several coordinators. The departments are responsible for the professional program in engineering. Specific positions are responsible for the special programs in Engineering Science and Engineering Technology. Each department is responsible for programs, faculty, laboratories and students assigned to it.

**Electrical and Electronic Systems**

This department offers study in all areas fundamental to Electrical Engineering and the electrical sciences: circuit analysis and design, electronics, communications, electromagnetics, control, solid state, systems analysis, electronic computer design, software engineering, etc. Basic concepts are augmented with well-equipped laboratories in networks, electronics, automatic control, digital systems, electromechanics, microwave techniques and communications. In addition, a small general purpose computer facility, a microprocessor laboratory, and a microelectronics fabrication laboratory are available to undergraduate and graduate students. The department administers the Electrical Option of the Bachelor of Science in Engineering (B.S.E.) degree program, the Master of Engineering (M.E.) degree program in Electrical Engineering, and the area of Electrical Engineering for the Master of Science in Engineering (M.S.E.) degree. This department also administers the bachelor's level Computer Science Option and the master's level Computer Science Concentration in Engineering Science. The department administers the Ph.D. program.

**Energy Conversion and Mechanical Design**

This department offers study pertinent to the analysis and design of machines and systems needed by our modern society, through courses dealing with the classical Mechanical and Chemical Engineering subjects of lubrication, vibration and fatigue analysis, machine design, thermodynamics, heat transfer, environmental control, transport phenomena and reactor dynamics. In addition, it provides instruction in other fields of increased importance to the engineers of the future. Some of these fields are computer simulation, instrumentation, automatic control, power utilization, acoustics, and nuclear processes and the design and evaluation of innovative systems for energy utilization and pollution control. This department administers the Chemical and the Mechanical Options of the Bachelor of Science in Engineering (B.S.E.) degree program, as well as the area of Mechanical and Chemical Engineering for the Master of Science in Engineering (M.S.E.) degree. The department administers the Ph.D. program.

**Industrial Systems**

This department offers study pertinent to the design, evaluation and operation of a variety of industrial systems ranging from service areas, such as data processing, inventory control, data processing systems design, statistics and operations research models. The department administers the Industrial Option of the Bachelor of Science in Engineering (B.S.E.) degree program, the Master of Engineering (M.E.), and the Master of Science in Engineering (M.S.E.) degree programs in the area of Industrial Engineering. The department administers the Ph.D. program. The department also instructs students in Computer Service courses offered by the University of South Florida.

**Structures, Materials, and Fluids**

This department offers course work and study pertinent to Civil Engineering, Engineering Mechanics, and Materials Science. Topics included are structural analysis, design and optimization; metals, polymers, ceramics; solid and fluid mechanics, stress analysis, vibrations, continuum mechanics, aerodynamics, gas dynamics, wave propagation, numerical methods; water resources, waste treatment, environmental engineering, and hydrospace engineering. The department administers the Structures, Materials and Fluids option of the Bachelor of Science in Engineering (B.S.E.) degree program, and offers several concentrations within this option. It also administers the area of Structures, Materials and Fluids for the Master of Science in Engineering (M.S.E.) degree. The department administers the Ph.D. program.

**Engineering Core**

Both the four-year and five-year curricula of the College of Engineering are founded on a common core of course work which is required of all students. This course work is designed to give each student a thorough foundation of knowledge on which specialization studies and a professional career can be based. Emphasis is placed on four key elements: a solid foundation in science and mathematics, a basic understanding in all major engineering disciplines, familiarity with Social Science and Humanities — to develop the whole individual, and good communication skills.

This common foundation of 152 minimum quarter hours breaks down as follows:

- **Social Science and Humanities Core**
  - Core (including communication skills) 47 credit hrs min
  - Mathematics and Science Core 49 credit hrs min
  - Engineering Core 56 credit hrs min

Special requirements exist for the Chemical option. Students selecting this field should make sure they familiarize themselves with these. Detailed information can be obtained from the Energy Conversion and Mechanical Design department or the College's Advising Office.

1. **Social Science and Humanities Core Requirements (47 credit hours minimum)**

   Prospective Engineering majors must take 9 credit hours of Freshman English (ENC 1102, 1135, 1168).

   An additional 38 credit hours of course work is required in this core area, of which at least 34 hours must be selected from the current "Approved Social Science and Humanities Courses" list for Engineering and Engineering Science students. A minimum of 12 credit hours of this course work must be of 2000 level or higher. At least 8 credit hours must be taken in each the Humanities/Fine Arts area and the Behavioral and Social Sciences area (to meet the University's General Distribution Requirements). It is recommended that the student pursue specific subject areas to some depth, since this develops areas of knowledge and interests which aid fuller development of the individual and later assist in relating a professional career to non-technical environments and situations.

