (4)
PR: MTH 614. Continuation of MTH 614.

MTH 617. BANACH SPACES AND ALGEBRAS I (4)
PR: MTH 607. Topological vector spaces, normed spaces, dual spaces with various topologies, Lp spaces, Banach algebras.

MTH 618. BANACH SPACES AND ALGEBRAS II (4)
PR: MTH 617. Continuation of MTH 617.

MTH 624. ABSTRACT ALGEBRA I (4)
PR: CC. Structure theory of fields; ideals and modules.

MTH 625. ABSTRACT ALGEBRA II (4)
PR: MTH 624. Noetherian rings; ideal theory.

MTH 627. HOMOLOGICAL ALGEBRA (3)
PR: MTH 625. Categories and functors, homology of complexes, cohomology, spectral sequences.

MTH 629. LIE GROUPS (3)
PR: MTH 615, 625 or 633 and CC. Topological groups, representation of compact Lie groups, algebraic groups.

MTH 632. ADVANCED TOPOLOGY I (4)
PR MTH 532 and CC. Function spaces, compactifications, covering spaces, other topics.

MTH 633. ADVANCED TOPOLOGY II (4)
PR: MTH 632. Continuation of MTH 632.

MTH 635. ALGEBRAIC TOPOLOGY (3)
PR: MTH 633 or CC. Homotopy, homology groups, local homology groups.

MTH 636. TOPOLOGICAL ALGEBRA I (4)
PR: MTH 633 and CC. Topological semigroups, topological groups, topological rings and fields, Haar measure.

MTH 637. TOPOLOGICAL ALGEBRA II (4)
PR: MTH 636. Continuation of MTH 636.

MTH 639. DIFFERENTIAL GEOMETRY (3)
PR: CC. Local differential geometry, curvature, evolutes and involutes, calculus of variations.

MTH 643. PARTIAL DIFFERENTIAL EQUATIONS I (4)
PR: MTH 401 and CC. Classification of second order equations, Cauchy problems, Dirichlet and Neumann problems, mixed problems, properties of solutions.

MTH 644. PARTIAL DIFFERENTIAL EQUATIONS II (4)
PR: MTH 643. Continuation of MTH 643.

MTH 645. PROBABILITY THEORY (4)
PR: MTH 514 or CC. Distribution functions, Random variables, Expectations, Independence, Concepts for convergence of sequences of random variables, Law of large numbers, Central limit theorem.

MTH 651. LOGIC AND FOUNDATIONS I (4)
PR: CC. Propositional calculus, Post's theorem, first order and equality calculi, models, completeness and consistency theorems, Gödel's theorem, recursive functions.

MTH 652. LOGIC AND FOUNDATIONS II (4)
PR: MTH 651. Continuation of MTH 651.

MTH 657. CALCULUS OF VARIATIONS (4)
PR: MTH 514 and CC. Maxima and minima of functionals, problems of Lagrange, Bolza and Mayer and other topics.

MTH 659. ALGEBRAIC NUMBER THEORY (4)
PR: MTH 524 or CC. Algebraic number fields, algebraic integers, basis and discriminant of alegebraic number fields. Ideals, decomposition of ideals, Theorem of Minkowski, Applications of Galois Theory to the Theory of ideals, Units.

MTH 681. GRADUATE RESEARCH (1-15)
PR: CC. (S/U grade only.)

MTH 683. SELECTED TOPICS (1-6)
PR: CC. 01-Topology, 02-Analysis, 03-Algebra, 04-Applied Mathematics, 05-Graph Theory, 06-Number Theory.

MTH 688. RECENT ADVANCES IN MATHEMATICS WITH EMPHASIS ON THEIR IMPACT ON COLLEGE-LEVEL COURSES (3-6)
A course designed to consider and study the recent developments of mathematics especially those developments that have an effect on altering the basic concepts and ideas of mathematics and imply a change in the presentation of introductory material in the field (Credit not applicable toward thesis degree requirements.) (S/U Grade only.)

MTH 689. DIRECTED RESEARCH (3-9)
Supervision of the teaching of graduate teaching assistants in elementary and/or laboratory courses. (Credit not applicable toward thesis degree requirements.) (S/U Grade only)

MTH 691. GRADUATE SEMINAR (1-6)
Direction of this seminar is by a faculty member. Students are required to present research papers from the literature. (S/U Grade only.)

MTH 699. THESIS (1-9)
May be taken more than once, but not more than a total of nine hours credit will be allowed. (S/U Grade only.)

MEDICINE

MED 600. GROSS ANATOMY (7)
PR: Admission to College of Medicine. A study of the gross structure of the human body. Lec-lab and discussion.

MED 601. DEVELOPMENTAL ANATOMY (EMBRYOLOGY) (2)
PR: Admission to College of Medicine. Studies of the human embryo and fetus with emphasis on teratology. Lec-lab and discussion.

MED 602. MICROSCOPIC ANATOMY (4)
PR: Admission to College of Medicine. A study of the microscopic structure of normal tissues and organs with emphasis on human material. Lec-lab and discussion.

MED 603. NEUROANATOMY (4)
PR: Admission to College of Medicine. A study of the gross and microscopic structure and the functions of the human nervous system. Lec-lab and discussion.

MED 604. ANATOMY SEMINAR (0)
PR: Consent of Chairman, Department of Anatomy. A weekly discussion of anatomical topics of special interest. Lec and discussion.

MED 605. BIOCHEMISTRY (9)
PR: Admission to College of Medicine. A study of the chemistry and metabolism of biologically important compounds. Interrelationship of various metabolic pathways will be discussed with emphasis on the biochemical aspects of human diseases. Lec-lab and discussion.

MED 606. BIOCHEMISTRY SEMINAR (0)
PR: Consent of instructor. Current literature dealing with the biochemical basis of human disease will be discussed. Lec and discussion.

MED 607. MEDICAL MICROBIOLOGY (9)
PR: Admission to College of Medicine. A study of the role of bacteria, viruses,

mycological agents, and parasites as they are related to disease production. Host response to these agents is also an important aspect particularly as related to immune processes. Lec-lab and discussion.

MED 608. MEDICAL MICROBIOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Medical Microbiology. Presentation and discussion of current topics of interest in medical research. Lec and discussion.

MED 609. PHARMACOLOGY (9)
PR: Admission to College of Medicine. Studies of pharmacodynamics of drugs including mechanisms of action, side effects, and toxicities. Lec-lab and discussion.

MED 610. PHARMACOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Pharmacology. Presentation of current research investigations as related to medical problems. Lec and discussion.

MED 611. MEDICAL PHYSIOLOGY (9)
PR: Admission to College of Medicine. A study of the functional aspects of components of the body and its organ systems and their integration into operational units. The physiology of homeostasis and the central nervous system will be included. Lec-lab and discussion.

MED 612. PHYSIOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Physiology. Seminars in which current research areas of interest as related to medicine are discussed. Lec and discussion.

MED 613. HUMAN BIOLOGY (7)
PR: Admission to College of Medicine. An interdisciplinary course emphasizing the relevance of pre-clinical science and the contributions of recent research information to the practice of medicine. Lec and discussion.

MED 614. BIOSTATISTICS (1)
PR: Admission to College of Medicine. Presentation of methods of collection, tabulation, graphic illustration, and analysis of numerical data encountered in medical research areas. Lecture.

MED 615. INTRODUCTION TO PSYCHIATRY (3)
PR: Admission to College of Medicine. Principles of human behavioral science will be presented from the standpoint of the developing organism reacting to its environment. Lec, patient contact, and discussion.

MED 616. PSYCHIATRY SEMINAR (0)
PR: Consent of Chairman, Department of Psychiatry. Current research surveys in Psychiatry. Lec and discussion.

MED 617. PATHOLOGY (18)
PR: Admission to College of Medicine. A correlated study of gross and microscopic material illustrating structural and functional changes in cells, tissues, and organs during disease processes. Lec-lab and discussion.

MED 618. PATHOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Pathology. Presentation and discussion of current topics of medical importance in general area of pathology. Lec and discussion.

MED 619. INTRODUCTION TO MEDICINE (5)
PR: Admission to College of Medicine. A course designed to provide the student with a comprehensive frame of reference for viewing health and disease as an interplay of biological, social and psychological factors. Lec, patient contact, and discussion.

MED 620. LABORATORY MEDICINE (9)
PR: Admission to College of Medicine. Presentation and evaluation of clinical-pathologic correlation between laboratory findings and disease processes. Lec-lab, patient contact, and discussion.

MED 621. PHYSICAL DIAGNOSIS (7)
PR: Admission to College of Medicine. The basic techniques of clinical

evaluation are presented emphasizing history taking and the demonstration of normal and abnormal physical findings. Lec, patient contact, and discussion.

MED 622. BASIC SCIENCE REVIEW (11)
PR: Admission to College of Medicine. An interdisciplinary course in which basic concepts of each science will be reviewed and additional work involving more advanced and sophisticated concepts will be presented. Lec-lab and discussion.

MED 623. TUTORIAL CLERKSHIP (9)
PR: Admission to College of Medicine. The primary objective is to provide for the extension and perfection of work in both physical diagnosis and laboratory medicine. Lec, patient contact, and discussion.

MODERN LANGUAGES

French

Faculty: Artzybushev, Braun, Cherry, DeJongh, Glénisson, de la Ménardière, Wall, Whartenby.

For Functional French course descriptions see page 165.

CBS 111. BEGINNING FRENCH I (5)
CBS 112. BEGINNING FRENCH II (5)
CBS 211. INTERMEDIATE FRENCH I (4)
PR: CBS 112.
CBS 212. INTERMEDIATE FRENCH II (4)
PR: CBS 211.
For course descriptions of above courses refer to Basic Studies section.

FRE 203. BEGINNING CONVERSATION (3)
PR: CBS 113

FRE 301. CONTROLLED COMPOSITION (4)
PR: CBS 212

FRE 303. ADVANCED CONVERSATION (3)
PR: FRE 203. Free conversation based upon the current French idiom.

FRE 305. INTRODUCTION TO FRENCH LITERATURE (4)
PR: CBS 212

FRE 310. FRENCH CLASSICS IN TRANSLATION (4)
PR: None. *Song of Roland,* Voltaire, Hugo, Stendhal, Flaubert and others.

FRE 311. CONTEMPORARY FRENCH LITERATURE IN TRANSLATION (4)
PR: None. Proust, Gide, Montherlant, Sartre, Camus, Anouilh, Beckett and others.

FRE 321. FRENCH FOR NON-LINGUISTS (3)
PR: None. Provides the non-linguist with a limited spoken fluency in French, as well as a mastery of the linguistic structures necessary to pass a reading examination in French.

FRE 401. EXPOSITORY WRITING (4)
PR: FRE 301

FRE 403. PHONETICS AND DICTION (4)
PR: FRE 303.

FRE 405. SURVEY OF FRENCH LITERATURE (4)
PR: FRE 305. Earliest monuments through 18th Century Enlightenment.

FRE 406. SURVEY OF FRENCH LITERATURE (4)
PR: 305. Romanticism to present.

FRE 410. FRENCH CIVILIZATION (4)
PR: FRE 321 Recommended. France's contribution to world culture and civilization, particularly as such molded and molds the twentieth century.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

FRE 501. EARLY RENAISSANCE LITERATURE (4)
PR: FRE 405. Emphasis on Rabelais and his contemporaries.

FRE 502. LATER RENAISSANCE LITERATURE (4)
PR: FRE 405. Emphasis on Montaigne and the Pléiade.
FRE 516. STYLISTICS (4)
PR: FRE 401.
FRE 521. CLASSICAL PROSE AND POETRY (4)
PR: FRE 405. Emphasis on Malherbe, La Fontaine, Boileau, Descartes, and Pascal.
FRE 522. CLASSICAL DRAMA (4)
PR: FRE 405. Corneille, Moilière, and Racine.
FRE 531. THE ENCYCLOPEDISTS (4)
PR: FRE 405. The Classical tradition and the new currents of thought 1715-50.
FRE 532. ROUSSEAU AND PRE-ROMANTICISM (4)
PR: FRE 405.
FRE 541. ROMANTICISM (4)
PR: FRE 406.
FRE 542. 19TH CENTURY REALISM AND PARNASSIANISM (4)
PR: FRE 406.
FRE 543. LATE 19TH CENTURY LITERATURE (4)
PR: FRE 406. Emphasis on Naturalism and Symbolism.
FRE 551. 20TH CENTURY LITERATURE TO 1939 (4)
PR: FRE 406.
FRE 552. 20TH CENTURY LITERATURE 1939-PRESENT (4)
PR: FRE 406.
FRE 583. SELECTED TOPICS 1-4)
PR: Senior or graduate standing. CI.
FRE 585. DIRECTED STUDY (1-4)
PR: Senior or graduate standing. CI.

FOR GRADUATE STUDENTS ONLY

FRE 601. OLD FRENCH (4)
PR: FRE 403. NOTE: Required of all M.A. Candidates.
FRE 612. MONTAIGNE (4)
PR: Graduate standing
FRE 622. SEMINAR ON CLASSICAL DRAMA (4)
PR: Graduate standing. A study of the works of Corneille and Racine or the works of Molière.
FRE 689. BIBLIOGRAPHY (2)
PR: Graduate standing. Research methods. Includes familiarity with major journals and bibliographies, and a practicum.
NOTE: Required of all M.A. Candidates.
FRE 691. GRADUATE SEMINAR (4)

German

Faculty: DeVinney, Grothmann, Jochimek, Nagosky, Price, Stelzmann

For Functional German course descriptions see Basic Studies section

CBS 114. BEGINNING GERMAN I (5)
CBS 115. BEGINNING GERMAN II (5)
CBS 214. INTERMEDIATE GERMAN I (4)
PR: CBS 116
CBS 215. INTERMEDIATE GERMAN II (4)
PR: CBS 214
For course descriptions of above courses refer to Basic Studies section.
GER 203. BEGINNING CONVERSATION (3)
PR: CBS 115.
GER 301. CONTROLLED COMPOSITION (4)
PR: CBS 215

GER 303. ADVANCED CONVERSATION (3)
PR: GER 203. Free conversation based upon the current German idiom.
GER 305. INTRODUCTION TO GERMAN LITERATURE (4)
PR: CBS 215.
GER 310. GERMAN CLASSICS IN TRANSLATION (4)
PR: None. Goethe, Schiller, Kant, Schopenhauer, Büchner, Novalis and others.
GER 311. CONTEMPORARY GERMAN LITERATURE IN TRANSLATION (4)
PR: None. Mann, Hesse, Kafka, Grass, Boll, Brecht, Weiss and others.
GER 321. GERMAN FOR NON-LINGUISTS (3)
PR: None. Provides the non-linguist with a limited spoken fluency in German, as well as a mastery of the linguistic structures necessary to pass a reading examination in German.
GER 401. EXPOSITORY WRITING (4)
PR: GER 301
GER 405. SURVEY OF GERMAN LITERATURE (4)
PR: GER 305. Earliest monuments to Classicism.
GER 406. SURVEY OF GERMAN LITERATURE (4)
PR: GER 305. Romanticism to the present.
GER 410. GERMAN CIVILIZATION (4)
PR: GER 321 recommended. Germany's contribution to world culture and civilization, particularly as such molded and molds the twentieth century.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

GER 513. HISTORY OF THE GERMAN LANGUAGE (4)
PR: GER 401.
GER 516. STYLISTICS (4)
PR: GER 401.
GER 521. FAUST I (4)
PR: GER 405.
GER 531. GOETHE (4)
PR: GER 405.
GER 532. SCHILLER (4)
PR: GER 405.
GER 535. THE ENLIGHTENMENT (4)
PR: GER 405.
GER 543. ROMANTICISM (4)
PR: GER 406.
GER 544. REALISM (4)
PR: GER 406.
GER 552. 20TH CENTURY LITERATURE TO 1945 (4)
PR: GER 406.
GER 553. 20TH CENTURY LITERATURE 1945-PRESENT (4)
PR: GER 406.
GER 583. SELECTED TOPICS (1-4)
PR: Senior or graduate standing. CI.
GER 585. DIRECTED STUDY (1-4)
PR: Senior or graduate standing. CI.

FOR GRADUATE STUDENTS ONLY

GER 601. MIDDLE HIGH GERMAN (4)
PR: GER 513
GER 631. FAUST II (4)
PR: GER 521
GER 691. GRADUATE SEMINAR (4)

Italian

Faculty: Artzybushev, Fiore, Ierardo, Milani
For functional Italian course descriptions see Basic Studies section

CBS 123. BEGINNING ITALIAN I (5)
CBS 124. BEGINNING ITALIAN II (5)
CBS 223. INTERMEDIATE ITALIAN I (4)
PR: CBS 124.
CBS 224. INTERMEDIATE ITALIAN II (4)
PR: CBS 223
For course descriptions of above courses refer to Basic Studies section.

ITA 203. BEGINNING CONVERSATION (3)
PR: CBS 124
ITA 301. CONTROLLED COMPOSITION (4)
PR: CBS 224
ITA 303. ADVANCED CONVERSATION (3)
PR: ITA 203. Free conversation based upon the current Italian idiom.
ITA 305. INTRODUCTION TO ITALIAN LITERATURE (4)
PR: CBS 224
ITA 310. ITALIAN CLASSICS IN TRANSLATION (4)
PR: None. Dante, Petrarcha, Manzoni, Carducci, Poliziano, Castiglione and others.
ITA 311. CONTEMPORARY ITALIAN LITERATURE IN TRANSLATION (4)
PR: None. Fogazzaro, Vittorini, Silone, Pavese, Lampedusa, Levi, Quasimodo, Ungaretti, Pirandello, Moravia and others.
ITA 321. ITALIAN FOR NON-LINGUISTS (3)
PR: None. Provides the non-linguist with a limited spoken fluency in Italian, as well as a mastery of the linguistic structures necessary to pass a reading examination in Italian.
ITA 401. EXPOSITORY WRITING (4)
PR: ITA 301.
ITA 405. SURVEY OF ITALIAN LITERATURE (4)
PR: ITA 305. Earliest monuments to 18th century Classicism.
ITA 406. SURVEY OF ITALIAN LITERATURE (4)
PR: ITA 305. Romanticism to present.
ITA 410. ITALIAN CIVILIZATION (4)
PR: ITA 321 recommended. Italy's contribution to world culture and civilization, particularly as such molded and molds the twentieth century.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ITA 512. DIVINE COMEDY I (4)
PR: ITA 405
ITA 513. DIVINE COMEDY II (4)
PR: ITA 405
ITA 541. ROMANTICISM (4)
PR: ITA 406
ITA 542. REALISM (4)
PR: ITA 406
ITA 551. 20TH CENTURY LITERATURE TO 1939 (4)
PR: ITA 406
ITA 552. 20TH CENTURY LITERATURE 1939-PRESENT (4)
PR: ITA 406
ITA 583. SELECTED TOPICS (1-4)
PR: Senior or graduate standing. CI.
ITA 585. DIRECTED STUDY (1-4)
PR: Senior or graduate standing. CI.