   It is desirable that at least 35 hours of this course work be taken in the first two years. Students are responsible for checking with their advisers to be sure that the specific courses they are taking meet the requirements of the Bachelor of Science in Engineering degree program.

   Students who transfer from a State of Florida community college with an Associate of Arts degree and who have met that college's General Education Requirement will normally find that their General Education course work satisfies the major portion—but not all—of the Social Science and Humanities Core requirement.

   Credit by Examination can be obtained for some of this course work. CLEP General Examination credit acceptable to the University is accepted for the areas of English Composition, Humanities and Social Science. Credit for CLEP Subject Examinations and CEEB Advanced Placement Tests can be accepted when the subject covered is recognized to be equivalent to USF course(s) on the "Approved Social Science and Humanities Courses" list. Questions in this area should be addressed to the Coordinator of Engineering Advising in the Dean's Office.

2. **Mathematics and Science Core Requirements (49 credit hours minimum)**

   The student with a satisfactory high school preparation must take 49 credit hours of mathematics and science course work. (Some credit towards this core requirement can be obtained by passing
successful completion of a program consisting of the required three courses described above, and an additional 49 credit hours of course work from the College's Advising Office.

Students whose high school preparation is insufficient to enter the Calculus for Engineers and/or the General Chemistry sequence are required to take supplementary mathematical (algebra and trigonometry) and/or chemical foundation course work.

3. Engineering Core Requirements (56 credit hours minimum)

The prospective engineering major must take 56 credit hours of engineering foundation course work drawn from the major disciplines. This course work is designed to equip the student with a sound technical foundation for later more advanced specialized course work and the eventual formation of professional judgment.

This course work includes introductory studies in such areas as engineering analysis and computation, electrical engineering principles, thermodynamics, statics, dynamics and fluids, and properties of materials.

All but 10 credit hours of the engineering core are common to all areas of specialization (option) of the Bachelor of Science in Engineering Program. The remaining 10 credit hours of course work must be chosen with concurrence of the departmental adviser to fit the option selection of the student. Details on this selection are available in the departmental office of the option selected, or in the College's Advising Office.

FOUR-YEAR PROGRAM—BACHELOR OF SCIENCE IN ENGINEERING DEGREE (EGU)

The Bachelor of Science in Engineering degree is awarded upon successful completion of a program consisting of the required three areas of core course work—minimum of 152 credit hours—which is described above, and an additional 49 credit hours of course work in a designated area of specialization (option). Details covering the options are available on request from the responsible department, or from the College's Advising Office.

Options are offered in the following disciplines of engineering.

1. General Option (49 credit hours)

All professional departments may offer the general option which consists of 49 credit hours of course work individually arranged by the student with the approval of the student's adviser. This option is used where a student wishes to deviate from a prescribed disciplinary option utilizing course work from several different disciplines both within and without the College of Engineering.

Pre-medical students follow this option. It accommodates up to 49 hrs of special pre-med course work (Biology, Organic Chemistry, etc.) selected by student and adviser to meet normal admissions requirements of medical schools.

Pre-law students find this option permits a strong technical and legal academic preparation.

2. Option in Chemical (49 credit hours)

Students pursuing the Chemical Option take designated, specialized course work in advanced chemistry, thermodynamics, energy conversion, separation processes, transport phenomena, heat and mass transfer, reacting systems, process control systems, as well as approximately 15 credit hours of chemistry and technical electives. Students must also satisfactorily complete a design and/or case study as part of their program. Special characteristics of the chemical option make it imperative that students retain constant close contact with their adviser.

Students completing this option normally pursue careers in chemical process industries, in public service (regulatory, planning and/or environmental), or in consulting or research. Products covered include paper and pulp, petroleum and petro-chemicals, polymers and fibers, synthetics, pharmaceuticals, foods, fertilizers, etc. Such modern societal problems as controlling pollution, handling wastes, advancing medical technology, providing food and energy more efficiently, etc. depend on the chemical engineer, among others, for their solutions.

3. Option in Electrical (49 credit hours)

Students pursuing the Electrical Option take designated, specialized course work in network analysis, electronics, communications, electromagnetic theory, linear system and control system analysis, and microelectronics. This course work is supplemented by electives in logic, sequential circuits, digital system design and microprocessors; distributed networks and UHF principles; and/or electromechanics and power system analysis. Students must also complete a Design Project prior to graduation.

Students completing this option normally pursue industrial careers in the power, electrical, electronic, or information industries or in related governmental laboratories and public service agencies. The electrical graduate may apply his/her knowledge to such diverse areas as television, communications, remote guidance, sensing (of people, vehicles, weather, crops, etc.), automation, computer and information systems, electric power generation and transmission, electrically propelled transportation, etc. The graduate may do this by performing needed engineering functions related to the research and development (often requires also an advanced degree), design, production, operation, sales, or management of these products/services.

4. Option in Industrial (49 credit hours)

Students pursuing the Industrial Option take designated, specialized course work in industrial processes and production control; engineering valuation; network modeling, computer simulation and systems analysis; operations research; design of experiments and engineering statistics. This course work is supplemented by courses in production and facilities design; computer languages, systems, and projects; and quality control.

Students completing this option enter careers in a broad range of industries, businesses and governmental and public service areas. Their preparation covers activities common to all types of organizations; planning, analysis, implementation, and evaluation. In addition to traditional career opportunities in production and process areas of high-volume industries, the industrial graduate nowadays finds challenging careers in hospitals, transportation and service industries, and in municipal, county, state and federal administration.

5. Option in Mechanical (49 credit hours)

Students pursuing the Mechanical Option take designated, specialized course work in thermodynamics and heat transfer; physical measurements and energy conversion; machine analysis and design; mechanical design and controls; and fluid machinery. This is supplemented by elective coursework in such areas as power plant analysis, nuclear and reactor engineering; refrigeration and air conditioning; acoustics; lubrication; and vibration and balancing.

Students completing this option normally enter careers as design, consulting, research and development, or sales engineers in a wide range of industries which either turn out mechanical products or rely on mechanical machines, devices and systems for their production. Thus, mechanical graduates follow careers in such
industries as vehicles and transportation, energy generation and conversion, instrumentation and automatic control, machinery, and heating and refrigeration. In industries which process their products mechanically (foods, some chemical, paper, waste, etc.) mechanical graduates also have career opportunities as plant or construction engineers, being responsible for the installation, operation, and maintenance of major mechanical system complexes.

6. Option in Structures, Materials and Fluids
(49 credit hours)

Students pursuing the Structures, Materials and Fluids Option take designated coursework in solid mechanics, stress analysis, and structures; materials; fluid mechanics; engineering analysis applied to this discipline and a senior research/design project. This course work is supplemented by courses in one of the following areas of concentration, plus electives. The areas of Structural Engineering and Water Resources are components of Civil Engineering.


b. Structural Engineering concentration—courses in structural analysis design, composite structures, connecting matrix and computer techniques.

c. Water Resources concentration (designated by Board of Regents as a "Program of Distinction")—courses in water resources, hydrology, and urban water systems.

Students completing this option enter careers as engineers in the civil, structural, sanitary, environmental, hydraulics, materials, engineering mechanics, aeronautical, etc. disciplines. All of these fields share the need for knowledge in the areas of engineering mechanics civil engineering, and materials science. Through choice of the proper area of concentration the student has the opportunity to channel his academic studies specifically towards his career choice. Structures, Materials and Fluids students commence their engineering careers in either industry, with engineering consulting firms, or in public service at the federal, state or local level. Initial assignments include planning, design, and implementation of water resources, transportation and housing systems; regional planning, design and management for abatement of air, water and solid waste pollution problems; research and development of new materials, material processes and testing procedures; design of bridges, single and multistory structures; supervision of construction projects.

FIVE-YEAR PROGRAM—MASTER OF SCIENCE IN ENGINEERING DEGREE (EGG)

This program consists of a minimum of 152 credit hours of core course material plus 94 credit hours of specialization including a maximum of 18 hours of research or design project. Students are admitted to this program 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 degree and the Bachelor of Science in Engineering degree 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 the full five years, the baccalaureate can be awarded provided the requirements for that degree have been met. 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

1. Humanities and Social Science Requirements

While the engineering undergraduate student is expected to complete certain requirements during the first two years of study which are directed toward the humanities and social sciences, and which are fulfilled by the completion of the Distribution requirements of 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, but must also be a person who can understand, adjust and contribute to the social environment. The undergraduate engineering program at the University requires, in addition to the minimum Distribution requirement of the University, an additional 22 credit hours of Humanities and Social Science coursework.

Florida community college transfer students who have completed their General Education Requirements will not have to meet USF's General Distribution requirements. However, as is the case with USF students who have to take more than the minimum Distribution Requirements coursework in this area, the community college transfer student must expect to take some additional carefully selected upper level coursework in this area to meet the education standards for professional engineering programs in the SOCIAL SCIENCE AND HUMANITIES area.

2. 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. The examination will be administered by the faculty of the University's English program.

Students evidencing an English deficiency will be required to initiate the necessary corrective programs, with the assistance of their advisers. It is recognized that such deficiencies can exist even though a student has met the University's minimum English requirements. Correction of any deficiency must commence the term after a student has been notified and must be completed prior to recommendation of the student for graduation by the faculty of the College.

3. 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 and problem solving 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.

4. 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, as well as a minimum 2.0 average for all Engineering course work attempted of 3000 level or above. 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 are recommended and have been prepared by the student's adviser and approved by the academic committee of the College.

Key courses, including but not limited to, Freshman English, Calculus, Physics, and Engineering courses in the student's area of specialization, must be passed with a grade of "C" or better before taking the next course in the sequence.