Portuguese

Faculty: Capsas, chairman; Lopes, Tatum.

POR 313. BRAZILIAN LITERATURE IN TRANSLATION (4)
PR: None. Machado de Assis, Graça Aranha, Da Cunha, Monteiro Lobato,

Lins do Rêgo, Ramos, Amado, Guimarães Rosa and others.

POR 326. BEGINNING ACCELERATED PORTUGUESE (4)
PR: Two years of another Romance Language or Latin.

POR 327. INTERMEDIATE ACCELERATED PORTUGUESE (4)
PR: POR 326.

POR 401. EXPOSITORY WRITING (4)
PR: POR 327.

POR 405. SURVEY OF PORTUGUESE LITERATURE (4)
PR: POR 327.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

POR 585. DIRECTED STUDY (1-4)
PR: POR 405. CI.

Romance

Faculty: DeJongh, Milani, Neugaard

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ROM 517. ROMANCE PHILOLOGY (4)
PR: Senior or graduate standing.

ROM 518. MEDIEVAL AND EARLY ROMANCE LITERATURE (4)
PR: ROM 517.

Russian

Faculty: Jochimek, Sokolsky

CBS 117. BEGINNING RUSSIAN I (5)

CBS 118. BEGINNING RUSSIAN II (5)

CBS 217. INTERMEDIATE RUSSIAN I (4)
PR: CBS 118.

CBS 218. INTERMEDIATE RUSSIAN II (4)
PR: CBS 217

For course descriptions on above, refer to Basic Studies section.

RUS 203. BEGINNING CONVERSATION (3)
PR: CBS 118

RUS 301. CONTROLLED COMPOSITION (4)
PR: CBS 218.

RUS 303. ADVANCED CONVERSATION (3)
PR: RUS 203. Free conversation based upon the current Russian idiom.

RUS 305. INTRODUCTION TO RUSSIAN LITERATURE (4)
PR: CBS 218.

RUS 310. RUSSIAN CLASSICS IN TRANSLATION (4)
PR: None. Pushkin, Turgenev, Tolstoy, Dostoyevsky, and others.

RUS 311. SOVIET LITERATURE IN TRANSLATION (4)
PR: None. Gorky, Chekhov, Pasternak, Solzhenitsyn, and others.

RUS 321. RUSSIAN FOR NON-LINGUISTS (3)
PR: None. Provides the non-linguist with a limited spoken fluency in Russian, as well as a mastery of the linguistic structures necessary to pass a reading examination in Russian.

RUS 401. EXPOSITORY WRITING (4)
PR: RUS 301.

RUS 405. SURVEY OF RUSSIAN LITERATURE (4)
PR: RUS 305. Earliest monuments to Classicism.

RUS 406. SURVEY OF RUSSIAN LITERATURE (4)
PR: RUS 305. Romanticism to present.

RUS 410. SLAVIC CIVILIZATION (4)
PR: RUS 321 recommended. Slavic contribution to world culture and civilization, particularly as such molded and molds the twentieth century.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

RUS 515. HISTORY OF THE RUSSIAN LANGUAGE I (4)
PR: RUS 401.
RUS 516. HISTORY OF THE RUSSIAN LANGUAGE II (4)
PR: RUS 515.
RUS 541. 19TH CENTURY DRAMA (4)
PR: RUS 405.
RUS 552. TOLSTOY (4)
PR: RUS 405.
RUS 553. DOSTOYEVSKY (4)
PR: RUS 405.
RUS 561. CHEKHOV AND GORKY (4)
PR: RUS 406.
RUS 563. SOVIET LITERATURE (4)
PR: RUS 406.
RUS 583. SELECTED TOPICS (1-4)
PR: Senior or graduate standing. CI
RUS 585. DIRECTED STUDY (1-4)
PR: Senior or graduate standing. CI.

Spanish

Faculty: Cano, Capsas, Hampton, Lopes, Hunter, McLean, Neugaard, Seminario, Sparks, Tatum.

CBS 120. BEGINNING SPANISH I (5)
CBS 121. BEGINNING SPANISH II (5)
CBS 220. INTERMEDIATE SPANISH I (4)
PR: CBS 121.
CBS 221. INTERMEDIATE SPANISH II (4)
PR: CBS 220.
For course descriptions of above courses refer to Basic Studies section.
SPA 203. BEGINNING CONVERSATION (3)
PR: CBS 121.
SPA 301. CONTROLLED COMPOSITION (4)
PR: CBS 221.
SPA 303. ADVANCED CONVERSATION (3)
PR: SPA 203. Free conversation based upon the current Spanish idiom.
SPA 305. INTRODUCTION TO HISPANIC LITERATURE (4)
PR: CBS 221.
SPA 310. SPANISH CLASSICS IN TRANSLATION (4)
PR: None. *The Cid, The Celestina,* Lope de Vega, Cervantes, Quevedo, Pérez Galdós, and others.
SPA 311. CONTEMPORARY SPANISH LITERATURE IN TRANSLATION (4)
PR: None. Pío Baroja, Azorín, Unamuno, Valle-Inclán, Sender, Jiménez, Cela and others.
SPA 313. SPANISH AMERICAN LITERATURE IN TRANSLATION (4)
PR: None. Darío, Mistral, Güiraldes, Azuela, Borges, Asturias, Carpentier and others.
SPA 321. SPANISH FOR NON-LINGUISTS (3)
PR: None. Provides the non-linguist with a limited spoken fluency in Spanish as well as a mastery of the linguistic structures necessary to pass a reading examination in Spanish.
SPA 401. EXPOSITORY WRITING (4)
PR: SPA 301.

SPA 403. PHONETICS AND PHONOLOGY (4)
PR: SPA 303.
SPA 405. SURVEY OF SPANISH LITERATURE (4)
PR: SPA 305. Earliest monuments to 18th Century Neo-Classicism.
SPA 406. SURVEY OF SPANISH LITERATURE (4)
PR: SPA 305. Romanticism to the present.
SPA 410. HISPANIC CIVILIZATION (4)
PR: SPA 321 recommended. Spain's contribution to world culture and civilization, particularly as such molded and molds the twentieth century.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

SPA 516. STYLISTICS (4)
PR: SPA 401.
SPA 524. GOLDEN AGE DRAMA (4)
PR: SPA 405. Lope de Vega, Alarcón, Tirso, Calderón and others.
SPA 525. GOLDEN AGE NON-DRAMATIC LITERATURE (4)
PR: SPA 405. Emphasis on lyric poetry and the mystics.
SPA 526. THE QUIXOTE (4)
PR: SPA 405.
SPA 540. ROMANTICISM (4)
PR: SPA 406.
SPA 542. 19TH CENTURY REALISM (4)
PR: SPA 406.
SPA 546. THE GENERATION OF 1898 (4)
PR: SPA 406.
SPA 552. 20TH CENTURY LITERATURE 1936-PRESENT (4)
PR: SPA 406.
SPA 561. SURVEY OF SPANISH AMERICAN LITERATURE I (4)
PR: SPA 406.
SPA 562. SURVEY OF SPANISH AMERICAN LITERATURE II (4)
PR: SPA 406.
SPA 570. MEXICAN LITERATURE (4)
PR: SPA 561, 562.
SPA 575. RIVER PLATE LITERATURE (4)
PR: SPA 561, 562.
SPA 583. SELECTED TOPICS (1-4)
PR: Senior or graduate standing. CI.
SPA 585. DIRECTED STUDY (1-4)
PR: Senior or graduate standing. CI.

FOR GRADUATE STUDENTS ONLY

SPA 601. OLD SPANISH (4)
PR: SPA 403. Note: Required ot all M.A. candidates.
SPA 624. SEMINAR ON GOLDEN AGE DRAMA (4)
PR: SPA 524.
SPA 625. THE PICARESQUE NOVEL (4)
PR: SPA 525.
SPA 689. BIBLIOGRAPHY (2)
PR: Graduate standing. Research methods. Includes familiarity with major journals and bibliographies, and a practicum.
NOTE: Required of all M.A. Candidates.
SPA 691. GRADUATE SEMINAR (4)

MUSIC ARTS

Faculty: Sperry, chairman; J. Abram, E.S. Anderson, Apple, Bridges, N.R. Cooke, Dickey, Enix, Eubank, Fearn, Gee, L.A. Golding, A.L. Hawkins, Henning, Jen-

nings, G. A. Johnson, H. K. Jones, Kneeburg, Lockwood, McCray, J.P. Nagosky, W.D. Owen, Preodor, Prescott, Rearick, J.M. Reynolds, Roach, Stenberg, Stevens, Turney, Watkins, Wolf, Woodhams, Wrancher.

MUS 101. RUDIMENTS OF MUSIC (3)
Preparatory course for music majors who do not qualify for MUS 201; development of skills in hearing and performing music and in basic notation.

MUS 201-202-203. MUSICAL STYLES (3,3,3)
Required of music majors; aural and visual analysis of musical styles from Antiquity to 1600; stylistic composition for voices; counterpoint; form; development of related skills in music reading and keyboard facility.

MUS 204. PERFORMANCE (2)
Required of music majors; performance instruction in string, woodwind, brass, and percussion instruments, composition, voice, and piano; private and class lessons coordinated with laboratory experience in one assigned performing organization; or, for composition majors, secondary instrument instruction; may be repeated for credit.

Sec 001 Violin	Sec 006 Oboe	Sec 011 Trombone/Baritone
002 Viola	007 Clarinet/Saxophone	012 Tuba
003 Violoncello	008 Bassoon	013 Percussion
004 String Bass	009 French Horn	014 Composition
005 Flute	010 Trumpet	015-019 Voice
		020-030 Piano

MUS 301-302-303. MUSICAL STYLES (3,3,3)
PR: MUS 203. Required of music majors; continuation of MUS 201-203; musical styles from 1600 to 1827; harmony; instrumentation; form; stylistic composition for various media; continued development of related skills.

MUS 304. PERFORMANCE (3)
PR: Necessary competency at MUS 204 level determined by faculty jury. Required of music majors; performance instruction in string, woodwind, brass, and percussion instruments, composition, voice, and piano; private and class lessons coordinated with laboratory experience in one assigned major performing organization and one chamber music ensemble. Composition majors may be advised to take instruction on a secondary instrument instead of either or both ensembles. May be repeated for credit.

Sec 001 Violin	Sec 006 Oboe	011 Trombone/Baritone
002 Viola	007 Clarinet/Saxophone	012 Tuba
003 Violoncello	008 Bassoon	013 Percussion
004 String Bass	009 French Horn	014 Composition
005 Flute	010 Trumpet	015-019 Voice
		020-024 Piano

MUS 371. ISSUES IN MUSIC (2)
Open only to non-music majors; lectures and live performances by artist faculty of significant works from the literature for the piano; analysis and illustration in performance of the abstract and aesthetic elements in music which vitally concern the artist-performer; credit awarded on pass-fail basis.

MUS 372-373. THE ENJOYMENT OF MUSIC (3,3)
Open only to non-music majors; a study of the art of music and its materials,designed to develop an understanding of basic principles of music and a technique for listening to music; Section 001 of MUS 372 is for students who are majoring in dance, theatre arts, and visual arts.

MUS 374. MAJOR PERFORMING ORGANIZATIONS (1)
Open only to non-music majors with the necessary proficiency in their performance media; study and performance of music for large combinations of string, wood-

winds, brass, or percussion instruments, and voices; may be repeated for credit; credit awarded on pass-fail basis.

Sec 001 Concert Band I
002 Concert Band II
003 Reading Band
004 University Choir
005 Reading Chorus
Sec 006 University-Community Chorus
007 Opera Workshop
008 Symphony Orchestra
009 Reading Orchestra

MUS 375. CHAMBER MUSIC ENSEMBLES (1)

Open only to non-music majors with the necessary proficiency in their performance media; study and performance of music for small combinations of string, woodwind, brass, or percussion instruments, voice, and piano; may be repeated for credit; credit awarded on pass-fail basis.

Sec 001 Chamber Singers
002 Jazz Laboratory Band
003 Brass Choir
004 Brass Quintet
005 Woodwind Quintet
006 Piano Ensemble
007 String Quartet
Sec 008 French Horn Quartet
009 Clarinet Choir
010 Percussion Ensemble
011 Marimba Ensemble
012 Flute Choir
013 New Music Ensemble

MUS 401-402-403. MUSICAL STYLES (2,2,2)

PR: MUS 303. Required of music majors; continuation of MUS 201-303; musical styles from 1828 to the present.

MUS 404. PERFORMANCE (3)

PR: Necessary competency at MUS 304 level determined by faculty jury. Required of music majors; continued performance instruction in string, woodwind, brass, and percussion instruments, composition, voice, and piano; private and class lessons coordinated with laboratory experience in one assigned major performing organization and one chamber music ensemble. Composition majors may be advised to take instruction on a secondary instrument instead of either or both ensembles. May be repeated for credit.

Sec 001 Violin
002 Viola
003 Violoncello
004 String Bass
005 Flute
Sec 006 Oboe
007 Clarinet/Saxophone
008 Bassoon
009 French Horn
010 Trumpet
Sec 011 Trombone/Baritone
012 Tuba
013 Percussion
014 Composition
015-019 Voice
020-024 Piano

MUS 481. DIRECTED STUDY (1-6)

PR: CC. Independent studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

MUS 501-502-503. MUSICAL STYLES (3,3,3)

PR: CI. Advanced problems in analysis of music of various styles; emphasis on Medieval, Romantic, and Contemporary music.

MUS 504. PERFORMANCE (3)

PR: Necessary competency at MUS 404 level determined by faculty jury. Required of music majors; continued performance instruction in string, woodwind, brass, and percussion instruments, composition, voice, and piano; private and class lessons coordinated with laboratory experience in one assigned major performing organization and one chamber music ensemble; composition majors may be advised to take instruction on a secondary instrument instead of either or both ensembles. May be repeated for credit.

Sec 001 Violin
002 Viola
003 Violoncello
004 String Bass
005 Flute
Sec 006 Oboe
007 Clarient/Saxophone
008 Bassoon
009 French Horn
010 Trumpet
Sec 011 Trombone/Baritone
012 Tuba
013 Percussion
014 Composition
015-019 Voice
020-024 Piano

MUS 505. STUDIO TEACHING (3)
PR: CI. Required of undergraduate music arts majors; emphasis on the business management of the music studio, the musical responsiblities of the studio teacher, the techniques of private instruction.

MUS 506. ELECTRONIC MUSIC SEMINAR (3)
PR: CI. Emphasis on the proper use of electronic instruments, construction of simpler instruments, study of the literature and music of the field.

MUS 507-508. ORCHESTRATION (3,3)
PR: CI. Intensive study and practice in scoring music for various combinations of instruments including symphony orchestra, band, and smaller ensembles of string, woodwind, brass, and percussion instruments.

MUS 561. MASTER CLASSES (2)
PR: CI. Study and performance of selected literature with special emphasis on style, form, and technique; especially designed for teachers, piano majors, and talented secondary school students.

Sec 001 Piano
Sec 002 Voice

MUS 562. MUSIC WORKSHOPS (2)
PR: CI. Intensive study in the specialized areas indicated below; open to teachers, University students, and secondary students; credit available to qualified students.

Sec 001 Band
002 Chamber Music
003 Chorus
Sec 004 Comprehensive Musicianship
005 Orchestra
006 String

MUS 581. DIRECTED STUDY (1-6)
PR: CC. Independent studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

FOR GRADUATE STUDENTS ONLY

MUS 601-602-603. EVOLUTION OF MUSICAL STYLES (3,3,3)
Required of music theory majors; study of the development of musical styles in Western civilization from Antiquity to the present; includes analysis and performance of representative works.

MUS 605. STUDIO TEACHING SEMINAR (3)
PR: Graduate standing in performance and CI; emphasis on techniques used in in teaching the individual student in performance.

MUS 606-607-608. TEACHING OF MUSIC THEORY (4,4,4)
Comparative study of teaching techniques, procedures, and materials used in music theory curricula.

MUS 611-612. ACOUSTICS (4,4)
Required of music theory majors; study of the nature and transmission of sound, the hearing process, tuning, and temperament; includes principles of electronic sound reproducers and basic concepts of architectural acoustics.

MUS 621. SYMPHONIC LITERATURE (5)
A chronological study of the development of orchestral music; analysis and study of major works from a stylistic and biographical perspective.

MUS 622. MASTERWORKS OF CHORAL LITERATURE (5)
A chronological study of the development of choral music; analysis and study of major works from a stylistic and biographical perspective.

MUS 623. TWENTIETH CENTURY MUSIC (5)
PR: CI. A study of the compositional techniques of composers from Debussy to the present; emphasis on counterpoint, harmonic structure, tonality, atonality, polytonality, texture, and serial technique.

MUS 624-625-626. KEYBOARD LITERATURE (3,3,3)
A chronological study of the development of music for the keyboard instruments; analysis and study of major works from a stylistic and biographical perspective.

MUS 627-628-629. SONG LITERATURE (3,3,3)
Solo song literature from the 17th century through the contemporary with emphasis on German lieder, oratorio, and opera; special emphasis on performance.

MUS 631-632. OPERA LITERATURE (4,4)
A chronological study of the development of opera from 1600 to the present; emphasis on the technical, stylistic, and performance aspects of opera.

MUS 633-634-635. CHORAL LITERATURE AND CONDUCTING (6,6,6)
Combination of seminar, classroom, and laboratory types of experiences designed to provide depth in stylistic study of choral music literature and performance.

MUS 636-637. INSTRUMENTAL CONDUCTING (3,3)
PR: CI. Intensive study of instrumental conducting techniques with emphasis on interpretation of musical scores and application in laboratory sessions.

MUS 641. ENSEMBLE (1)
PR: CI. Study and performance of music for various combinations of string, woodwind, brass, and percussion instruments, voice, and piano; may be repeated four times for credit.