Students pursuing an engineering degree program are expected to take their courses on a graded (ABCDF) basis. (Exceptions are required courses not available on a graded basis.)

Students receiving "F" grades must remove this deficiency at the first opportunity in accordance with a written agreement between student and instructor.

Continuation in the program after 3 withdrawals and/or failures in a specific engineering course of 3000 level or higher, requires specific approval from the college.

5. 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 engineering coursework of 3000 level or above attempted while registered in the College. Students attempting but not completing their master's requirements may elect to request the awarding of the bachelor's degree, provided they have met that degree's requirements.

Effective September, 1979, the College requires that a student complete the Mathematics and Science Core. Engineering Core, and specialization requirements for the baccalaureate degree in seven years. Deviations require specific prior permission from the Dean of the College.

In addition to the College requirements listed above, degree candidates are expected to meet applicable special departmental requirements.

The College of Engineering offers three professionally oriented programs leading to a degree at the master's level. These are the post-baccalaureate Master of Science in Engineering degree program, Master of Engineering degree program, and the Five-Year Master of Science in Engineering degree program. Each professional 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 of the University and those 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 DEGREE (EGP)

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 supplemental remedial work in engineering will be necessary.

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

3. Those who do not meet the regular entrance requirements may attempt a trial program as a Special (non-degree seeking) Student. Up to 18 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 the departmental adviser a list of courses and performance criteria for 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 the student will be placed on a probationary status and must obtain a directed program from his/her adviser approved by the Dean, prior to continuing 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 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 degree requirements. The course titled "Masters Thesis" in the student's department is to be used.

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 the course titled "Masters Thesis" in the student's department each quarter the staff, facilities, and laboratories of the University are used whether or not the student has accumulated the maximum credit allowed for research or design toward the degree. All students must register for 3 credits of the course titled "Masters Thesis" in the student's department during the quarter in which they submit their thesis or project report.

MASTER OF ENGINEERING DEGREE PROGRAM (EGM)

This non-thesis degree 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 degree program. It is 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 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 the student will be placed on probationary status and must obtain a directed program from his/her adviser 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 and take a comprehensive examination during the quarter in which they apply for the degree. This credit may not be used as part of the course work requirement. Contact Department for details.

THE ENGINEERING FIVE-YEAR MASTER'S DEGREE PROGRAM (EGG)

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.

Students apply for admission to this program through their department. They should consult their adviser when they need additional information.

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 in the courses in the student's graduate course of study. A student in the Five-Year Program who fails to maintain the required academic standards 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 4000 level project course work of appropriate departmental prefix and up to 9 credits of the course titled "Masters Thesis" in the student's department may be used to fulfill degree requirements.
4. If a thesis is submitted it must be in accordance with the Handbook for Graduate Theses and Dissertations, Universitv 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 written or oral prior to awarding the degree. These examinations are arranged and administered by the student's graduate committee.

APPLIED SCIENCE (ENGINEERING)

Degree programs in Engineering Science are offered by the College of Engineering which are designed for students who do not wish to pursue the professionally oriented degree programs in engineering but who wish to obtain a strong technical background coupled with other interests.

Engineering Science is an applied science discipline which relates to new and innovative areas of endeavor at the frontiers of technological development and research. It represents a marriage between basic science and its utilization in such varied fields as computer science, biology, social and environmental sciences, applied mathematics, bio-medical engineering, ocean engineering, and energetics. The common denominator to this wide range of subjects is a strong foundation in rigorous scientific and engineering principles and practices.

This training provides a most desirable background for graduate study in the areas of concentration mentioned and in other professional areas such as law, medicine, and business.

Preparation for Engineering Science

Students anticipating pursuit of studies in Engineering Science should follow the guidelines given for Engineering in this catalog when planning their high school and/or community college studies.

Admission to Engineering Science

Admissions requirements and procedures are the same as for Engineering.

Engineering Science Advising

Students pursuing a course of study in Engineering Science are assigned to an adviser who is familiar with the requirements of this program and whose special interests match the student's specialization objectives. Comments and requirements spelled out in the section on Engineering Advising in this catalog are applicable to this program.

FOUR-YEAR PROGRAM—BACHELOR OF SCIENCE IN ENGINEERING SCIENCE DEGREE (EGC)

The College of Engineering offers a curriculum leading to the Bachelor of Science in Engineering Science degree which stresses the
scientific aspects of engineering. The curriculum is a four year program with a minimum requirement of 180 quarter hours, and it provides the student with an unusual depth of study in mathematics, science, and engineering without limiting the opportunities to broaden one's education in humanities and social sciences. The exact composition of the curriculum followed by a given student is determined by the student with the advice and consent of the academic adviser, and based on the option chosen.