GRADUATE PERFORMANCE INSTRUCTION

Courses preceded by an asterisk(*)

In order to enroll at this level for four credits, performance majors must qualify by audition. Candidates for the master of arts degree may be permitted to enroll for two credits at a lower level of proficiency in order to study performance techniques on their major instrument or one of secondary importance.

MUS 642. *STRING INSTRUMENTS (2,4)
PR: CC. Sec 002, 004, Violin; Sec 102, 104, Viola; Sec 202, 204 Violoncello; Sec 302, 304 Bass.

MUS 643. *WOODWIND INSTRUMENTS (2,4)
PR: CC. Sec 002, 004 Flute; Sec 102, 104 Oboe; Sec 202, 204 Clarinet / Saxophone; Sec 302, 304 Bassoon.

MUS 644. *BRASS INSTRUMENTS (2,4)
PR: CC. Sec 002, 004 Trumpet; Sec 102, 104 French Horn; Sec 202, 204 Low Brass.

MUS 645. *PERCUSSION INSTRUMENTS (2,4)
PR: CC.

MUS 646. *COMPOSITION (4)
PR: CC. Original composition in varied forms; emphasis on analysis and application of contemporary techniques and styles; may be repeated to a maximum of twelve credits.

MUS 647. *VOICE (2,4)
PR: CC.

MUS 648. *PIANO (2,4)
PR: CC.

MUS 681. DIRECTED STUDY (1-9)
PR: CC. Independent graduate studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

MUS 691. GRADUATE SEMINAR (2)
PR: CC. May be repeated to a maximum of six credits.

MUS 698. GRADUATE RECITAL (3)
PR: CC.

MUS 699. GRADUATE THESIS (3)
PR: CC. May be repeated to a maximum of nine credits.

OCEANOGRAPHY

See MARINE SCIENCE

OFF-CAMPUS TERM

Faculty: Lupton, coordinator; and staff.

OCT 401. COMMUNITY INTERACTION (5)
A field course for students in the OCT Program utilizing the community as a learning laboratory to develop sensitivity to the problems of our society.

OCT 410. OFF CAMPUS TERM SOCIAL ACTION PROJECT (1 or 2)
OCT 411. OFF CAMPUS TERM INDEPENDENT STUDY (1 or 2)
OCT 412. OFF CAMPUS TERM INTERNATIONAL PROGRAM (1 or 2)
OCT 413. OFF CAMPUS TERM WORK EXPERIENCE (1 or 2)
OCT 414. OFF CAMPUS TERM SPECIAL PROJECT (1 or 2)
The above courses are provided for students admitted in the Off-Campus Term Program to work on one of the types of projects indicated above.

PHILOSOPHY

Faculty: Gould, chairman; Carpenter, Carrier, Chen, Krimsky, Taylor, Truitt.

PHI 111. GREAT PHILOSOPHERS OF THE WESTERN WORLD (2)
Lectures and discussion of the great philosophers since Plato, focusing on particular problems.

PHI 301. BASIC PHILOSOPHY I: GOD AND REALITY (4)
An introduction to the major philosophical problems in religion, metaphysics, and the philosophy of mind.

PHI 303. LOGIC (5)
Language analysis and classical and modern formal logic, including the logic of classes and propositions, and discussion of philosophical issues.

PHI 304. SCIENTIFIC METHOD (4)
Probability, inductive inference, the hypothetico-deductive method, experimentation, and selected topics in the philosophy of science.

PHI 311. BASIC PHILOSOPHY II: VALUE AND SOCIETY (4)
PR: none. An introduction to the major philosophical problems in ethics, aesthetics, and social political philosophy.

PHI 317. BASIC PHILOSOPHY III: KNOWLEDGE AND SCIENCE (4)
PR: none. An introduction to the major philosophical problems in methodology, epistemology, and the philosophy of science.

PHI 321. ETHICS (4)
An examination of the writing of the philosophers: Plato, Aristotle, Kant, Sartre, etc. about moral problems and principles.

PHI 333. ANCIENT AND MEDIEVAL PHILOSOPHY (4)
A survey of philosophy from Thales through the medieval writers.

PHI 334. RENAISSANCE AND MODERN PHILOSOPHY (4)
A survey of philosophy from the Renaissance through Kant.

PHI 335. RECENT PHILOSOPHY (4)
A survey of philosophy from Kant through 19th century philosophy.

PHI 377. SOCIAL PHILOSOPHY (4)
An analysis of rival theories of social order and their philosophical foundations.

PHI 381. DIRECTED STUDY (1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 383. SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 405. CONTEMPORARY PHILOSOPHY (4)
PR: 12 hours or CI. Selected schools of 20th century thought such as idealism, positivism, pragmatism, realism, and existentialism.

PHI 406. ANALYTICAL PHILOSOPHY (4)
PR: 12 hours, PHI 303. A study of the method devoted to clarifying philosophical problems through analysis of the language in which these problems are stated.

PHI 407. EXISTENTIALISM (4)
PR: 12 hours or CI. A study of the religious and atheistic existentialists and the bearing of their views on religion, ethics, metaphysics, and theory of knowledge.

PHI 408. CURRENT PHILOSOPHICAL MATERIALISM (4)
PR: CI. A critical study of historical, dialectical, and scientific materialism and its importance in physical science, social science, theory of history, theory of knowledge, and metaphysics.

PHI 411. PHILOSOPHY OF RELIGION (4)
Analysis of religious experience and activity and examination of principal religious ideas in light of modern philosophy.

PHI 413. AMERICAN PHILOSOPHY (4)
Major traditions in American thought—Puritanism, the Enlightenment, Transcendentalism, Idealism, Pragmatism, and Analytic Philosophy—in relation to American culture.

PHI 415. PLATO AND ARISTOTLE (4)
PR: 8 hours or CI. A study of the two great Greek philosophers. The examination of Plato will include the dialogues Protagoras, Gorgias, Meno, Republic; while the readings in Aristotle will be taken from the Nicomachean Ethics and the Politics.

PHI 425. KANT (4)
PR: 8 hours or CI. Lectures and discussions of Kant's philosophy, especially The Critique of Pure Reason.

PHI 453. EPISTEMOLOGY (4)
PR: 8 hours, PHI 301, or CI. An examination of human knowledge, its scope and limits, and an evaluation of evidence, criteria of truth, the nature of belief, conditions for meaningfulness, theories of perception and a study of memory and sense perception in the four major fields of nature, history, personal experience and the *a priori.*

PHI 461. ANCIENT AND MEDIEVAL POLITICAL PHILOSOPHY (3)
A survey of political philosophy from 6 B.C. until 1600 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 463. MODERN POLITICAL PHILOSOPHY (3)
A survey of political philosophy from 1600 A.D. until 1900 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 465. CONTEMPORARY POLITICAL PHILOSOPHY (3)
A survey of political philosophy in the 20th century, including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 481. DIRECTED STUDY (1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 483. SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the senior students. Approval slip from instructor required.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

PHI 507. PHILOSOPHY OF SCIENCE (4)
PR: 8 hours or CI. The nature and functions of science; the logic of scientific method; clarification of such concepts as cause, law, theory, probability, determinism, simplicity, technology.

PHI 509. SYMBOLIC LOGIC (4)
PR: PHI 303 or CI. Mathematical treatment of formal logic, including methods of proof, quantification, the logic of relations, and an introduction to properties of deductive systems.

PHI 511. PHILOSOPHY OF LAW (4)
PR: 8 hours or CI. A survey of contemporary philosophical problems in religion such as demythologizing, falsification, and the meaning and justification of key concepts and institutions.

PHI 521. CONTEMPORARY CONTROVERSIES IN PHILOSOPHY OF RELIGION (4)
PR: PHI 411 or CI. The nature and function of law, relations between law, morality and metaphysics, logic of legal reasoning, analysis of fundamental concepts, e.g. God, immortality, faith, etc.

PHI 522. AESTHETICS (4)
Consideration of the traditional problems of aesthetics from more contemporary perspectives including structural analysis, problems in historical analysis, the sociology of art and the psychology of art.
Students are urged to also take FNA 543 Comparative Arts/Issues in Creativity as an elective. The combination of these two courses is a desirable approach to knowledge.

PHI 531. PHILOSOPHY OF LANGUAGE (4)
PR: 8 hours of philosophy, major in linguistics or CI. An examination of semantical, syntactical and functional theories of language with special attention given to the problems of meaning, linguistic reference, syntactical form and the relation between scientific languages and ordinary linguistic usage.

PHI 543. PHILOSOPHY OF HISTORY (4)
PR: 8 hours of philosophy, major in history or CI. A systematic study of historical theories and of the methods of historical explanation. An examination of classical theories from Vico through Herder, Hegel, Marx down to Spengler and Toynbee, etc.

PHI 571. SEMINAR IN EPISTEMOLOGY I (3)
PR: Major in philosophy or psychology and CI.

PHI 572. SEMINAR IN EPISTEMOLOGY II (3)
PR: Major in philosophy, or social science and CI.

PHI 573. SEMINAR IN METAPHYSICS I (3)
PR: Major in philosophy or CI. A consideration of the theory of reality.

PHI 574. SEMINAR IN METAPHYSICS II (3)
PR: Major in philosophy or CI. Cosmology.

PHI 575. SEMINAR IN CONTEMPORARY ETHICS (3)
PR: CI. A study of the central figures and doctrines in Contemporary Ethics.

PHI 581. DIRECTED STUDY (1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 583. SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 585. RESEARCH (1-5)
PR: CI. Individual research supervised by a faculty member. Approval slip from instructor required.

PHI 591. SEMINAR IN THE HISTORY OF PHILOSOPHY (3)
PR: CI. A study of one or more of the central figures or movements in the History of Philosophy.

PHYSICAL EDUCATION - Basic

Faculty: W. Berner, R. Bowers, K.N. Butler, M. J. Cheatham, R. Grindey, R. Heeschen, G. Hertz, D. Holcomb, A. Honker, A. Jonaitis, P. Ortwein, S. Prather, R. Shiver, S. Taylor, I. Trice, D. Williams, H. Wright, J. Young.

Abbreviations: (C) coeducational; (M) men; (W) women.

PEB 101-102. FUNCTIONAL PHYSICAL EDUCATION (1,1)
The first two required courses combine lecture and laboratory experiences which present the need and case for regular physical acitivity. Each course counts one (1) credit hour and is included in the student's GPR.

PEB 111-254. ACTIVITY COURSES. (1 each course)
For those pursuing the Physical Education requirement; PEB 230 is a required

course and can be satisified by course work or credit by examination. The fourth required course is elective.
Courses taken past or outside the requirement are encouraged and count as elective hours.
Each course carries one (1) hour credit, is graded S or U and does not affect the GPR.

111 SOFTBALL AND VOLLEYBALL (M) (W)
131 WATER SAFETY INSTRUCTION (C)
133 CANOEING AND SAILING (C)
151 ARCHERY (C)
153 BADMINTON (C)
161 FOLK AND SQUARE DANCE (C)
163 SOCIAL DANCE (C)
171 FENCING (C)
173 GOLF (C)
175 GYMNASTICS (C)
179 TENNIS (C)
200 SPECIAL CONDITIONING (M) (W)
210 BASKETBALL AND VOLLYEBALL (M) (W)
212 FIELD HOCKEY AND TRACK & FIELD (W)
214 SOCCER AND SPEEDBALL (M) (W)
230 BEGINNING SWIMMING (C)
232 INTERMEDIATE SWIMMING (C)
234 ADVANCED SWIMMING (C)
236 LIFE SAVING (C)
238 SCUBA DIVING (C)
240 SYNCHRONIZED SWIMMING (C)
250 HANDBALL AND PADDLEBALL (C)
252 WEIGHT TRAINING (M) (W)
254 WRESTLING (M)

PHYSICS

Faculty: Oleson, chairman; Aubel, Bloch, Brooker, Clapp, Deans, Flynn, Forman, Jones, Kendall, R. Mitchell, Turbeville.

PHY 201-202. GENERAL PHYSICS (4:1)
First quarter of general physics (mechanics) and lab for science students. Must be taken concurrently.

PHY 203-204. GENERAL PHYSICS (4:1)
PR: PHY 201-202. Second quarter of general physics (heat, electricity) and lab for science students. Must be taken concurrently.

PHY 205-206. GENERAL PHYSICS (4:1)
PR: PHY 201-202. Third quarter of general physics (wave motion, optics, atomic and nuclear physics) and lab for science students. Must be taken concurrently.

PHY 301-302. GENERAL PHYSICS AND LABORATORY (3:1)
PR: MTH 302. First quarter of general physics and lab for physics majors and engineering majors. (Must be taken concurrently.) Vectors, kinematics, Newton's laws, energy, momentum and rigid body motion.

PHY 303-304. GENERAL PHYSICS AND LABORATORY (3:1)
PR: PHY 301-302; CR: MTH 303. Second quarter of general physics and laboratory for physics majors and engineering students. Must be taken concurrently. Wave motion, sound, heat, thermodynamics, geometrical and physical optics.

PHY 305-306. GENERAL PHYSICS AND LABORATORY (3:1)
PR: PHY 301-302; CR: MTH 303. Third quarter of general physics for physics majors and engineering students. Must be taken concurrently. Coulomb's law, electric fields, Gauss' law, magnetic fields, Faraday's law, A. C. circuits.

PHY 307. MECHANICS I (3)
CR: MTH 305 and either PR: PHY 225 or CR: PHY 315. First quarter of 3 quarter sequence. Review of vector alegbra and vector calculus. Single particle dynamics, rotating coordinate systems, planetary motion, linear and nonlinear oscillators.

PHY 309. ELECTRICITY AND MAGNETISM I (4)
PR: MTH 305. Electromagnetic circuits; resistance, capacitance, inductance, direct- and alternating-current circuits, thermoelectricity and instrumentation. Laboratory. First quarter of sequence PHY 309-409-509.

PHY 315. MATHEMATICAL ANALYSIS OF PROBLEMS IN MECHANICS AND ELECTRICITY (3)
PR: One year of non-calculus general physics. CR: MTH 305. Designed for students who have not had the general physics sequence using calculus. Review of mechanics and electricity emphasizing problems which involve the use of calculus.

PHY 323. MODERN PHYSICS (4)
PR: PHY 305 or CR: PHY 315. CR: MTH 305. Special theory of relativity. Interaction and duality of particles and radiation. Atomic and x-ray spectra and vector model of atom. Exclusion principle and introduction to quantum theory. Introduction to nuclear physics.

PHY 331. OPTICS (4)
PR: PHY 305 or PHY 315. CR: MTH 304. Reflection, refraction, dispersion, interference diffraction, polarization and laboratory.

PHY 341. INTERMEDIATE LABORATORY (2)
CR: PHY 215 or 305 or equivalent. Experiments in modern physics, including the area of atomic, nuclear, solid state and wave phenomena.

PHY 371. CONTEMPORARY PHYSICS (5)
PR: Junior Standing. A qualitative, non-mathematical investigation of physics, emphasizing its influence on life today. (Not for physics majors)

PHY 405. STATISTICAL PHYSICS I (3)
PR: MTH 305 and either PR: PHY 305 or CR: PHY 315. Statistical approach to thermodynamics and kinetic theory and introduction to statistical mechanics. First quarter of the sequence PHY 405-505.

PHY 407. MECHANICS II (3)
PR: PHY 307 and MTH 401. Continuation of PHY 307. Motion of a group of particles, coupled oscillators, normal modes, dynamics of rigid bodies, Lagrange's and Hamilton's equations, principle of least action.

PHY 409. ELECTRICITY AND MAGNETISM II (3)
PR: PHY 309 or CI. CR: MTH 401. Electrostatic fields, magnetic fields of steady currents, dielectrics and magnetic materials, Maxwell's equations. Second quarter of sequence PHY 309-409-509.

PHY 415. FUNDAMENTAL ACOUSTICS (4)
PR: PHY 307 or CI. Vibrations of elastic media, sound generation and propagation. Acoustical, electrical and mechanical energy conversion. Phychoacoustics. Underwater acoustics.

PHY 421. SOLID STATE PHYSICS I (4)
PR: PHY 323 and MTH 401. Crystal structure, x-ray and electron diffraction, mechanical and thermal properties of solids, electrical and magnetic properties of metals, band theory of metals insulators and semiconductors. First quarter of sequence PHY 421-521.

PHY 437. QUANTUM MECHANICS I (3)
PR: PHY 407, MTH 402 or CI. Wave-particle duality, uncertainty principle, Schrödinger's equation, postulates, angular momentum, and central forces. First quarter of sequence PHY 437-537.

PHY 441. ADVANCED LABORATORY (2)
PR: PHY 341. Experimental work primarily related to nuclear physics. Emphasis on modern physical experimental techniques employing some of the new types of equipment.

PHY 481. UNDERGRADUATE RESEARCH (1-6)
PR: Senior or advanced junior standing and CC. Individual experimental work under supervision of instructor. (S/U grade only.)
PHY 491. PHYSICS SEMINAR (1)
PR: Senior or advanced junior standing or CC. May be repeated once. (S/U grade only.)

FOR SENIOR LEVEL AND GRADUATE STUDENTS

PHY 501. NUCLEAR PHYSICS (4)
PR: PHY 437 or CI. Systematics of stable nuclides, nuclear forces, nuclear models, reactions, radiation, and nuclear instrumentation.
PHY 505. STATISTICAL PHYSICS II (3)
PR: PHY 405. Continuation of the sequence PHY 405-505.
PHY 507. MECHANICS III (3)
PR: PHY 407. Continuation of PHY 407. Elastic media, the wave equation, transverse and longitudinal wave motion, the diffusion equation, boundary value problems and Fourier series, Fourier integral, fluid dynamics.
PHY 509. ELECTRICITY AND MAGNETISM III (3)
PR: PHY 409. Method of images, Laplace's equation, radiation, transmission, reflection and refraction of electromagnetic waves, guided waves. Third quarter of sequence PHY 309-409-509.
PHY 517. INTRODUCTION TO PLASMA PHYSICS (4)
PR: PHY 509 or CI. Introduction to Boltzmann, magnetohydrodynamic and orbit approaches to plasmas. Longitudinal and electromagnetic waves in plasmas. Collisions and radiation. Instabilities.
PHY 521. SOLID STATE PHYSICS II (3)
PR: PHY 421. Optical, electrical and magnetic properties of insulators, superconductivity, imperfections in solids. Second quarter of sequence PHY 421-521.
PHY 523. ELECTRONICS (4)
PR: PHY 409 and PHY 341. Vacuum and gas-discharge tubes, semiconductors, transistors, electronic circuit analysis and laboratory.
PHY 537. QUANTUM MECHANICS II (3)
PR: PHY 437 or CI. Matrix mechanics, approximation methods, transformations, scattering and identical particles.
PHY 541. METHODS OF THEORETICAL PHYSICS I (4)
PR: MTH 401 or CI. Elements of complex analysis, Laplace transforms, Fourier series, and Fourier transforms. Mathematical techniques for scientists and engineers. Equivalent to MTH 541.
PHY 542. METHODS OF THEORETICAL PHYSICS II (4)
PR: MTH 401 or CI. Series solutions of differential equations, Sturm-Liouville theory, Green's functions, integral equations, special functions, eigenvalue problems, and diagonalization of matrices. Mathematical techniques for scientists and engineers. Equivalent to MTH 542.
PHY 583. SELECTED TOPICS IN PHYSICS (1-6)
PR: Senior or advanced standing and CC. Each topic is a course in directed study under the supervision of a faculty member. Among the courses contemplated are Physics of Waves, Space Physics, Elementary Particle Physics, Relativity, Nuclear Structure.

FOR GRADUATE STUDENTS ONLY

PHY 601. ATOMIC AND MOLECULAR SPECTRA (4)
PR: PHY 437 or CI. Quantitative study of atomic and molecular structure and spectra.
PHY 605. STATISTICAL MECHANICS (4)
PR: PHY 505 or CI. Kinetic theory, configuration and phase space, Boltzmann theorem, Liouville theorem, ensemble theory, quantum statistics.
PHY 607. CLASSICAL MECHANICS I (3)
PR: PHY 507 or CI. Dynamics of particles and systems of particles, variational

techniques, Lagrange's equations, central forces. First quarter of sequence PHY 607-608-609.

PHY 608 CLASSICAL MECHANICS II (3)
PR: PHY 607 or CI. Rigid body dynamics, tensors and dyadics, special relativity, Lorentz transformation, covariance, Hamilton's equations, least action principle. Second quarter of sequence PHY 607-608-609.

PHY 609. CLASSICAL MECHANICS III (3)
PR: PHY 608. Canonical transformations, Lagrange and Poisson brackets, Liouville's theorem, Hamilton-Jacobi theory, connection between classical and quantum mechanics, small oscillation theory, Hamiltonian and Lagrangian formulations for fields.

PHY 631. ELECTROMAGNETIC THEORY I (3)
PR: PHY 509 or CI. Electrostatics, magnetostatics, potential and boundary value problems, Maxwell's equations. First quarter of sequence PHY 631-632-633.

PHY 632. ELECTROMAGNETIC THEORY II (3)
PR: PHY 631 or CI. Electromagnetic waves, wave guides and resonant cavities, diffraction, relativistic-particle kinematics and dynamics, plasmas and magnetohydrodynamics.

PHY 633. ELECTROMAGNETIC THEORY III(3)
PR: PHY 632 of CI. Scattering, radiation, multipole fields, radiation damping, and self-fields.

PHY 637. QUANTUM MECHANICS III (3)
PR: PHY 537 or CI. Dirac equation, quantized fields, collision theory, symmetry and invariance.

PHY 641. EXPERIMENTAL PHYSICS (2)
PR: Graduate standing. Laboratory techniques frequently required in experimental research. Includes manipulation of glass, production and measurement of vacua, production and measurement of thin films, and use of various machine tools.

PHY 681. GRADUATE RESEARCH (1-15)
PR: CC. (S/U grade only.)

PHY 683. SELECTED TOPICS IN PHYSICS (1-15)
PR: CC. Each topic is a course in directed study under the supervision of a faculty member.

PHY 688. RECENT ADVANCES IN PHYSICS WITH EMPHASIS ON THEIR IMPACT ON COLLEGE-LEVEL COURSES (3-6)
PR: Graduate Standing. A course designed to consider and study the recent developments in the field of physics especially those developments that have an effect on altering the basic concepts and ideas of the field and imply a change in the presentation of introductory material in physics. (S/U grade only). (Credit not applicable toward thesis degree requirements).

PHY 689. DIRECTED TEACHING (3-9)
PR: Graduate Standing. Supervision of the teaching of graduate teaching assistants in elementary and/or laboratory courses. (S/U grade only) (Credit not applicable toward thesis degree requirements).

PHY 691. GRADUATE SEMINAR (1)
(S/U grade only.)

PHY 699. MASTER'S THESIS (1-9)
PR: PHY 641. (S/U grade only.)

POLITICAL SCIENCE

Faculty: M. O'Donnell, chairman; Barber, E. Black, Horrigan, Jreisat, A. Kelley, Laughlin, Levy, Rosner, Sidor, Snook, Stoudinger.

POL 199. INTRODUCTION TO POLITICAL SCIENCE(4)
A survey of the basic concepts in government and politics, theories and methods of political science and the American political system as well as materials.

POL 201. AMERICAN NATIONAL GOVERNMENT (4)
Basic principles and procedures of the American governmental system with emphasis on current issues and trends.

POL 203. STATE AND LOCAL GOVERNMENT (4)
Analysis of the structure and function of state and local governments, of the social and political influences that shape them, and of the dynamics of their administrative processes.

POL 311. COMPARATIVE POLITICS (4)
Analysis of political systems using the concepts and methods of comparative politics. Studies of selected countries will be included.

POL 331. INTERNATIONAL RELATIONS (4)
Contemporary international affairs, including analysis of politics among nations; control of national foreign policies, sovereignty, nationalism and diplomacy; technology, public opinion and war in international relations.

POL 333. INTERNATIONAL ORGANIZATION (4)
The problems of achieving peace through existing international structures, both within and outside the United Nations. The background, achievement and organizational problems of these agencies.

POL. 338. CONTEMPORARY AMERICAN FOREIGN POLICY (4)
Analysis of the development and scope of United States foreign policy focusing upon our aims, decision-making, application of policies, and alternatives for specified problem areas in foreign affairs.

POL 341. POLITICAL PARTIES (4)
PR: POL 201 or CI. The development, structure, operation and significance of political parties in the American system of government.

POL 343. EMPIRICAL POLITICAL ANALYSIS (4)
An introduction to the conduct of empirical political inquiry and to research methods. Techniques of data generation, collection, and analysis will be emphasized. Laboratory exercises required.

POL 345. PRIVATE GROUPS AND PUBLIC POLICY (4)
Role of non-party groups in the American society and their impact on public policy; growth of interest groups, internal politics, and formation of public policy.

POL 347. CONTEMPORARY SOUTHERN POLITICS (4)
Comparative study of selected political patterns and trends in the eleven southern states since 1950. Analysis of such topics as massive resistance, the civil rights movement, black political participation, factional division within the Democratic Party and the growth of presidential and gubernatorial Republicanism.

POL 351. INTRODUCTION TO PUBLIC ADMINISTRATION (4)
PR: Upper level standing. An examination of the administrative principles and processes by which public policies are implemented in a democratic society.

POL 405. POLITICS OF THE SOVIET UNION (4)
Development of the Soviet political system since the Revolution. Theory and practice of Communism in the contemporary Soviet Union.

POL 410. POLITICAL SYSTEMS OF SOUTHEAST ASIA (4)
PR: Upper level standing. Comparative analysis of political systems and practices in Southeast Asian countries with emphasis on the nature of nationalism, political development and revolutionary processes in the region.

POL 415. MILITARY POWER IN INTERNATIONAL POLITICS (4)
PR: POL 331, Upper Level Standing or CI. A study of the role of military power affecting war and peace in modern international politics. Among the issues covered are, limited war, nuclear deterrence, balance of power, conventional war, guerrilla warfare, disarmament and nuclear proliferation.

POL 421. GOVERNMENT AND POLITICS OF THE FAR EAST (4)
Development of political ideas and institutions in Japan and China with emphasis on 20th century issues.

POL 425. POLITICS OF LATIN AMERICA (4)
Comparative analysis of political systems of Latin America, with emphasis on modernization, the role of the military, revolutionary processes, and inter-American relations.

POL 428. POLITICS OF AFRICA (4)
Development and growth of emerging African political systems and their relations with each other and with states outside of Africa.

POL 431-432. CONSTITUTIONAL LAW (4,4)
The development of the United States government through judicial interpretation of the Constitution. Case study method of analysis.

POL 434. JUDICIAL POLITICS (4)
Consideration of selected theories of judicial decision-making. Examination and application of social science methodology to the study of court systems PR: POL 431 or POL 432.

POL 438. COMPARATIVE FOREIGN POLICY (4)
Comparative study of foreign policy behavior of nations. Analysis of formulation and objectives of foreign policies.

POL 441. THE AMERICAN PRESIDENCY (4)
The presidency as an institution of American democracy; constitutional status and powers, administrative responsibilities, legislative and political leadership, decision-making process.

POL 443. POLITICAL BEHAVIOR (4)
PR: Upper level standing or CI. Economic, psychological and social dimensions of political behavior; political participation, leadership and elites; political attitudes; voting behavior and decision-making processes.

POL 453. URBAN GOVERNMENT (4)
An introduction to the theory of urbanism, formal and informal structures that govern urban areas, new patterns and policy emphasis of urban government.

POL 454. URBAN POLITICS (4)
PR: Upper level standing. POL 203 or equivalent. An examination of the political processes and systems in urban and suburban communities in America.

POL 455. THE AMERICAN LEGISLATIVE PROCESS (4)
Intensive analysis of the nature of the legislative process in the United States; organization, procedure, leadership, relation with other governmental agencies, group tactics, decision-making process in the formation of policy.

POL 457. PROBLEMS OF PUBLIC FISCAL ADMINISTRATION (4)
PR: POL 351 or CI. Analysis of problems in the growth and development of public budgets with emphasis on principal techniques and theories of fiscal administration.

POL 461. CLASSICAL POLITICAL IDEAS (4)
PR: POL 199 or CI. Basic political ideas from the works of Plato, Aristotle, Cicero, St. Augustine, St. Thomas Aquinas and other leading Greek, Roman, and Medieval-Christian political philosophers.

POL 462. CLASSICAL POLITICAL IDEAS (4)
PR: POL 199 or CI. Basic political ideas from the works of Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Benthem and other leading modern political philosophers.

POL 463. AMERICAN POLITICAL THOUGHT (4)
PR: Upper level standing. American political thought from the Colonial period to the present with emphasis on recent contributions.

POL 464. MODERN POLITICAL THOUGHT (4)
PR: Upper level standing. Basic political ideas from the works of 19th and 20th century political philosophers.

POL 481. INDIVIDUAL RESEARCH (1-4)
PR: 3.0 average in Political Science and CC. Investigation of some aspect of political science culminating in the preparation of an original research paper.

POL 491. SENIOR SEMINAR(4)
PR: Senior standing and completion of all preceding core requirements in Political Science. Designed to give the student an opportunity to examine and apply various concepts and methods in the field of political science to some integrated problem area.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

POL 520. ADMINISTRATION OF URBAN AFFAIRS (4)
An analysis of the role of the administrator at the municipal level stressing the division of functions, policy formation, alternative governmental structures and their effect on administrative processes.

POL 525. PROBLEMS OF PUBLIC PERSONNEL ADMINISTRATION (4)
An analysis of recruitment, testing, training, employee and human relations in the public service.

POL 527. COMPARATIVE PUBLIC ADMINISTRATION (4)
Comparison of certain aspects of public administrative systems of various governments, emphasizing such writers as Siffin, Hadari, Appleby, Hu, Simon and Riggs.

POL 530. LEGAL AND REGULATORY PROCESSES (4)
Systematic study of the political-judicial factors in the regulatory process of administrative agencies.

POL 550. METHODOLOGICAL AND CONCEPTUAL PROBLEMS IN COMPARATIVE AND INTERNATIONAL POLITICS (4)
Examination of problems and concepts in the study of comparative and international politics, emphasizing theoretical and empirical relations and relative advantages of different levels and units of analysis. May be repeated for credit.

POL 561. POLITICS OF THE DEVELOPING AREAS (4)
An analysis of the ideologies, governmental structures, and political processes of selected nations of the non-Western world.

POL 571. FIELD WORK (4)
PR: 3.0 average in Political Science and CI. Application of research models now employed in governmental agencies; including developing a structured research proposal, preparing a network program comprising the elements making up the proposal and a research paper. Designed to give the student practical experience in the administrative and political processes.

FOR GRADUATE STUDENTS ONLY

POL 600. SCOPE AND METHODS OF POLITICAL SCIENCE (4)
Advanced study of the scope and methodologies of political science, including their applications to different research areas.

POL 620. URBAN POLICY ANALYSIS (4)
Systematic examination of the organizational and administrative characteristics of planning, program development and reporting activities conducted at local levels by various state, regional and federal agencies.

POL 623. URBAN FINANCIAL ADMINISTRATION (4)
Examination of organizational structure and administrative processes of urban fiscal agencies, sources of revenue, expenditures and indebtedness, and current problems in budgeting.

POL 625. PROBLEMS IN URBAN POLITICS (4)
Analysis in depth of pressure group behavior and its role in municipal policy formulation, including the study of community power approaches advanced by Rossi, Sofen, Kammarer, Martin and others.

POL 627. ADMINISTRATIVE BEHAVIOR AND PUBLIC POLICY FORMATION (4)
Analysis of the formal, informal and societal characteristics of public bureaucracies and their impact on public policy.

POL 640. POLITICAL SOCIALIZATION (4)
Seminar in selected phases of the political socialization process.

POL 643. CONTEMPORARY POLITICAL IDEAS AND BEHAVIOR (4)
Study of certain phases of political philosophy and theories of modern political analysis.

POL 645. SEMINAR IN STATE POLITICS (4)
Analysis of selected topics in American state politics. May be repeated for credit as topics vary.

POL 650. SEMINAR IN POLITICAL REVOLUTION AND CHANGE (4)
Analysis of selected contemporary problems relating to political revolution and change.

POL 662. SEMINAR IN COMPARATIVE POLITICS (4)
Comparative analysis of political systems in terms of processes, institutions, and behavior. May be repeated for credit.

POL 665. SEMINAR IN INTERNATIONAL ORGANIZATIONS AND ADMINISTRATION (4)
Analysis of various phases of international organizations and their administrative systems.

POL 667. SEMINAR IN INTERNATIONAL RELATIONS (4)
Investigation of selected phases of international relations in world politics.

POL 670. SEMINAR IN AMERICAN GOVERNMENT AND POLITICS (4)
Analysis of selected current problems in American government and politics.

POL 675. SEMINAR IN URBAN PROBLEMS (4)
Systematic analysis and evaluation of various problem areas of contemporary urban governments.

POL 677. SEMINAR IN ADMINISTRATIVE PROCESS (4)
Analysis of various administrative processes emphasizing policy formulation, implementation, programming, new concepts of management in a public service environment.

POL 680. INDIVIDUAL RESEARCH (4)
Study in depth of a special problem in political science approved by a thesis committee.

POL 690. MASTER'S THESIS (1-9)

PORTUGESE

See MODERN LANGUAGES

PSYCHOLOGY

Faculty: Kimmel, chairman; Achenbach, Bitterman, Clement, Dertke, Fowler, Hawkins, Kramer, LaBarba, Mourer, Nelson, Penner, Rahn, Sandler, Sidowski, Stein, Strong, Toth, Woodard

PSY 201. INTRODUCTION TO PSYCHOLOGY (5)
A survey of major topics in psychology (learning, perception, thinking, intelligence, etc.), and an introduction to methods used in psychological investigation. Lecture plus discussion.

PSY 311-312. RESEARCH METHODS IN PSYCHOLOGY (4:1)
PR: PSY 201 and SSI 301. Scientific research methods and their applications for psychology. Topics include experimental planning, control procedures, and interpretative principles. Lecture plus lab. Must be taken concurrently.

PSY 313. APPLIED PSYCHOLOGY (4)
PR: PSY 201 or CI. The application of psychological principles and the functions of psychologists in education, government, industry, and clinical practice. NOT FOR MAJOR CREDIT.

PSY 335. PSYCHOLOGY OF ADJUSTMENT (4)
PR: PSY 201 or CI. Genetic, organic and learned factors involved in the processes of personal adjustment; applications of mental health principles to everyday living. NOT FOR MAJOR CREDIT.

PSY 341. CHILD PSYCHOLOGY (4)
PR: PSY 201 or CI. Developmental and psychosocial aspects of childhood, including hereditary, maturational, psychological, and social determinants of child behavior. NOT FOR MAJOR CREDIT.

PSY 401. GENERAL PSYCHOLOGY (4)
PR: Upper-division standing. Designed to give the advanced undergraduate non-major an opportunity to acquire concepts within the field of psychology and relate these to other areas of study. NOT FOR MAJOR CREDIT.

PSY 402. PSYCHOLOGY OF LEARNING (4)
PR: PSY 201, SSI 301, PSY 311-312. Survey of methods, empirical findings and theoretical interpretations in conditioning, instrumental learning, and verbal learning. lec-lab.

PSY 403. DEVELOPMENTAL PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. Survey of methods, empirical findings and theoretical interpretations in the study of human and animal development. lec-lab.

PSY 404. SOCIAL PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. Behavior of the individual human being as affected by the social and cultural influences of society. lec-lab.

PSY 405. NEUROPSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. Gross neural and physiological components of behavior. Structure and function of the central nervous system as related to emotion, motivation, learning, and theory of brain functions. lec-lab.

PSY 411. EXPERIMENTAL DESIGN AND ANALYSIS (4)
PR: PSY 201, SSI 301, PSY 311-312. Detailed coverage of those research designs and statistical techniques having the greatest utility for research problems in psychology. Emphasis on topics from analysis of variance.

PSY 415. SYSTEMATIC PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. The historical roots of modern psychological theories, investigation of the various schools of psychology such as behaviorism. Gestalt psychology, psychoanalysis, and phenomenological psychology.

PSY 421. MOTIVATION (4)
PR: PSY 201, SSI 301, PSY 311-312, 402, 405. An examination of human and animal motivations for both physiological and psychological viewpoints. Emphasis will be given to current research.

PSY 425. COMPARATIVE PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312, 402, 405. The study of the evolution of behavior, similarities and differences in capacities for environmental adjustment and for behavioral organization among the important types of living beings from plants and unicellular organisms to the primates including man.

PSY 432. INDUSTRIAL PSYCHOLOGY (4)
PSY 201, SSI 301, PSY 311-312, 404. Application of psychological principles to industry. Topics considered: Man-machine systems, development of skills, training, employee attitudes, worker motivation, accident prevention, fatigue and monotony.