An option in Computer Science provides a continuum of training and knowledge in the foundations of information processing. Courses range from studies in software and programming, data structures, operating systems, and systems analysis to the analysis of computer architecture and organization, logic design, automata theory, hardware simulation, microprocessors and reliability considerations. Finally a number of specialized electives allows concentration on applications of computers to a variety of activities such as scientific computation, computer-aided design, business systems, biomedical research, and pattern recognition.

Graduates from this program follow fruitful careers in either scientific or business applications of computers. They are often involved in the systems level definition of information processing complexes for both manufacturers of computers and for users. A wide and expanding variety of design and applications opportunities characterize this field. This is the reason for requiring a broad foundation in applied mathematics and the physical sciences, and also to develop communications abilities and clear perceptions in the social sciences and the humanities. Research and development opportunities as a computer scientist, often following graduate training, are present in the areas of artificial intelligence, software engineering, digital data communications, data base management, fault-tolerant computing and testing, microprogramming and simulation.

This program is administered through the Coordinator for Computer Science Program, Department of Electrical and Electronic Systems.

An option in Applied Mathematics covers applied analytical techniques to establish a more fundamental understanding of basic physical phenomena leading to engineering applications. Areas of mathematics considered from an applied viewpoint include modern algebra, theory of algorithms, classical advanced calculus, complex variables, probability and statistics, numerical procedures, approximation theory, operations research, and applied mathematical programming. The use of computers is emphasized. This program provides the student with an opportunity that is not available in either a pure mathematics curriculum or in a design-oriented engineering program.

An option in Environmental Science is designed for students who desire to develop the broad interdisciplinary background necessary for careers in environmental protection with industry and government. Training is provided in the sociological sciences of politics, government, and social science; the communication arts (speaking and writing); and the scientific and technological aspects of air, water, and noise pollution.

Other options are designed for such areas as Ocean and Energetics.

### Baccalaureate Requirements (minimum 180 credit hours)

The Bachelor of Science in Engineering Science degree program requires a strong foundation in mathematics and science, foundation course work in the humanities, social sciences, and other non-technical areas, a basic knowledge of engineering fundamentals, and culminates in approximately one year of specialized—often interdisciplinary—studies. These basic requirements are further listed below.

1. Humanities, social science, and other non-technical areas requirement (42)
2. Mathematics and science requirements (45)
3. Engineering Science core requirement (41)
4. Specialization requirement (52)

(There may be minor variations from these numbers in a defined option.)

### Other Requirements for Engineering Science

The English, Mathematics, Continuation, and Graduation requirements for the Engineering degree program are applicable to the Engineering degree program.

Students with a Computer Science option will not be given credit towards their degree for Computer Service Courses taken without prior consent of their adviser.

### FIVE-YEAR PROGRAM—MASTER OF SCIENCE IN ENGINEERING SCIENCE DEGREE (EGF)

Students who at the beginning of their senior year are clearly interested in graduate study are invited to pursue a five-year program of study leading simultaneously to the Bachelor of Science in Engineering Science and Master of Science in Engineering Science degrees. The keys to this program are:

1. A two-year research project extending through the fourth and fifth years.
2. The opportunity of taking graduate courses during the fourth year and deferring the taking of senior courses to the fifth year. The requirements for the combined degrees do not differ from those for the two degrees pursued separately.
3. Students apply for admission to this program through their adviser, who should be consulted when additional information is needed. General requirements include:
   1. Senior standing (135 credits) with at least 24 credits completed at the University of South Florida in the engineering science curriculum.
   2. A minimum score of 1000 on the verbal and quantitative portions of the Graduate Record Examination is expected.
   3. Above-average performance in the engineering science program is expected.

Students following the Computer Science option can obtain through this program the deeper specialization required of those engaged in advanced research and development.

### POST-BACCALAUREATE—MASTER OF SCIENCE IN ENGINEERING SCIENCE DEGREE (EGC)

The admission and program requirements (minimum 45 credit hours) for this degree are essentially the same as those itemized for the Engineering Master's Degree Programs, page 93.

To meet the student's specific Engineering Science objectives, each department, or the College, may elect to award this degree dependent on prior arrangement with the student.

Students entering the Computer Science concentration of this program without a baccalaureate degree in Computer Science may have to take supplemental remedial coursework.

Students with interests in Bio-medical engineering should have a well above average undergraduate preparation in one of the traditional fields of engineering.

### DOCTOR OF PHILOSOPHY DEGREE IN ENGINEERING SCIENCE (EGC)

Effective January, 1977, the College of Engineering was authorized by the Board of Regents to continue the Doctor of Philosophy degree in Engineering Science, transferred from Florida State University. Prospective students interested in pursuing this program should contact the Office of the Dean, College of Engineering, University of South Florida.
Engineering Technology

The College of Engineering offers a program leading to the degree of Bachelor of Engineering Technology to serve educational needs in engineering-related areas. The program normally provides for two years (90 min. credit hours) of study at the University of South Florida following two years (90 credit hours) of successful study in an engineering technology program which has lead to an Associate of Science degree. Many programs of the State System of Community Colleges uniquely mate with this program.