PSY 436. PSYCHOLOGICAL ASSESSMENT (4)
PR: PSY 201, SSI 301, PSY 311-312, 403. A consideration of the instruments for intellectual achievement, and personality assessment including their applications, development, and potential abuses. Students may *not* receive credit for both PSY 436 and EDF 303, Introduction to Measurement and Evaluation.

PSY 441. VERBAL BEHAVIOR (4)
PR: PSY 201, SSI 301, PSY 311-312, 402. Survey methods, empirical findings and theoretical interpretations of verbal learning and retention, concept learning and information processing.

PSY 445. PERCEPTION (4)
PR: PSY 201, SSI 301, PSY 311-312, 405. How man perceives his environment. Topics include sensory bases of perception, physical correlates of perceptual phenomena, and the effects of individual and social factors on perception. Primary emphasis on vision and audition. lec-lab.

PSY 452. PERSONALITY (4)
PR: PSY 201, SSI 301, PSY 311-312, 402, 403. Methods and findings of personality theories and an evaluation of constitutional, biosocial, and psychological determinants of personality. lec-lab.

PSY 455. PSYCHOPATHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312, 402, 403. A study of the classifications of variant behavior and some of the hypotheses used to explain such behavior.

PSY 481. SELECTED TOPICS: RESEARCH (1-4)
PR: Upper division standing and CI. The student plans and conducts an individual research project under the supervision of a psychology faculty member. May be repeated with a maximum of eight hours credit.

PSY 485. SELECTED TOPICS: READING (1-4)
PR: Upper division standing and CI. A reading program of topics in psychology is conducted with the supervision of a psychology faculty member. May be repeated with a maximum of eight hours credit.

PSY 491. SELECTED TOPCS: SEMINAR (4-8)
PR: Upper division standing and CI. Graduate-type seminar designed to provide the advanced undergraduate student with the opportunity to interact with the faculty and other students for the purpose of developing an in-depth understanding of a selected sub-area within psychology. May be repeated with a maximum of eight hours credit.

FOR GRADUATE STUDENTS ONLY

PSY 608. EXPERIMENTAL SOCIAL PSYCHOLOGY (5)
PR: CI. Analysis and laboratory experience in research methods of social psychology, with particular consideration of attitude measurement, systematic observational methods, sociometrics, stimulation of social behavior, interviewing, and content analysis. lec-lab.

PSY 609. MOTIVATION AND EMOTION (5)
A detailed examination of human motivation and emotion from both the physiological and psychological viewpoints. Emphasis will be given to current research.

PSY 610. OPERANT BEHAVIOR (5)
PR: CI. Review of the basic literature of operant conditioning and major areas of research and application. Supervised laboratory experience in programming basic schedules of reinforcement.

PSY 611. PSYCHOPATHOLOGY (5)
Exploration of current approaches to the understanding of pathological behavior and implications for theories of personality. A survey of treatment methods is included.

PSY 613. BEHAVIORAL DISORDERS OF CHILDREN (5)
Causative factors in behavior deviations common to children and adolescents. Thorough study of selected childhood mental disorders and a survey of ameliorative techniques for treating childhood behavior difficulties. Students may *not* receive credit for both PSY 613 and EDS 531, Behavior Disorders in the Schools.

PSY 615. PERSONALITY ASSESSMENT (5)
PR: PSY 617. Interview, case history, objectives and projective tests are surveyed together with a critical review of the history and theory of assessment. Special consideration is given to study of interrelations between research, diagnostic data, and personality theory.

PSY 617. INDIVIDUAL INTELLIGENCE TESTING (5)
History and objectives of intelligence testing. Methods used in the construction of individual intelligence tests. Intensive experience in the administration and interpretation of the Wechsler tests, Stanford-Binet, and Grace Arthur tests. Students may *not* receive credit for both PSY 617 and EDF 617, Measurement of Individual Intelligence.

PSY 619. INTRODUCTION TO COUNSELING AND PSYCHOTHERAPY (5)
Examination of theory and practices in counseling and psychotherapy. The role of the counselor and the nature of the therapeutic relationship is emphasized. Professional and ethical issues are considered.

PSY 620. SUPERVISED RESEARCH (1-5)
PR: CI. May be repeated for credit. The student works in close collaboration with a faculty member in designing, conducting and interpreting experiments.

PSY 621. APPLICATIONS OF LEARNING PRINCIPLES & PROCEDURES (5)
PR: Prior course in learning, or CI. Application of various learning principles and procedures to problems in specialized settings. Co-listed with the Rehabilitation Institute (REH 621)

PSY 631, 632, 633. RESEARCH METHODS AND MEASUREMENT I, II, & III (5,5,5)
PR: Admission to M.A. program in psychology or CI. Three-quarter sequence designed to cover research methods and strategies and their application to psychology. Topics include logic and purpose of experimentation in psychology, measurement theory, design and analysis of experiments, probability, statistical inference, analysis of variance, correlational methods, interpretation of experimental findings. Required for M.A. degree except by waiver by the student's advisory committee.

PSY 634. PHYSIOLOGICAL PSYCHOLOGY (5)
PR: Admission to M.A. program in psychology or CI. Neural and physiological foundations of behavior. Structure and function of the central nervous system and autonomic nervous system. Physiological basis of learning, motivation in sub-humans and humans. Required for M.A. degree unless waived by examination or by student's advisory committee. First quarter.

PSY 635. DEVELOPMENTAL PSYCHOLOGY (5)
PR: Admission to M.A. program in psychology or CI. Detailed study of the development of human and animal behavior aimed toward an understanding of ontogenetic contributions to later behaviors. Effects of early experience on later behavior. Required for M.A. degree unless waived by examination or by student's advisory committee. First quarter.

PSY 636. LEARNING AND MOTIVATION (5)
PR: Admission to M.A. program in psychology or CI. Habituation, sensitization, classical and instrumental conditioning, generalization, discrimination, trial and error learning, problem solving. Required for M.A. degree unless waived by examination or by student's advisory committee. Second quarter.

PSY 637. PERSONALITY AND PSYCHOPATHOLOGY (5)
PR: Admission to M.A. program in psychology or CI. Analysis of traditional and current theories of personality and psychopathology with applications to etiology and treatment of behavior disorders. Required for M.A. degree unless waived by examination or by student's advisory committee. Second quarter.

PSY 638. COGNITION AND PERCEPTION (5)
PR: Admission to M.A. program in psychology or CI. Current data and theory of perceptual and thought processes. Consideration of physiological and psychological variables in perception and cognition and applications of information and signal detection theory. Required for M.A. degree unless waived by examination or by student's advisory committee. Third quarter.

PSY 639. SOCIAL PSYCHOLOGY(5)
PR: Admission to M.A. program in psychology or CI. Overview of theory and research in social psychology. Attitudes, values, group processes, leadership, conformity, social learning and motivation. Required for M.A. degree unless waived by examination or by student's advisory committee. Third quarter.

PSY 640. APPRENTICESHIP IN PSYCHOLOGY (2)
PR: Admission to M.A. program in psychology. By arrangement with faculty in psychology. Tutorial interaction in scientific or clinical work of faculty member. To be taken each of the first three quarters of first year of M.A. work. Required for M.A. degree. May be repeated for a maximum of 6 hours credit.

PSY 650. ELECTROPHYSIOLOGICAL METHODS (5)
PR: PSY 634 or CI. Introduction to the use of electrophysiological methods in psychological research. This will involve actual experience in use of oscilloscopes, polygraphs, EEG techniques, stereotaxic procedure, stimulation and lesioning techniques, use of microtome, and staining and mounting of tissue sections. Lec-lab.

PSY 682. PRACTICUM IN PSYCHOLOGY (5)
Supervised observation and training in various community and university clinic, research and/or industrial settings.
PSY 689. GRADUATE SEMINAR IN LEARNING (5)
May be repeated for credit.
PSY 690. GRADUATE SEMINAR IN PERCEPTION (5)
May be repeated for credit.
PSY 691. GRADUATE SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY (5)
May be repeated for credit.
PSY 692. GRADUATE SEMINAR IN SOCIAL PSYCHOLOGY (5)
May be repeated for credit.
PSY 693. GRADUATE SEMINAR ON ISSUES IN CLINICAL PSYCHOLOGY (5)
May be repeated for credit.
PSY 694. GRADUATE SEMINAR IN DEVELOPMENTAL PSYCHOLOGY (5)
May be repeated for credit.
PSY 695. GRADUATE SEMINAR IN PERSONALITY (5)
May be repeated for credit.
PSY 696. GRADUATE SEMINAR IN COGNITIVE PROCESSES (5)
May be repeated for credit.
PSY 697. GRADUATE SEMINAR IN QUANTITATIVE METHODS (5)
May be repeated for credit.
PSY 698. GRADUATE SEMINAR IN INDUSTRIAL PSYCHOLOGY (5)
May be repeated for credit.
PSY 699. THESIS (5)
A study in depth of a problem in psychology approved by a thesis committee. Student stands an oral examination on the thesis.

REHABILITATION

Faculty: Pinkard, director; Ebra, Landsman, Pasach, Turner.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

REH 501. REHABILITATION: CONCEPTS AND THEORETICAL ISSUES (5)
A look at the historical origin, development and current understanding of the philosophy of rehabilitation. The rehabilitation process is viewed as an integration of concepts and procedures from the medical, social-psychological, and legal disciplines. The clinical, legal, societal, and self definitions of disability are studied together with their implications for the orientation and dimensions of service programs for the handicapped.
REH 502. ISSUES AND PROBLEMS IN REHABILITATION COUNSELING (5)
PR: CI. Focuses on techniques for the effective utilization of one's self in the various coordinating relationships of the rehabilitation process.
REH 503. MEDICAL ASPECTS OF DISABILITY (4)
Study of medical information needed by the counselor in integrating medical services into the total rehabilitation process from referral to placement. Examines the effect of a client's physical condition on various areas of adjustment. Includes appraisal of physical capacities in terms of functional limitations and individual differences.
REH 504. PSYCHIATRIC ASPECTS OF DISABILITY (4)
A survey of modern treatment and diagnostic procedures used by the mental health professions to assist the handicapped and disadvantaged to deal with various disabilities. Patterns and participation of rehabilitation professionals in this helping process are analyzed and evaluated.
REH 505. SPECIAL PROBLEMS IN REHABILITATION COUNSELING (5)
PR: PSY 619 or CI. The course will focus on specific counseling problems relating to special disabilities that are unique to the rehabilitation process.
REH 506. EVALUATION IN THE REHABILITATION PROCESS (5)
PR: REH 501 or CI. Methods and techniques employed to assess the mental,

social, and vocational problems of handicapped persons. Particular attention will be given to the contribution of diagnosis of vocational potential in programs aimed at helping disabled individuals reach their highest possible capacity.

REH 507. PRINCIPLES AND PRACTICES OF REHABILITATION SERVICES: PRACTICUM I (5)
PR: Minimum of 15 hours of REH courses. Procedures appropriate to meeting the full range of needs of the handicapped individual as he completes the sequence of rehabilitation services. Supervised experience in observation and participation in counseling services in various rehabilitation agencies.

FOR GRADUATE STUDENTS ONLY

REH 604. RESEARCH AND METHODOLOGY IN REHABILITATION (5)
PR: Statistics, or CI. The aim of this course is to help students evaluate and utilize available research studies as well as to develop their own research skills. An individual research project is required.

REH 605. SOCIAL FACTORS IN REHABILITATION (5)
Application of a sociological frame of reference to physical and mental impairment. Discussion of societal values and norms relative to the partially and totally disabled. Analysis of the role of the disabled in the basic institutionalized subsystems of society, with implications for the rehabilitation process.

REH 606. VOCATIONAL PLACEMENT AND ADJUSTMENT OF THE DISABLED (5)
A study of occupations, vocational theories, pre-placement counseling, vocational placement techniques, follow-up procedures, and the psycho-social aspects of work as they pertain to rehabilitating disabled and disadvantaged persons.

REH 607. SELECTED TOPICS IN REHABILITATION (2-5)
PR: 15 hours of REH graduate courses or equivalent. Designed to give the graduate student an opportunity to study in depth some concept, procedure, or body of data in the rehabilitation field. Course work will consist of directed individual study and a relevant research project or paper. Course may be repeated once for credit.

REH 610. PRINCIPLES AND PRACTICES OF REHABILITATION SERVICES: PRACTICUM II (5)
PR: REH 507 and completion of a minimum of 30 hours of REH courses. Supervised practice in the application of knowledge and skills acquired in previous courses and in REH 507. Experience in rendering rehabilitation services to the moderately and severely disabled in at least two appropriate community facilities.

REH 620. INTERNSHIP IN REHABILITATION (15)
PR: REH 507, REH 610. Student placement in an approved intern setting for a minimum of 400 hours supervised experience.

REH 621. APPLICATIONS OF LEARNING PRINCIPLES AND PROCEDURES (5)
PR: Prior course in Learning or CI. Application of various learning principles and procedures to problems in specialized settings. See PSY 621.

RELIGIOUS STUDIES

Faculty: Tremmel, chairman; Gessman, DeHainaut, Bassuk, Haywood.

REL 300 INTRODUCTION TO RELIGION (4)
An examination of the phenomenon of religion, which will include (1) an examination of *why* people do religion; (2) an examination of the character of theology, with special attention to certain basic theological concepts such as God, sin, salvation, liberation, reincarnation, immortality, theism, atheism; (3) an analysis of the character of religious ritual in its metatechnological, sacramental and experimental form; and (4) an examination of the place and character of moral systems in religion.

REL 310. OLD TESTAMENT STUDIES (4)
An introduction to the critical study of the Hebrew Scriptures against the background of the ancient Near East, with attention to the history and religion of the Hebrew people.

REL 315. NEW TESTAMENT STUDIES (4)
An introduction to the critical study of the New Testament in context of Christian beginnings in the first century A.D.

REL 325. HISTORY OF JUDAISM (4)
The historical development of Judaism and Jewish concepts from biblical times to the modern era with emphasis on the formative years from the Prophets to the close of the Talmud.

REL 327. HISTORY OF CHRISTIANITY I (4)
The historical development of Christianity, its ideas and institutions, from the Establishment of Constantine to the Council of Trent.

REL 328. HISTORY OF CHRISTIANITY II(4)
The historical development of Christianity, its ideas and institutions from the work of John Wycliff to the rise of "religious modernism" in the 19th century.

REL 329. RELIGION IN AMERICA (4)
To examine the movement from state church to pluralism in American religious institutions; the religious results of non-Protestant immigration; the Jewish factor; the effect of home missions and social concern programs upon American life; political entanglements and the concept of church/state separation.

REL 350. WORLD RELIGIONS — EASTERN (5)
An introduction to and a comparison of the ideas, the literature, the institutions of the major religions of the Eastern World, especially Buddhism (Therevada, Mahayana, Zen), Hinduism, Jainism, Taoism, Confucianism, Shinto.

REL 351. WORLD RELIGIONS — WESTERN (5)
An introduction to and a comparison of the ideas, the literature, the institutions of the major religions of the Western (Near Eastern origin) World — Judaism, Zoroastrianism, Christianity, and Islam. And a general comparison of Western religious ideas with Eastern religious ideas.

REL 360. DIALOGUES IN RELIGION (4)
A course designed to place in dialogic encounter various aspects of contemporary religious beliefs and practices for the purpose of enabling students to hear and participate in discussions concerning the claims and procedures of existing religions.

REL 370. CONTEMPORARY RELIGIOUS THOUGHT (4)
An examination of the central ideas of recent theological thinkers; such men as Barth, Brunner, Bultmann, Bonhoeffer, Rahner, Tillich Cox, Altizer, Buber, Niebuhr.

REL 383. SELECTED TOPICS (credits vary)
PR: CI. Course contents depend on students' needs.

REL 385. DIRECTED READINGS (credits vary)
PR: CI. Individual guidance in concentrated reading on a selected topic.

REL 481. UNDERGRADUATE RESEARCH (credits vary)
PR: Junior standing and CI. Individual investigations with faculty supervision.

REL 483. SELECTED TOPICS (credits vary)
PR: Junior standing and CI. Course contents depend on students' needs.

REL 491. SEMINAR IN RELIGION (4)
A course designed for persons, especially Religious Studies majors, whose prior religious studies have prepared them for a cooperative creative and/or research effort in the area of religion.

REL 583. SELECTED TOPICS (credits vary)
PR: Senior standing and CI. Course contents depend on students' needs.

RUSSIAN

See MODERN LANGUAGES

SOCIAL SCIENCES (Interdisciplinary)

Faculty: Orr, chairman; Achenbach, E. Allen, Arnade, Bell, Bosserman, Dilkes, Fuson, Hansen, Hawkins, Hechiche, Jreisat, Kaplan, Nelson, Nesman, Rothwell, Seligsohn, Strong, Swanson, Wheeler, Winthrop, Woodard.

SOCIAL SCIENCE STATISTICS (4)
Topics selected from the following: measures of central tendency and variability probability and the normal curve, correlations, curve fitting, scale and index number theory, polling, interview and survey techniques, content analysis. Students who successfully complete this course may *not* also receive credit for either ECN 331 Business and Economic Statistics or MTH 345 Introductory Statistics.

SSI 311. COMMUNICATION (4)
Topics selected from the following: the language of structure, general semantics, communication networks, language and social perception, diffusion of information, communication and social gamesmanship, Aesopian language and Nu-Think in politics, normative language of clinical psychology, communication and pseudo-events, non-verbal communication.

SSI 315. PUBLIC OPINION AND PRESSURE MECHANISM (4)
The content and formation of public opinion, properties of opinions and attitudes, and the principles and mechanisms of their formation and change.

SSI 321. HUMAN RELATIONS AND PRODUCTIVITY (4)
Topics to be selected from the following: the relation of science, technology, resources, energy, and population change to social, economic, cultural and political change; social implications of research findings from the social, behavioral and management sciences.

SSI 325. PSYCHOLOGY AND THE SOCIAL ORDER (4)
Topics to be selected from the following: the quest for personal identity in modern mass society, the problems of mass culture and mass education, the problems of alienation and anomie in the 20th century, psychological factors in political and industrial conflict, man versus the machine in modern life.

AREA STUDIES

The following five courses (SSI 339, 341, 343, 345 and 347), dealing with one or more countries of a given region, will select and emphasize subject matter from the following topics: its history, its people and their cultures, its social psychology and national characteristics, its resources, its economic and industrial characteristics, its literature, religion and dominant values, its political framework and outlook, its social structure, and its current problems.

Each course may be repeated when countries of concentration vary, but the same country may not be repeated for credit.

SSI 339. EUROPE (4)
SSI 341. LATIN AMERICA (4)
SSI 343. ASIA (4)
SSI 345. AFRICA (4)
SSI 347. THE MIDDLE EAST (4)

SSI 361. COMMUNISM IN THE MODERN WORLD (4)
An interdisciplinary approach to the nature of Communism, its philosophic bases, its anti-religious bias, its economic, social and political theories and practices, the arts and sciences under Communist ideology, its conduct of foreign affairs and associated programs and techniques. Emphasis will be on Soviet and Chinese Communism.

SSI 411. SOCIAL ISSUES OF OUR TIME (4)
Topics to be selected from the following: automation and cybernation and the social problems they generate; special problems of a technological civilization; the implications of changing social patterns of Western culture and opportunities for social re-construction.

SSI 413. LEISURE IN SOCIETY (4)
Facts and trends of changing leisure-time patterns in the USA and other countries; various conceptualizations of leisure; relationships of non-work time to work attitudes, personality, family, community, sub-cultures, religion, value systems, social class, and the functions of government.

SSI 415. THE CITY AND MAN (4)
Topics to be selected from the following: the city and its ills; proposed new types of community formation; planning and community; the social ecology of the city; conventional versus innovative approaches to the problems of the community.

SSI 449,450. THE EMERGING NATIONS (4,4)
PR: Upper division standing or CI. CI required to take SSI 450 out of sequence. This course examines the processes and problems involved when an underdeveloped country seeks to develop a modern industrial civilization.

SSI 481. DIRECTED RESEARCH (1-4)
PR: CI plus upper division standing. May be repeated. To provide advanced students with interdisciplinary research experience in areas of specific interest.

SSI 485. DIRECTED READINGS (1-4)
PR: CI plus upper division standing. May be repeated. To provide advanced students with intensive reading of interdisciplinary nature in areas of specific interest.

SSI 491. SENIOR SEMINAR
PR: Senior standing and CI. To provide an integrating seminar experience for International Studies' majors.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

SSI 503. CONTEMPORARY AMERICAN CULTURE (4)
A social analysis of the leading characteristics, ideals, and values of American life. An effort will be made to deal with a variety of contexts in which American cultural themes, standards and practices receive expression.

SSI 505. SOCIAL VALUES AND SOCIAL ORDER (4)
Topics to be selected from the following: the value-patterns of modern societies; social bases for a world order; the aims and functions of social planning; international transformation created by science and technology.

SSI 583. SELECTED TOPICS (1-4)
PR: CI plus senior standing or graduate status. May be repeated. To provide advanced students with interdisciplinary study of selected topics.

FOR GRADUATE STUDENTS ONLY

SSI 601. SOCIAL PATHOLOGY (4)
An examination of the variety of social criticism which has been leveled at Western society and of some of the defenses which have been made in its behalf. Materials will be chosen from several of the social sciences.

SSI 681. DIRECTED RESEARCH (1-4)
PR: CI and graduate standing. May be repeated. To provide graduate students with interdisciplinary research experience in areas of specific interest.

SSI 685. DIRECTED READINGS (1-4)
PR: CI and graduate standing. May be repeated. To provide graduate students with an intensive reading of interdisciplinary nature in areas of specific interest.

SOCIOLOGY

Faculty: Wheeler, chairman; Bosserman, Brandmeyer, Cameron, Emond, Davidson, Feinberg, Gagan, B. Gunter, Hansen, D. P. Johnson, Kutcher, E. Nesman, Schneller, Senior, R. Smith, Stine.

SOC 201. INTRODUCTION TO SOCIOLOGY (4)
Nature and application of sociological concepts, theories and methods; analysis of societies, associations and groups; social processes and social change.

SOC 251. MARRIAGE (4)
Study of pre-marital and marital relations. Social, cultural and personal factors related to success and failure in mate selection and marriage.

SOC 261. SOCIAL PROBLEMS (4)
Descriptive and analytical consideration of major social problems in modern industrial societies, with emphasis on American society.

SOC 301. INTRODUCTION TO SOCIAL WELFARE (4)
PR: SOC 201 or CI. The historical and contemporary development of organized social services and institutions to meet human needs.

SOC 315. FOUNDATIONS OF THEORY (4)
PR: SOC 201 or CI. Consideration of selected theories of sociology and procedures of systematic theory construction.

SOC 321. SOCIAL INVESTIGATION (4)
PR: SOC 201, SSI 301. Methods and techniques of social research. Design of sociological studies, collection of data, and interpretation of results.

SOC 331. SOCIAL PSYCHOLOGY (4)
PR: PSY 201 or SOC 201. Behavior of the individual human being as affected by social and cultural influences of modern society.

SOC 341. SOCIAL ORGANIZATION (4)
PR: SOC 201 or CI. Social organization in the broadest sense, including institutions and associations, as well as variations in role and status.

SOC 345. SOCIAL STRATIFICATION (4)
PR: SOC 201 or CI. Social status and social stratification, social class as a factor in behavior, social mobility.

SOC 351. THE FAMILY (4)
PR: SOC 201 or CI. Principles of family organization, social adjustment and control. Maturation, socialization and stability of the family.

SOC 371. RACIAL AND ETHNIC RELATIONS (4)
PR: SOC 201 or CI. Comparative study of interracial relations, social tensions, attitudes, and modes of adjustment in various areas of the world.

SOC 373. SOCIOLOGY OF RELIGION (4)
PR: SOC 201 or CI. Types, sources, and functions of religious behavior. Religious behavior in relation to other aspects of personality and culture.

SOC 447. SOCIOLOGICAL IMPLICATIONS OF INDUSTRIALIZATION (4)
PR: SOC 201 or CI. Socio-cultural elements which define and accompany the process of industrialization as observed in mature industrial nations.

SOC 481. INDIVIDUAL RESEARCH (1-4)
PR: Four courses in sociology, including SOC 321, upper division standing or CI. Content dependent upon interests and competence of the student.

SOC 491. SENIOR SEMINAR (4)
For seniors majoring in sociology or other social sciences. Major issues in sociology, stressing theory and research.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

SOC 505. COMMUNITY WELFARE RESOURCES (4)
PR: SOC 301 or CI; upper division standing. Emphasis upon voluntary programs and their development, planning and coordination.

SOC 531. SOCIAL INTERACTION (4)
PR: SOC 331, or CI; upper division standing. Interpersonal influence, complex behavior, role, conflict, and social situational factors.

SOC 533. COLLECTIVE BEHAVIOR (4)
PR: SOC 201 or CI; upper division standing. Study of the development of group and mass behavior—crowds, social movements.

SOC 535. SOCIOLOGY OF SMALL GROUPS (4)
PR: SOC 201 or CI; upper division standing. Theory of small group structure, mechanics of interaction, observation of small groups.

SOC 541. SOCIAL CHANGE (4)
PR: SOC 201 or CI; upper division standing. Major theories of social and cultural change, and mechanisms of change in various societies.

SOC 543. URBAN SOCIOLOGY (4)
PR: SOC 201 or CI; upper division standing. The social structure of the community in modern industrial societies. Analysis of community change.

SOC 553. SOCIOLOGY OF THE ARTS (4)
PR: SOC 201 or CI; upper division standing. The creation, distribution and use of arts from a sociological perspective; the social roles involved.

SOC 561. CRIMINOLOGY (4)
PR: SOC 201 or CI; upper division standing. Etiology of criminal behavior; law enforcement, crime in the United States; penology and prevention.

SOC 563. JUVENILE DELINQUENCY (4)
PR: SOC 201 or CI; upper division standing. Theories of delinquency, patterns of delinquent behavior, methods of control and treatment.

SOC 571. POPULATION (4)
PR: SOC 201 or CI; upper division standing. Sociological determinants of fertility, mortality, and migration; theories of population change.

SOC 575. INDUSTRIAL SOCIOLOGY (4)
PR: SOC 201 or CI; upper division standing. Interaction, communication and authority in economic organizations; the factory as a social system.

SOC 583. TOPICS IN SOCIOLOGY (4)
PR: 16 quarter hours in Sociology *and* prior consent of instructor. May be repeated for credit. See class schedule for content.

FOR GRADUATE STUDENTS ONLY

SOC 611. CONTEMPORARY SOCIOLOGICAL THEORY (4)
PR: Undergraduate course in sociological theory or CI. Emphasizes logical and conceptual dimensions of theory and theory construction.

SOC 621. METHODS OF RESEARCH (4)
PR: Course in Social Investigation or CI. Logic and practice of research; problems of observation and data collection, data processing, and evaluation.

SOC 623. SOCIOLOGICAL STATISTICS (4)
PR: SSI 301 or CI. Logic and application of parametric and nonparametric statistical analysis for sociological data.

SOC 631. SOCIAL PSYCHOLOGY SEMINAR(4)
PR: Course in Social Psychology or CI. Stresses contemporary developments in social psychological theory and empirical research.

SOC 641. COMMUNITY ANALYSIS (4)
PR: Course in Urban Sociology or CI. Theories of community and community organization. Methods of community study; problems of urban areas.

SOC 643. COMPLEX ORGANIZATIONS (4)
PR: Course in Social Organization or CI. Organizational theory, bureaucratic models, authority, power legitimation, and types of formal organization.

SOC 651. FAMILY ANALYSIS (4)
PR: Course in Family or CI. Theory of interpersonal relations and interaction in the modern family. Analysis of functions and roles.
SOC 661. SOCIAL CONTROL (4)
PR: Course in criminology or juvenile delinquency or CI. Theories of control and deviance with research application in problem areas.
SOC 671. SOCIAL GERONTOLOGY (4)
PR: Four courses in social sciences with two in sociology, or CI. Theory of aging. Social correlates of aging, retirement, and personality modification.
SOC 681. GRADUATE RESEARCH (1-4)
PR: CI. Content and method dependent upon interest and competence of student.
SOC 691. THESIS AND THESIS SEMINAR (5)
PR: Equivalent of 16 quarter hours in the student's graduate program, SOC 611, 623, 621.
SOC 692. THESIS AND THESIS SEMINAR(5)
PR: Equivalent of 16 quarter hours in the student's graduate program, SOC 611, 623, 621. May be taken concurrently with SOC 691.

SPANISH

See MODERN LANGUAGES

SPEECH

Faculty: J. Popovich, chairman; Bindert, Brady, Downs, Galati, Heck, Jones, Lucoff, Newcombe, Partney, Perez, Schneider, Sisco, Steck.

SPE 103. SPEECH FOR FOREIGN STUDENTS I (5)
A special course for students learning English as a second language. Intensive study and drill in American English pronunciation and listening comprehension. May be taken in conjuncton with CBS 100-English for Foreign Students.
SPE 104. SPEECH FOR FOREIGN STUDENTS II (5)
PR: SPE 103 or CI. Intensive study and drill in American English pronunciation and listening comprehension. Emphasis on diction and speaking skills.
SPE 201. FUNDAMENTALS OF SPEECH (5)
The nature and basic principles of speech; emphasis on improving speaking and listening skills common to all forms of oral communication through a variety of experiences in public discourse.
SPE 203. SPEECH IMPROVEMENT AND PHONETICS (5)
Designed to improve vocal quality and expressiveness, articulation, and pronunciation, and to give instruction and practice in using the International Phonetic Alphabet for speech improvement.
SPE 241. INTRODUCTION TO BROADCASTING (5)
PR: SPE 201 or 203. Introduction to the principles, tools and skills involved in radio and television broadcasting.
SPE 311. INTRODUCTION TO SPEECH SCIENCE (5)
PR: SPE 203 or CI. Communication models are broken down and each portion analyzed. Emphasis on quantifiable parameters of effective speaking.
SPE 320. ISSUES AND INTERPRETATION (2)
The study of literature through analyses of printed textual materials and of the visual-aural textual performance of them. May be repeated.
SPE 321. FUNDAMENTALS OF ORAL READING (5)
PR: SPE 201 or 203. Designed to develop proficiency in the understanding and oral communicaton of literary and other written materials.
SPE 322. ORAL INTERPRETATION PERFORMANCE (2)
PR: SPE 321 or CI. The study, rehearsal, and performance of literature for Readers Theatre and Chamber Theatre productions. May be repeated (maximum total 6 hours).

SPE 343. BROADCAST SPEECH (5)
PR: SPE 203. The development of skills required for effective announcing, acting, newscasting and other speaking before microphone and camera.

SPE 345. BROADCASTING AND SOCIETY (5)
The communication process and influence of broadcasting upon society.

SPE 347. RADIO PRODUCTION AND DIRECTION (5)
PR: SPE 241. Radio production and direction, laboratory and broadcasting experience.

SPE 348. RADIO PRACTICUM (2)
PR: SPE 347 or CI. The study, rehearsal, and production of radio programs. May be repeated once.

SPE 349. WRITING FOR RADIO AND TELEVISION (5)
PR: SPE 347. The writing of radio and television scripts such as documentaries, children's programs, commercials, dramas, talks, and demonstrations.

SPE 351. INTRODUCTION TO AUDIOLOGY AND SPEECH PATHOLOGY (5)
PR: SPE 203. The nature, causes and principles of treatment of speech and hearing disorders.

SPE 360. CURRENT ISSUES AND RHETORIC (2)
An analysis of significant current speakers and issues. May be repeated.

SPE 361. GROUP DISCUSSION AND CONFERENCE METHODS (5)
PR: SPE 201 or CI. Principles and methods of leading and participating in various types of group discussion and conference. Emphasis on reflective thinking and group dynamics.

SPE 362. TECHNICAL COMMUNICATION (5)
Investigation and application of methodology and effective technical communication for effective oral presentation of technical reports.

SPE 363. PUBLIC SPEAKING (5)
PR: SPE 201 or CI. Study of selected public addresses as aids in speaking extemporaneously and from manuscript. The relationship between public speaking and public policy formulation.

SPE 365. ARGUMENTATION AND DEBATE (5)
PR: SPE 201. Study of principles of argumentation as applied in oral discourse, analysis of evidence and modes of reasoning. Practice in debate preparation and delivery.

SPE 366. FORENSICS (2)
PR: SPE 365 or CI. The study, library research and investigation, and practice in forensics. Application of the principles of rhetoric to the current debate and discussion topics. May be repeated (maximum of 6 hours).

SPE 367. FORMS OF PUBLIC ADDRESS (5)
PR: SPE 363 or 365. An advanced course emphasizing arrangement and style in informative, persuasive and ceremonial public address.

SPE 369. PARLIAMENTARY SPEAKING (3)
Principles of parliamentary procedure and practice in conducting and participating in meetings governed by parliamentary rules.

SPE 381. UNDERGRADUATE RESEARCH (credits vary)
PR: Junior standing and CI. Individual investigations and faculty supervision.

SPE 383. SELECTED TOPICS (credits vary)
PR: Junior standing and CI.

SPE 385. DIRECTED READINGS (credits vary)
PR: Junior standing and CI.

SPE 411. SPEECH BEHAVIOR AND PROCESSES (5)
PR: SPE 203 or CI. Study of the theories of the simple and complex acoustical phenomenon of speech; intensive analysis of the stimulus-feedback variables of speech.

SPE 441. TELEVISION PRODUCTION AND DIRECTION (5)
PR: SPE 241. An introductory course in the techniques of producing and directing television programs.

SPE 442. ADVANCED TELEVISION PRODUCTION AND DIRECTION (5)
PR: SPE 441. Intensive study and practice of the techniques of television production and direction with emphasis on both creative and administrative aspects.

SPE 443. TELEVISION PRACTICUM (2)
PR: SPE 442 or CI. The study, rehearsal, and production of television programs. May be repeated once.

SPE 444. STATION MANAGEMENT (5)
PR : SPE 345. To acquaint the student with the problems of managing a radio and/or television station. To provide the student with realistic opportunities to solve management problems and create programming plans for a broadcast organization.

SPE 445. BROADCAST PRODUCTION CRITICISM (5)
PR: SPE 442. The study of contemporary broadcast programming techniques and practices. Extensive listening and viewing.

SPE 447. HISTORY OF BROADCAST PROGRAMMING (5)
PR: SPE 345. A study of the history of radio and television technology, station and network evolution, and programming.

SPE 448. PUBLIC BROADCASTING (5)
PR: SPE 345. The study of public broadcasting as informational, cultural, and instructional media with special attention on programming.

SPE 449. SEMINAR IN BROADCASTING (5)
PR: SPE 442. Intensive examination and discussion of electronic media in their social, economic, legal, and political contexts with specific emphasis on programming.

SPE 481. UNDERGRADUATE RESEARCH (credits vary)
PR: Senior standing and CI. Individual investigations with faculty supervision.

SPE 483. SELECTED TOPICS (credits vary)
PR: Senior standing and CI.

SPE 485. DIRECTED READINGS (credits vary)
PR: Senior standing and CI.

SPE 491. SENIOR SEMINAR: PROBLEMS IN ORAL COMMUNICATION (2)
PR: Senior Standing. Exploration of problems in all aspects of speaking and listening with emphasis upon an overview of the arts and sciences of oral communication.

SPE 492. SENIOR SEMINAR: PROBLEMS IN ORAL COMMUNICATION (3)
PR: SPE 491. Intensive analysis of the complexities of scholarly investigation in special areas of the arts and sciences of oral communication.

FOR UPPER LEVEL AND GRADUATE STUDENTS

SPE 501. SPEECH BEHAVIOR AND PROCESSES (5)
PR: Upperclass standing. Study of the theories of the simple and complex acoustical phenomenon of speech; intensive analysis of the stimulus-feed back variables of speech.

SPE 503. APPLIED PHONETIC TRANSCRIPTION (5)
PR: SPE 203 or CI. Intensified training in auditory discrimination of the sounds of American English. Detailed use of the International Phonetic Alphabet in rapid transcription of normal and disordered speech.

SPE 511. EXPERIMENTAL PHONETICS (5)
PR: SPE 203. Understanding and application of experimental methods in analyzing speech sounds. Emphasis upon important research findings, instruments and methodologies in the laboratory study of normal speech. Development of phonetic skills of discrimination and reproduction of speech sounds.

SPE 521. ORAL INTERPRETATION OF DRAMATIC LITERATURE (5)
PR: SPE 321 or CI. Critical appreciation and Oral Interpretation of special textual materials which are inherently dramatic in nature and poetry, narrative prose, drama, biography, and history.