BACHELOR OF ENGINEERING TECHNOLOGY (ETK)

Upon completion of their full four years of study leading to the award of the Bachelor of Engineering Technology degree, students will have gained a well-rounded background concentrated in the following areas: Engineering Technology, Mathematics and Science, Liberal Arts and Social Science, and Management and related areas (including Computers). A student who has completed this program should be adequately prepared to assume career responsibilities in technical, technical supervisory, or technical executive positions. Prospective students should note, however, that this program is not intended to be an engineering program. Rather, its function is to bridge the gap between design or research professional engineers, technicians, and management. It is for this reason that the program consists of a balance of course work in technical, management, and Liberal Arts and Social Science areas.

A typical student pursues the bulk of the Engineering Technology course work, together with much of the mathematics and science course work within the framework of a junior college Associate of Science degree engineering technology program. Most of the Liberal Arts and Social Science course work, Management and Computer-oriented studies, and some additional engineering technology course work is taken by the student at USF during the junior and senior year. The typical four years of study thus exhibit approximately the following course work distribution (in credit hours):

| Engineering Technology                  | 80 |
| Management & related studies            | 30 |
| Liberal Arts, Social Science and Electives | 48 |
| Mathematics and Science                 | 22 |
| Total                                    | 180 |

Specific students' programs may deviate from this balance to some extent due to the differences in the students' first two years' program contents.

At USF a portion of each student's program may be used tor one of the areas of concentration listed below.

- Computer Systems Technology
- Construction Technology
- Electronics Technology
- Industrial Engineering Technology
- Management Engineering Technology

These areas are designed to complement the technical work received at the community colleges and need not necessarily be in the same field in which the A.S. degree is awarded.

Students entering this program will have 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.

Admission

In general, students are expected to have successfully completed an Associate of Science degree in Engineering Technology at a community college or to have accomplished equivalent work. Normally, the student should have completed a minimum of mathematics through applied integral calculus and a non-calculus physics sequence. If the student's performance in his community college program indicates a reasonable probability of success in the Bachelor of Engineering Technology program, the student will be admitted to USF. Students are required to complete a minimum of 90 additional quarter hours to receive the Bachelor of Engineering Technology degree. Because this evaluation procedure is unique to the Bachelor of Engineering Technology program, the application for admission should clearly indicate the desired major field as "Engineering Technology." This application should be filed through the Office of Admissions.

Students who are currently following a program other than that of an Associate of Science degree in Engineering Technology at a community college and who are interested in pursuit of studies in this field should contact the College of Engineering for further guidance.

Further information is available from:
- Director of Engineering Technology
  USF St. Petersburg Campus
  830 First Street, South
  St. Petersburg, Florida 33701
- Director of Engineering Technology
  College of Engineering
  University of South Florida
  Tampa, Florida 33620

Other Requirements

The following supplemental requirements listed on page 92 are applicable to this program:

- English Requirement
- Mathematics Requirement
- Continuation Requirement

In addition to the completion of the course work of the College, students must be recommended for their degrees by the faculty of the College. The awarding of a baccalaureate degree also requires a minimum average of 2.0 or "C" for all engineering course work of 3000 level or above attempted while registered in the College.

Location

The course work for this program is offered on both the Tampa campus and the St. Petersburg campus. On occasion, it may be necessary for a student at the St. Petersburg campus to go to the Tampa campus for a specific course, or vice versa. 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.

Computer Service Courses

These courses marked SC are specifically designed for the non-engineering student.

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. These courses do not require a mathematics preparation beyond high school level.

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 courses 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.

Students in engineering, the physical sciences, and mathematics should consult the College's departmental course offerings for suitable computer courses.
The College of Fine Arts serves the three-fold purpose of providing programs 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 education dedicated to the development of professional excellence in those who are highly talented in the fine arts, (2) to foster this feeling and commitment to aesthetic excellence in those preparing for teaching, and (3) to provide curricular studies and extracurricular activities designed to enrich the life of the general University student and contribute to the overall human environment of the University community.

The College offers degree programs in the departments of Art, Dance, Music, and Theatre, and conducts a program of cultural events.

Programs in art education and music education are offered jointly by the College of Fine Arts and the College of Education. Studio and history courses in art, vocal and instrumental music for these programs are offered by the College of Fine Arts (see programs under the College of Education).

Fine Arts Events Program

The college recognizes the importance of maintaining an arts filled environment as an essential ingredient in the process of teaching the Arts, both for students within the college itself and for the community at large. Through its program of exhibitions, visiting artists in all performance areas, films, and residencies of professionals, including companies, ensembles and individuals all of the highest quality available, the college does indeed provide for the arts student numerous opportunities to develop greater awareness of the many and various options to be pursued, and, for the whole community both campus and civic, a program that enriches the lives of everyone.