SPE 522. ORAL INTERPRETATION OF POETRY (5)
PR: SPE 321 or CI. Critical appreciation of lyric and narrative poetry and communication of that appreciation to an audience. Study of poetic theory and prosodic techniques.

SPE 523. LITERARY ADAPTATION AND ORAL INTERPRETATION (5)
PR: SPE 521. Practice in composition and adaptation of literary materials for oral presentation; an investigation of the more advanced problems in oral interpretation as in Choral Speaking and Chamber Theatre.

SPE 524. ORAL INTERPRETATION OF DRAMATIC LITERATURE, II (5)
PR: SPE 521. A study of selected pre-modern dramas with special emphasis on problems of interpretation for oral performance.

SPE 525. ORAL INTERPRETATION OF CHILDREN'S LITERATURE (5)
PR: SPE 321 or CI. A study of the theories and practice in the oral interpretation of poetry and narrative fiction for children with special emphasis on classical and modern literature for children.

SPE 526. ORAL INTERPRETATION OF BIBLICAL LITERATURE (5)
PR: SPE 321 or CI. A critical interpretation and oral presentation of selected Books of the Old and New Testaments.

SPE 561. THEORY AND RESEARCH IN SMALL-GROUP COMMUNICATION (5)
PR: SPE 361. Advanced study of theories and research in communicative interaction in group discussion and conference.

SPE 565. HISTORY AND CRITICISM OF PUBLIC ADDRESS (5)
PR: SPE 363 or CI. The principles of rhetorical criticism applied to selected great speeches of Western Civilization.

SPE 567. PERSUASION (5)
PR: SPE 365. Advanced study in theories and practice in persuasive speaking and of the extra-logical factors involved in changing beliefs and behavior of audiences. Emphasis on experimental literature in persuasive discourse.

SPE 581. RESEARCH (credits vary)
PR: Senior or graduate standing and CI.

SPE 583. SELECTED TOPICS (credits vary)
PR: Senior or graduate standing and CI.

SPE 585. DIRECTED READINGS (credits vary)
PR: Senior or graduate standing and CI.

SPE 593. LANGUAGE AND SPEECH FOR CHILDREN (5)
PR: SPE 203 or CI. A diagnostic study of language development; the analysis of speech behavior and oral language needs of children; techniques of speech improvement for children.

FOR GRADUATE STUDENTS ONLY

SPE 603. ADVANCED PHONETICS (5)
PR: SPE 503 or equivalent. Intensified training in close phonetic transcription. Work on dialects, intonation, distinctive feature theory and acoustic phonetics.

SPE 611. COMMUNICATION: ANALYSIS AND MEASUREMENT (5)
A study of selected modes of communication. Includes analysis of communication symbology, and presents the theory and application of selected instruments for measuring and producing speech.

SPE 612. SEMINAR IN SPEECH SCIENCE (5)
PR: SPE 511. To provide graduate students with an opportunity to interact with faculty and other students for the purpose of developing an in-depth understanding of a selected sub-area of Speech Science.

SPE 621. HISTORY AND THEORIES OF ORAL INTERPRETATION (5)
A study of the history, critical writings, uses, and developments of the art of oral interpretation, with analysis of the principles and practices.

SPE 661. CLASSICAL RHETORIC (5)
Greek and Roman theory and practice; emphasis on Aristotle, Plato, Cicero, and Quintilian, selected other readings.

SPE 662. MODERN RHETORICAL THEORY (5)
Studies of Eighteenth and Nineteenth Century theorists and the historical and cultural forces influencing them; relationship to contemporary theory and practice.

SPE 665. HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS (5)
Criticism of selected speeches and speakers of American public address, studied against a background of political, social and intellectual issues.
SPE 667. CONTEMPORARY RHETORICAL THEORY (5)
Studies in Speech and language; Speech as symbol, theories of meaning, the relation of language, thought, and action.
SPE 668. EXPERIMENTAL RESEARCH IN ORAL COMMUNICATION (5)
Critical examination of research design, procedures, and reporting of experimental studies in small group communication and persuasive discourse.
SPE 681. GRADUATE RESEARCH (1-5)
Directed study in special projects. Recommended only when material cannot be studied in scheduled courses.
SPE 683. SELECTED TOPICS IN SPEECH (1-5)
SPE 685. DIRECTED READINGS (1-5)
SPE 691. GRADUATE SEMINAR IN ORAL COMMUNICATION (5)
SPE 694. SUPERVISED COLLEGE SPEECH INSTRUCTION (5)
PR: Graduate standing and CI. Instruction and experience in teaching the University's basic Speech courses. Credit not applicable toward the graduate degree in Speech. May be repeated.

SPEECH PATHOLOGY AND AUDIOLOGY

Faculty: Webb, director; Bloch, Carlson, Daughtry, Diebold, Edwards, Fobair, Glover, Husband, Kasan, Kemp, Kinde, Knight, Kuffel, LaPorte, Logue, McClumpha, Morse, Ritterman, Seamens, Sexton, Wanderman.

SAI 201. SURVEY OF COMMUNICATION DISORDERS (3)
The nature and prevention of disorders of communication.
SAI 301. SPEECH PATHOLOGY (6)
PR: SAI 201 or CI. An introduction to speech and language disorders: major treatment approaches, etiologies and research findings.
SAI 302. AUDIOLOGY (6)
PR: SAI 201 or CI. An introduction to disorders of hearing: major treatment approaches, etiologies and research findings.
SAI 311. THE SCIENCE OF COMMUNICATION DISORDERS I (6)
PR: SAI 201 or CI. Structural bases of communication disorders.
SAI 312. THE SCIENCE OF COMMUNICATION DISORDERS II (6)
PR: SAI 201 or CI. Research approaches to the study of communication disorders.
SAI 313. THE SCIENCE OF COMMUNICATION DISORDERS III (6)
PR: SAI 201 or CI. Systems of analysis of communication disorders.
SAI 483. SELECTED READINGS (Topic) (4)
PR: CI. May be repeated three times for credit.
SAI 498. INTRODUCTION TO SPEECH PATHOLOGY & AUDIOLOGY PRACTICUM (1-12)
PR: SAI 301 or 302. Observation and participation in speech pathology and audiology practicum in the University clinical laboratory.
SAI 511. INSTRUMENTATION I (6)
PR: SAI 301. Calibration and instrumentation in speech pathology.
SAI 512. INSTRUMENTATION II (6)
PR: SAI 302. Calibration and instrumentation in audiology.
SAI 513. THE SCIENCE OF COMMUNICATION DISORDERS (6)
PR: SAI 301 and 302 or CI. Learning approaches useful in the management of speech and hearing impairments.
SAI 571. EVALUATION OF ORAL COMMUNICATION DISORDERS (6)
PR: SAI 301 or CI. Articulation, voice, language and stuttering disorders. Reporting, case management, referral and professional relationships.

SAI 572. AUDIOLOGY I (6)
PR: SAI 302 or CI. Evaluation of auditory and visual communication skills of the hearing impaired.

SAI 573. AUDIOLOGY II (6)

SAI 574. METHODS FOR ORAL COMMUNICATION DISORDERS (6)
PR: SAI 571 or CI. Classic and experimental approaches to and systems of evaluation of therapy in the management of speech impaired individuals.

SAI 575. MANAGEMENT OF COMMUNICATION DISORDERS (4)
PR: SAI 573, SAI 574 or CI. Coordination, planning, and structuring of programs for individuals with communications disorders.

SAI 576. COMMUNICATION DISORDERS: VOICE (4)
PR: SAI 574 or CI. Research and clinical literature on voice and voice disorders.

SAI 577. COMMUNICATION DISORDERS: ARTICULATION (4)
PR: SAI 574 or CI. Research and clinical literature on articulation and articulation disorders.

SAI 578. COMMUNICATION DISORDERS: STUTTERING (4)
PR: SAI 574 or CI. Research and clinical literature on stuttering and related disorders.

SAI 579. TECHNIQUES OF AUDITORY TRAINING (4)
PR: SAI 574 or CI. Auditory training of the hearing impaired.

SAI 580. COMMUNICATION DISORDERS: LANGUAGE (4)
PR: SAI 574 or CI. Research and clinical literature on language disorders.

SAI 581. SUPERVISED RESEARCH (1-12)
PR: CI.

SAI 583. SELECTED READINGS (Topic) (4), (4), (4)
PR: CI.

SAI 598. SPEECH PATHOLOGY & AUDIOLOGY PRACTICUM (1-12)
PR: CI. Practicum for clinical speech pathology and audiology.

FOR GRADUATE STUDENTS ONLY

SAI 620. CLEFT PALATE (4)
PR: CI. Research and clinical literature on cleft palate as related to speech pathology and audiology.

SAI 621. APHASIA (4)
PR: CI. Research and clinical literature on aphasia as related to speech pathology and audiology.

SAI 622. CEREBRAL PALSY (4)
PR: CI. Research and clinical literature on cerebral palsy as related to speech pathology and audiology.

SAI 623. DIALECT AS A COMMUNICATION DISORDER (4)
PR: CI. Research and clinical literature on dialect as a communication disorder.

SAI 673. CHILD AUDIOLOGY (4)
PR: CI. Survey of available procedures for the early identification of hearing loss with a pediatric population.

SAI 674. SPECIAL AUDITORY TESTS (4)
PR: CI. Knowledge and skills regarding speech reception, malingering, GSR and EEG systems of hearing testing.

SAI 675. TECHNIQUES OF SPEECH READING (4)
PR: CI. Knowledge and skill regarding methods of teaching lip reading to hard-of-hearing and deaf individuals.

SAI 676. HEARING DISORDERS (4)
PR: CI. The use, coordination and interpretation of hearing test data as regards diagnosis of hearing problems.

SAI 677. HEARING CONSERVATION (4)
PR: CI. Information regarding prevention of hearing loss in children and adults in industry, schools and other settings.

SAI 680. RESEARCH PROCEDURES IN SPEECH PATHOLOGY AND AUDIOLOGY (4)
PR: CI.

SAI 681. GRADUATE RESEARCH (1-12)
PR: CI. May be repeated for credit.

SAI 683. SELECTED READINGS (Topic) (4), (4), (4).
PR: CI.

SAI 698. PRACTICUM IN SPEECH PATHOLOGY (1-12)
PR: CI. Field experience in Speech Pathology and Audiology practicum. Conducted in community facilities for speech, hearing and language impaired individuals.

SAI 699. THESIS (1-9)

THEATRE ARTS

Faculty: Whaley, chairman; Belt, A. Golding, Kase, Lorenzen, Mecham, O'Sullivan, Phillips, C. H. Williams, Zachary.

TAR 203. INTRODUCTION TO THEATRE (3)
The nature of theatre as an art form. "How does a play mean?" Orientation and identificaton for the understanding of theatre. Open to all students and required of Theatre Arts majors.

TAR 211. FUNDAMENTALS OF STAGE PERFORMANCE (3)
Elementary principles and methods of stage performance with emphasis on inner creativity and physical expression.

TAR 212. STAGE MOVEMENT AND SPEECH (3)
PR: TAR 211 or CI. An exercise investigation of the nature and possibilities of human movement and sound in the theatre.

TAR 221. STAGECRAFT (3)
Basic design practice, color and drafting as applied to stage and television settings. Practical exercises in construction, painting, and mounting of scenery, with participation in performance productions.

TAR 252. STAGE MAKE-UP (1)
History, theory and practice of make-up for the stage.

TAR 303. MODERN THEATRE PRACTICE (5)
Initial readings and exercises in theatre; play analysis, performance, and technical theatre for non-theatre majors.

TAR 311. ACTING I (3)
PR: TAR 211, 212, or CI. Intermediate principles and methods of stage performance; mime, improvisation, speech, deportment, and characterization.

TAR 313. DIRECTING I (3)
PR: TAR 411. Staging the play, including script analysis, business, composition, movement and rhythm; rehearsal procedures and general organization. Lecture-laboratory using illustrative exercises and scene work.

TAR 322. STAGE PROPERTIES (3)
An investigation of historic architecture, decor, and furnishings for the theatre designer and director with practical exercises in duplication for the stage.

TAR 339. HISTORY OF THE THEATRE (5)
A survey of the chronological development of world theatre.

TAR 352 PERFORMANCE (1)
The study, rehearsal, and performance of major theatrical works. Open to all University students by audition on a credit or non-credit basis. Credit members subject to critical examination. May be repeated.

TAR 361. INTRODUCTION TO PUPPETRY (3)
Principles and methods of puppetry with an historical survey of major forms and practical problems with laboratory production.

TAR 411. ACTING II (3)
PR: TAR 311 or CI. Intermediate exercises in stage performance with special emphasis on problems on genre, style, and interpretation.

TAR 413. DIRECTING II (3)
PR: TAR 313. Problems in directing. Script interpretation, composition and movement for genre and period, coaching the actor, designing the *mise en scène.*

TAR 421. SCENE DESIGN I (3)
PR: TAR 221 or CI. Aesthetics and theories of stage design with an historical study of the development of the physical theatre and scenery. Practical design problems.

TAR 422. SCENE DESIGN II (3)
PR: TAR 421. Continuation of Scene Design.

TAR 423. COSTUME DESIGN I (3)
PR: TAR 221. Aesthetics, design, and techniques of stage costuming. A survey of fashion of the Western World and its interpretation as costume for the stage.

TAR 424. COSTUME DESIGN II (3)
PR: TAR 423. Continuation of Costume Design.

TAR 425. STAGE LIGHTING I (3)
PR: TAR 221. Theories and techniques of lighting as they relate to play production and theatre architecture.

TAR 426. STAGE LIGHTING II (3)
PR: TAR 425. Continuation of Stage Lighting I, with emphasis on lighting design.

TAR 429. TECHNICAL DIRECTING (3)
PR: TAR 421, 423, 425. Mounting the physical production. Lecture-lab using selected readings and practical problems in planning and producing the technical aspects of production.

TAR 431. THEATRE LITERATURE OF MYTH AND RITUAL: CLASSIC (3)
PR: TAR 339 or CI. The study of the development of dramatic form out of early religious rites and its full flowering in the works of Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, and Terrence.

TAR 432. THEATRE LITERATURE OF MYTH AND RITUAL: MEDIEVAL (3)
PR: TAR 339 or CI. The rebirth of drama in the ancient Christian Church and a study of the theatre literature which grew out of these early beginnings.

TAR 433. LITERATURE OF THE RENAISSANCE THEATRE (3)
PR: TAR 339 or CI. Historical study of Renaissance drama; readings from the plays of Machiavelli, Goldoni, Lope de Vega, Calderon, Marlowe, Jonson, Corneille, Moliere, and Racine.

TAR 435. LITERATURE OF THE EIGHTEENTH CENTURY THEATRE (3)
PR: TAR 339 or CI. A study of English and Continental theatre literature from the restoration of the English monarchy to the fall of Napoleon.

TAR 436. LITERATURE OF THE NINETEENTH CENTURY THEATRE (3)
PR: TAR 339 or CI. A study of theatre literature from the late Romanticism of Hugo to the "Free Theatre" movement of the continent.

TAR 437. LITERATURE OF THE MODERN AND CONTEMPORARY THEATRE (3)
PR: TAR 339 or CI. Readings of contemporary American, British, and Continental drama from Appolonaire to Albee.

TAR 443. PLAYWRITING I (3)
PR: TAR 303 or equivalent, 3 hours of creative writing, and CI. Basic dramatic writing practices and conventions. Evaluation of student work in conferences. Study of selected readings. May be repeated.

TAR 444. PLAYWRITING II(3)
PR: TAR 443. Continuation of Playwriting. May be repeated.

TAR 454. EXPERIMENTAL THEATRE PERFORMANCE (2)
PR: TAR 211, 212, 352 or CI. The study, rehearsal, and laboratory performance of new and experimental works for the theatre. May be repeated to a total of 6 credits.

TAR 471. THEATRE MANAGEMENT (3)
A study of commercial, community, and educational theatre operation with special emphasis on box office management, production costs, contracts, publicity, and public relations.

TAR 473. ADVANCED THEATRE MANAGEMENT (3)
PR: TAR 471 or CI. A study of production company organization and operation and of program selection and schedule.

TAR 481. DIRECTED STUDIES (1-6)
PR: CC. Independent studies in the various areas of Theatre Arts. Course of study and credits must be assigned prior to registration.

TAR 483. REPERTORY PERFORMANCE (1-9)
PR: CC. Advanced performance, theory and practice, with practical examination. All course work is by directed study and must relate to Department Productions.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

TAR 501. DRAMATIC THEORY AND CRITICISM I (3)
PR: TAR 339 and any 2 from TAR 431, 432, 433, 435, 436, 437, or CI. A study of basic critical writings on the theatre from Aristotle to the present.

TAR 502. DRAMATIC THEORY AND CRITICISM II (3)
PR: TAR 501 or CI. Continuation of Dramatic Theory and Criticism I.

TAR 511. STYLES OF ACTING (3)
PR: TAR 411 or CI. Exercises in the performance problems of the actor in pre-modern plays. May be repeated for a total of 9 hours.

TAR 515. PERFORMANCE PRODUCTION (3)
PR: TAR 413, majors only, CI. Actual production work in which members of the class prepare a play for project performance, teamed with designers from TAR 529.

TAR 529. TECHNICAL PRODUCTION (3)
PR: TAR 421-422, 423-424, 425-426, majors only, CI. Actual production work in which students design and execute scenery, costumes, properties, and lighting for project performance, teamed with playwrights and/or directors from TAR 515.

TAR 543. ADVANCED PLAYWRITING (3)
PR: TAR 443, 444, and CI. Concentration on the writing of the full length play form, with selected readings and analysis of dramatic structure. May be repeated.

TAR 544. WRITING FOR THE SCREEN (3)
PR: TAR 443, 444, and CI. Planning and writing of the film short and feature film from rought scenario to finished screenplay. Selected readings and critical analysis of screenplays by Agee, Bergman, Kurosawa, Hitchcock, etc. May be repeated.

TAR 552. ADVANCED PERFORMANCE (1)
PR: TAR 352 or CI. The study, rehearsal, and performance of major theatrical works. Admission by audition. May be repeated.

TAR 554. ADVANCED EXPERIMENTAL THEATRE PERFORMANCE (2)
PR: TAR 454 or CI. The study, rehearsal, and laboratory performance of new and experimental works for the theatre. Admission by audition. May be repeated for a total of 6 hours.

TAR 565. THEATRE FOR CHILDREN (4)
PR: CI. Theory of theatre for children, its history and objectives. Techniques of production from script selection and analysis to performance.

TAR 567. INFORMAL THEATRE WITH CHILDREN (4)
PR: CI. Theories and techniques of informal theatre with children. Focus is on the creative development of the child through the process of improvised theatre.

TAR 581. DIRECTED STUDIES (1-9)
PR: CC. Independent studies in the various areas of Theatre Arts. Course of study and credits must be assigned prior to registration.

VISUAL ARTS

Faculty: D. Saff, chairman; Bailey, Covington, Cox, L. Dietrich, A. Eaker, C. Fager, Gelinas, Goodman, Houk, Kronsnoble, Marsh, McCracken, Nickels, Pappas, Rampolla, Ringness, Strawn, Wujcik.

ART 201. VISUAL FUNDAMENTALS — DRAWING I (3)
Introduction to problems in drawing techniques and media.

ART 202. VISUAL FUNDAMENTALS — DESIGN I (3)
Introduction to problems primarily in two-dimensional design.

ART 301. VISUAL FUNDAMENTALS — DRAWING II (3)
PR: ART 201. Further exploration of drawing techniques and media.

ART 302. VISUAL FUNDAMENTALS — DESIGN II (3)
PR: ART 202. Further exploration of two and three-dimensional design, including letter forms as design elements.

ART 310. INTRODUCTION TO ART(3)
An introductory course for the student who does not intend to major in art.

ART 401. VISUAL FUNDAMENTALS — DRAWING III (3)
PR: ART 301. Continuation of ART 301. May be repeated.

ART 402. VISUAL FUNDAMENTALS — DESIGN III (3)
PR: ART 302. Continuation of ART 302. May be repeated.

ART 411. PAINTING TECHNIQUES (3)
PR : ART 401 and ART 402.

ART 421. SCULPTURE TECHNIQUES (3)
PR: ART 401 and ART 402.

ART 431. CERAMIC TECHNIQUES (3)
PR: ART 401 and ART 402.

ART 441. GRAPHIC TECHNIQUES (3)
PR: ART 401 and ART 402. Sec. 001 Intaglio, Sec. 002 Lithography, Sec. 003 Silkscreen.

ART 451. SPECIAL STUDIES IN MATERIALS AND CRAFTS (3)
PR: ART 401 and ART 402. Studies in plastics, fibers and metals.

ART 461. PHOTOGRAPHY I (3)
PR: ART 401 and ART 402 or CI. Consideration of basic technical and aesthetic factors involved in using black and white still photography as a vehicle for visual, artistic expression.

ART 462. PHOTOGRAPHY II (3)
PR: ART 461. Consideration of basic technical and aesthetic factors involved in using color still photography as a vehicle for visual, artistic expression.

ART 465. CINEMATOGRAPHY I (3)
PR: ART 461. Consideration of basic technical and aesthetic factors involved in using black and white silent motion pictures as a vehicle for visual, artistic expression.

ART 466. CINEMATOGRAPHY II (3)
PR: ART 465. Consideration of basic technical and aesthetic factors involved in using color and sound motion pictures as a vehicle for visual, artistic expression.

ART 470. PREHISTORIC AND ANCIENT ART (3)
A comprehensive study of Paleolithic, Neolithic, Egyptian, Assyrian and Mesopotamian painting, sculpture and architecture.

ART 471. GREEK AND ROMAN ART (3)
A comprehensive study of Aegean, Mycenaean, Etruscan, Greek and Roman painting, sculpture and architecture.

ART 472. MEDIEVAL ART (3)
A comprehensive study of early Christian, Byzantine and Medieval painting, sculpture, architecture and manuscript illumination.

ART 473. RENAISSANCE ART(3)
A comprehensive study of Renaissance and Mannerist painting, sculpture and architecture in Italy and Northern Europe.

ART 474. BAROQUE AND ROCOCO ART(3)
A comprehensive study of the painting, sculpture and architecture in France, Italy, Spain and the Netherlands in the seventeenth and early eighteenth centuries.

ART 475. NINETEENTH CENTURY ART (3)
A comprehensive study of nineteenth century painting, sculpture and architecture in France and England.

ART 476. TWENTIETH CENTURY ART(3)
A comprehensive study of painting, sculpture and architecture from Cezanne to the present in Europe and the United States.

ART 477. ORIENTAL ART(3)
An introduction to the history of the arts of China, Japan and other non-Western countries.

ART 481. DIRECTED STUDY (1-6)
PR: CC. Independent studies in the various areas of Visual Arts. Course of study and credits must be assigned prior to registration. May be repeated.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ART 501. DRAWING (3)
PR: ART 401 and ART 402. Advanced problems in various drawing techniques. Emphasis on individual creative expression. May be repeated.

ART 511. PAINTING (3)
PR: ART 411. Advanced problems in the various painting techniques. Emphasis on individual creative expression. May be repeated.

ART 521. SCULPTURE(3)
PR: ART 421. Advanced problems in the various techniques of sculpture. Emphasis on individual creative expression. May be repeated.

ART 531. CERAMICS (3)
PR: ART 431. Advanced problems in the various ceramic techniques, including throwing and glaze calculation. May be repeated.

ART 541. GRAPHICS (3)
PR: ART 441. Advanced problems in the various graphic techniques. Emphasis on individual creative expression. Sec. 001 Intaglio, Sec. 002 Lithography, Sec. 003 Silkscreen. May be repeated.

ART 561. PHOTOGRAPHY III (3)
PR: ART 462. Advanced work in color and black and white photography culminating in development of personal photographic artistic statement. May be repeated.

ART 565. CINEMATOGRAPHY III (3)
PR: ART 466. Advanced studio work using black and white, color and sound as technical and aesthetic factors in visual, artistic productions. May be repeated.

ART 569. PURE CINEMA AS AUTONOMOUS VISUAL EXPRESSION (3)
PR: ART 461 or CI. Consideration of historical developments in cinematography emphasizing uses of special technical and visual possibilities unique to the aesthetics of the film art.

ART 570. CRITICAL STUDIES IN ART HISTORY (3)
PR: CI. Specialized intensive studies in art history. Specific subject matter varies. To be announced at each course offering. May be repeated.

ART 573. SEMINAR IN THE HISTORY OF ART HISTORY (3)
PR: Four courses in Art History at the 400 level. An examination of the origins of art history as a discipline and the changing nature of art history from Vasari to the present.

ART 581. RESEARCH (1-6)
PR: CC. May be repeated.

FOR GRADUATE STUDENTS ONLY

ART 611. PAINTING (3)
PR: CI. May be repeated.

ART 621. SCULPTURE(3)
PR: CI. May be repeated.

ART 631. CERAMICS (3)
PR:. CI. May be repeated.

ART 641. GRAPHICS (3)
PR: CI. Sec. 001 Intaglio, Sec. 002 Lithography, Sec. 003 Silkscreen. May be repeated.

ART 661. PHOTOGRAPHY (3)
PR: CI. Advanced work in black and white and color photography. Emphasis upon personal/expressive use of the medium. May be repeated.
ART 665. CINEMATOGRAPHY (3)
PR: CI. Advanced development of technical and aesthetic factors in the visual, artistic production of films. May be repeated.
ART 670. ART HISTORY (3)
PR: CI. Special intensive studies in assigned areas. May be repeated.
ART 681. RESEARCH (1-6)
PR: CI. May be repeated.
ART 699. THESIS (1-6)
PR: CI. May be repeated.

ZOOLOGY

(See also Botany and Biology.)

ZOO 311. COMPARATIVE VERTEBRATE ANATOMY (6)
PR: BIO 201-203. Anatomy of selected vertebrate types emphasizing evolutionary trends. lec-lab. Qtr. 1.
ZOO 313. INTRODUCTORY INVERTEBRATE ZOOLOGY (5)
PR: BIO 201-203. An introduction to the major invertebrate groups, with emphasis on local forms. Field work will be required. lec-lab. Qtr. II.
ZOO 321. INTRODUCTORY ANIMAL PHYSIOLOGY (5)
PR: BIO 201-203. Functional histology and the primary functions of the organ systems will be stressed and related to the survival of the whole animal. The approach will be comparative and evolutionary and the emphasis will be on the vertebrates. lec-lab-disc. Qtr. III.
ZOO 411. HISTOLOGY (4)
PR: ZOO 311 and/or BIO 422. Comparative approach to the study of tissues and the relation of their structure and function. lec-lab. Qtr. I.
ZOO 415. INTRODUCTION TO ENTOMOLOGY (4)
PR: BIO 201-203. An introduction to general aspects of insect morphology, development, and classification. The identification of local forms will be emphasized. lec-lab. Qtr. IV.
ZOO 460. WILDLIFE AND FISH MANAGEMENT (3)
PR: BIO 201-203, BIO 445. An introduction to the principles of wildlife and fisheries management. Certain methods and techniques utilized in the management of exploited animal species will be introduced. Designed primarily for students interested in the wildlife and fish management profession. Qtr. II (odd numbered years).
ZOO 461. ANIMAL SOCIAL BEHAVIOR (5)
PR: CI. An introduction to comparative ethology, with emphasis on social behavior and the evolution of behavior. lec-lab. Qtr. I (odd numbered years).
ZOO 481. UNDERGRADUATE RESEARCH (1-6)
PR: CI. Individual investigation with faculty supervision. (S/U grade only.)
ZOO 483. SELECTED TOPICS IN ZOOLOGY (1-6)
PR: CI. Each topic is a program in directed study under supervision of a faculty member.
ZOO 491. SEMINAR IN ZOOLOGY (1)
PR: Upper division. May be repeated once. (S/U grade only.)

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ZOO 513. PARASITOLOGY (5)
PR: BIO 201-203. Fundamentals of animal parasitology and parasitism; the biology of selected animal parasites, including those of major importance to man. lec-lab. Qtr. II.

ZOO 514. AQUATIC ENTOMOLOGY (4)
PR: ZOO 415. Taxonomy, development, and ecology of aquatic insects with emphasis on local forms. lec-lab. Qtr. II (odd numbered years).

ZOO 515. LIMNOLOGY (4)
PR: CI. An introduction to the physical, chemical, and biological nature of fresh-water environments. lec-lab. Qtr. III.

ZOO 517. ORNITHOLOGY (4)
PR: BIO 445, ZOO 311, and CI. The biology of birds. Field trips emphasize the local avifauna. lec-lab. Qtr. II.

ZOO 518. MAMMALOGY (5)
PR: BIO 201-203 and CI. The biology of mammals, including systematics, ecology, natural history, and geographical distribution. lec-lab. Qtr. I.

ZOO 519. ICHTHYOLOGY (5)
PR: ZOO 311. Systematics of fishes, including major classification, comparative anatomy, embryology, and general distribution. lec-lab. Qtr. IV.

ZOO 520. BIOLOGY OF ECHINODERMS (5)
PR: ZOO 313, BIO 421. A study of the anatomy, physiology, and ecology of echinoderms. lec-lab. Qtr. I (even numbered years).

ZOO 521. COMPARATIVE PHYSIOLOGY (5)
PR: ZOO 321, BIO 421. The evolution of physiological mechanisms. lec-lab. Qtr. I.

ZOO 525. BIOLOGY OF THE AMPHIBIA (5)
PR: ZOO 311, BIO 445, and CI. Major aspects of amphibian biology emphasizing fossil history, evolutionary morphology, sensory physiology, life history, and reproductive behavior. lec-lab. Qtr. III (even numbered years).

ZOO 526. BIOLOGY OF THE REPTILIA (5)
PR: ZOO 311, BIO 445, and CI. Major aspects of reptilian biology, emphasizing fossil history, evolutionary morphology, sensory physiology, life history, and reproductive behavior. lec-lab. Qtr. III (odd numbered years).

ZOO 545. ZOOGEOGRAPHY (3)
PR: BIO 445. Zoogeographic principles and general patterns of terrestrial and marine distributions. Qtr. III.

ZOO 546. MARINE INVERTEBRATE ZOOLOGY I (5)
PR: BIO 201 and CI. The lower invertebrate phyla. Field trips to local intertidal and subtidal habitats required. lec-lab. Qtr. IV.

ZOO 547. MARINE INVERTEBRATE ZOOLOGY II(5)
PR: BIO 201 and CI. The higher invertebrate phyla. Field trips to local intertidal and subtidal habitats required. lec-lab. Qtr. IV.

ZOO 556. TERRESTRIAL ANIMAL ECOLOGY (4)
PR: BIO 445. Field and laboratory investigations of the basic principles of ecology as applied to terrestrial animals. lec-lab. Qtr. III.

ZOO 557. MARINE ANIMAL ECOLOGY (5)
PR: BIO 445 and ZOO 313. Investigations of energy flow, biogeochemical cycles and community structure in marine environments. lec-lab. Qtr. III.

ZOO 562. MECHANISMS OF ANIMAL BEHAVIOR (5)
PR: BIO 201-203, CHM 331-333, and CI. A comparative approach to communication and orientation in animals including homing behavior and biological clocks. lec-lab. Qtr. I.

FOR GRADUATE STUDENTS ONLY

ZOO 613. ADVANCED INVERTEBRATE ZOOLOGY (5)
PR: ZOO 313. or CI. An advanced zoological study of selected invertebrate groups with emphasis on regionally significant forms. Laboratory and field work required. lec-lab.

ZOO 614. PLANKTON ECOLOGY (4)
PR: ZOO 313 or ZOO 546 and 547. The relationships and distributions of planktonic organisms as affected by their physical, chemical, and biological environments. lec-lab.

ZOO 615. PLANKTON SYSTEMATICS (4)
PR: ZOO 313 or ZOO 546 and 547. The identification of plankton from different depth zones in the sea and from various oceanic regions. lec-lab.
ZOO 617. SYSTEMATIC ORNITHOLOGY (3)
PR: ZOO 517 and CI. The classification and distribution of the birds of the world. lec-lab.
ZOO 618. ADVANCED MAMMALOGY (4)
PR: ZOO 518. Important literature and developments in mammalogy. Students will undertake individual research problems. lec-lab.
ZOO 619. ADVANCED ICHTHYOLOGY (5)
PR: CI. Systematic ichthyology with particular reference to the important literature together with a historical introduction. Laboratory devoted to completion of a systematic problem by each student. lec-lab.
ZOO 620. FIELD ORNITHOLOGY (3)
PR: ZOO 517 and CI. The use of local population in the study of avian biology. lec-lab.
ZOO 621. PHYSIOLOGICAL ECOLOGY (5)
PR: CI. Effect of environmental factors on animal function at the cellular and organ system level with emphasis on control and mechanisms. lec-lab.
ZOO 622. INVERTEBRATE PHYSIOLOGY (3)
PR: CI. A research-oriented study of selected topics in invertebrate physiology. Laboratory and field work required. lec-lab.
ZOO 623. PHYSIOLOGY OF MARINE ANIMALS (5)
PR: BIO 421. A study of the physiological mechanisms of animals in the marine environment. lec-lab.
ZOO 624. COMPARATIVE ENDOCRINOLOGY (5)
PR: BIO 521 or CI. An analysis of the similarities and differences between the hormonal mechanisms of mammals, other vertebrates, and invertebrates. lec-lab.
ZOO 626. POPULATION ECOLOGY (4)
PR: BIO 616 or CI. Application of new methods of applied mathematics, computer simulation, and formulation of models to describe biological populations. lec-lab.
ZOO 630. INVERTEBRATE REPRODUCTION AND DEVELOPMENT (5)
PR: ZOO 313 and CI. An analysis of modes of reproduction and patterns of larval development in major invertebrate phyla. Emphasis is on classical descriptive embryology, modern mariculture techniques, and larval ecology. lec-lab.
ZOO 633. PHYSIOLOGY OF FISHES (4)
PR: ZOO 521 or CI. An analysis of the physiological mechanisms of metabolism and integration in fishes with emphasis on marine forms. lec-lab.
ZOO 661. ADVANCED ANIMAL BEHAVIOR(4)
PR: ZOO 461 and CI. Recent advances in comparative animal behavior (ethology). lec-lab.
ZOO 681. GRADUATE RESEARCH (1-9)
PR: CI. Directed research on selected topics. May be repeated (S/U grade only)
ZOO 683. SELECTED TOPICS IN ZOOLOGY (1-6)
PR:CI.
ZOO 691. GRADUATE SEMINAR IN ZOOLOGY (1)
PR: Graduate standing. May be repeated. (S/U grade only)
ZOO 699. M.A. THESIS (1-9)
PR: CI. May be repeated to a maximum of 9 credits. (S/U grade only)

GLOSSARY

An explanation of terms with which the reader may not be familiar.

Academic Year: Beginning of Quarter I to end of Quarter IV.

Admission: Acceptance of a student for enrollment.

Class Standing Codes:
1. Freshman
2. Sophomore
3. Junior
4. Senior
5. Baccalaureate degree holder
6. Students in a Graduate Program
7. Graduate degree holder
8. Students in a Doctoral Program
9. Doctoral degree holder

College: Unit within the University responsible for providing instruction in a given area of knowledge

Continuing Education Program: Courses taken off-campus not applicable toward graduation unless approved by the degree certifying area.

Course: A unit of instruction in a particular subject; usually one quarter in length.

Curriculum: A group of courses, forming a major field of study, required for a degree.

Elective: Any of a number of courses from which a student is allowed to select. A *free elective* is one not required in the student's curriculum.

Faculty: Persons in teaching and research; the instructional staff of the university.

Former Student Returning: A student who applied and enrolled for USF (not Continuing Education) *courses* and had been absent for two quarters since his last enrollment.

Full-Time Fee Student: A student taking seven quarter hours of credit, graduate, or undergraduate, or enrolled in a "work period" under the Cooperative Education Program.

Full-Time Student: A student taking twelve quarter hours of credit as an undergraduate; nine hours of credit as a graduate or enrolled on a "work period" under the Cooperative Education program.

Grade Point Ratio (GPR): Ratio of grade points to quarter hours attempted.

Graduate Program: A course of study leading to an advanced degree.

Hour, Credit Hour, Quarter Hour: Unit of academic work. The number of quarter hours specified for a course is usually equal to the number of times the class meets each week.

Lower Level: A general term applying to courses and programs offered at the freshman and sophomore levels.

Major: Student's academic area of concentration or field specialization.

Matriculation: The first registration following admission as a classified student.

Prerequisite: Prior study or authorization required to qualify for enrollment in a course.

Quarter: Period of instruction into which the academic year is divided.

Registration: Process of enrolling for classes.

Term: Period of instruction into which the academic year is divided (i.e., Quarter).

Upper Level: A general term applying to courses and programs offered at the junior and senior levels.

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