These programs are administered by a unit of the college designated as Fine Arts Events (formerly Florida Center for the Arts). The Fine Arts Events staff provides a pool of professional expertise, which is a resource to the academic programs of the various departments in the college as well as providing an intellectual and creative stimulus through the program of events.

The remarkable extent, the wide diversity, and the superlative quality of its programs reflects the desire of a major university and its College of Fine Arts to use its resources for the broadest possible educational and cultural advantages.

Only a partial listing of individual artists and performing groups of outstanding caliber includes: John Cage; The Guarneri String Quartet; Lazar Berman; The New York Pro-Musica; Elizabeth Schwartzkopf; Alvin Ailey; Alwin Nikolais; Robert Rauschenberg; James Rosenquist.

More extensive lists of professional artists and performing organizations appear in this catalog under the sections of the specific units in the College of Fine Arts in which research, demonstration, teaching and other educational activities have directly instructed and otherwise benefited students.

SYCOM

The Systems Complex for the Studio and Performing Arts—SYCOM—provides staff, courses of study, service and facilities to encourage active participation in ongoing art research by faculty and students in the College, members of the University community, citizens in the Tampa Bay area and distinguished artists and scientists in residence.

The facilities in SYCOM, are: Digital Studio—The PDP 11/10 computer provides an advanced, state-of-the-art system for innovative teaching and research in computer assisted music composition, graphic, spatial, kinetic, and filmic arts. Digital-to-analog as well as analog-to-digital converters interface the computer with various voltage controlled devices. Analog Studio—Two Moog-10 synthesizers, a 100-series Buchla Electronic Music System, multi-channel tape machines and a master console for 16-channel quad-mixing are the heart of the analog system for SYCOM. Each unit is capable of being controlled by the PDP 11/10. Real-Time Applications is a small recording studio and workshop for electronic music performance experiments. Systems Research Lab maintains, coordinates and interfaces the various studies of SYCOM.

In SYCOM, individual or group projects, sponsored by SYCOM or by extramural granting agencies are highly appropriate. Project results are manifest in public lectures, performances, reports, publications, exhibits, or in large theatrical events and special workshops, often in contexts such as Sound Gallery, the Event/Complex Series, the summer teaching program, Art-Tech Workshop, and the new music/media festival, INTERMUSE.

BACCALAUREATE LEVEL DEGREE PROGRAMS

Admission to the College

A freshman student may elect to enter the College of Fine Arts as a potential major in one of the four departments as early as his initial entry into the University. At that time, the new freshman has to correctly indicate his College and major choice. However, any student in the University in good standing, at whatever level, at any time (even in the middle of a quarter), can apply to change from another major to a major in the College of Fine Arts without affecting course work in progress. The student desiring to make this change must acquire his advising records from his present adviser and take them to the College of Fine Art's advising office, where new records will be initiated and maintained upon acceptance.
Advising in the College

The College of Fine Arts operates a central advising office located in the Fine Arts Building. It maintains the records of all major students in the College (art, dance, music, theatre) and provides on-going day-to-day academic advising and assistance to all present and potential students.

Upon admission to the College of Fine Arts, undergraduate students with a declared major will be counseled in their selection of courses by an adviser from the major field. Students will then plan the remainder of their college program to fulfill their educational needs and to satisfy requirements for the Bachelor of Arts degree.

Degree-seeking graduate students accepted into the M.F.A. program in art or into the M.M. program in music will be counseled on program requirements and in their selection of courses by the appropriate Graduate Adviser.

Any student in the University, regardless of major, may take any course in any one of the various programs in any one of the four departments in the College of Fine Arts for elective credit as well as for the General Distribution Requirement when the course is appropriate to the student’s level, when the student has the established prerequisites for the course, and when there is a vacancy in the course at the time of the student’s registration.

Student academic problems of an unusual nature needing particular attention and personalized clarification, may be directed to the Coordinator of Advising in the College of Fine Arts.

In all cases, the responsibility for meeting all graduation requirements rests entirely upon the student.

Graduation Requirements

The College of Fine Arts currently offers one undergraduate degree, the Bachelor of Arts (B.A.), attainable in the Departments of Art, Dance, Music and Theatre. These requirements are referred to on page 33 of this catalog, but are briefly summarized here:

1. 180 credits 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. Departmental Requirements: Completion of a major in a subject or an integrated major involving several subjects with a minimum of 63 credit hours (except for music majors—see item #6 and except for theatre, see item #7). Waiver for credit of up to 18 credit hours is possible by demonstration of competence. Review is by Faculty Committee.

3. Free Electives: To allow the student the opportunity to choose between a greater breadth and a greater depth of experience, 35 credit hours of free electives (except for music and theatre majors) are permitted, only 28 hours of which may be taken in the department of the student’s major.

4. Special Requirements: Except for students majoring in music and theatre, at the discretion of the other departments of the College, students may be required to take up to 22 hours of courses outside the major department which are deemed necessary to meet the particular needs of individual students engaged in special areas of study in that department. All majors must take at least 9 hours in one or more of the other departments of the College.

5. General Distribution Requirements: The remaining 60 credits of the student’s 180 credit hour degree requirement may be satisfied by completing the University’s General Distribution Requirement as explained on page 32 of this catalog. This requirement may also be satisfied by the A.A. degree holder from a Florida Junior or Community College or from another State University with General Education requirements met, the General Education requirements being broadly acceptable as the equivalent of the General Distribution requirements. (In this case, the College of Fine Arts will accept a total of 90 quarter transfer hours from the A.A. degree holder.) The A.A. degree is in no way a requirement for acceptance into the College of Fine Arts (or into any one of its upper level degree programs), or a requirement for graduation from the University.

6. Music Departmental Requirements: Students majoring in music must complete 96 specified departmental credits, 7 credits of Free Electives, 8 credits in the Special Requirement area, plus 9 credits in one or more of the other departments of the College.

7. Theatre Departmental Requirements: Students majoring in theatre following the design and technology concentration must complete 74 specified departmental credits, 24 credits of Free Electives, 13 credits in the Special Requirement area, plus 9 credits in one or more of the other departments of the College. Students following the performance concentration must complete 75 specified departmental credits, with 23 Free Electives, 13 Special Electives and 9 credits in one or more of the other departments of the College. Students concentrating in professional theatre must complete 96 specified departmental credits, 2 credits of Free Electives, 13 credits in the Special Requirement area, plus 9 credits in one or more of the other departments of the College.

8. To be eligible for graduation, a student must earn 45 of the last 90 hours of credits in residence at the University of South Florida. However, any course work to be taken and any credits to be earned outside of the University to be applied toward a degree from the University must have prior specific approval in writing from the student’s academic major adviser, from the chairperson of the student’s major department, from the Coordinator of Advising for the College, and from the Dean of the College.

9. Specific questions concerning program requirements for the B.A. degrees in the College, or any other problems needing particular personalized clarification, should be directed to the Coordinator of Advising, College of Fine Arts, University of South Florida 33620.

10. The responsibility for seeing that all graduation requirements are met rests with the student.

B.A. Degree Requirements in the College of Fine Arts (Art, Dance, Music, Theatre):

Briefly summarized here, are the 180 minimum hour requirements for the B.A. degree in the College of Fine Arts:

1. In Art and in Dance, a minimum of 63 hours in the major.

2. In Theatre, a minimum of 74 hours for the design and technology concentration; a minimum of 75 hours for the performance concentration; and 96 hours for the professional concentration in the major.

3. In Music, a minimum of 96 hours in the major.

4. For all majors, 60 hours in General Distribution Courses.

5. For Art, Dance, 35 hours of Free Electives (of which 28 hours may be taken in the major).

6. For Music majors, 7 hours of Free Electives (none of which may be taken in the major).

7. For Theatre majors, 24 hours of Free Electives for Design and Technology concentration; 23 hours of Free Electives for Performance concentration; and 2 hours of Free Electives for the Professional concentration (none of which may be taken in the major).

8. For Art and Dance majors, 22 hours of Special Requirements outside the major department.

9. For Theatre majors, 22 hours of Special Requirements outside the major department.

10. For Music majors, 17 hours of Special Requirements outside the major department.

Courses for General Distribution Requirements:

Courses in the College of Fine Arts in the departments of Art, Dance, Music and Theatre fall within Area II of the University’s General Distribution Requirements. This means that any student in the University may utilize art, dance, music, and theatre courses toward the partial satisfaction of the University’s 60-hour General Distribution Requirements. (See page 32 of the University Catalog for a complete description of General Distribution Requirements.
and their satisfaction by AA degree holders and other transfer students with "General Education Requirements" met.) However, a major in any one of the four departments in the College of Fine Arts may utilize only those courses in the other three departments of the College for Area II General Distribution Requirements.

Contracts and Permission Slips

All Directed Studies courses in the College and all variable credit courses in the College require contracts between students and instructors describing the work to be undertaken by the students and specifying the credit hours. These contracts are to be completed with 4 copies and signed by the student, the instructor, and the Department Chairperson. The student and the instructor each retain a copy, with one copy going to the College Advising Office. It is the student's responsibility to obtain the necessary signatures and make the required distribution of all copies. Important: the student must have his/her signed copy of a contract at the time of registration.

Permission Slips: Admission into some courses is possible only by consent of instructor (CI), consent of chairperson (CC), or by audition or portfolio review. When such special permission is required, it will be the student's responsibility to obtain any required "Permission Slip" for presentation at registration.

Additional Contracts: The College of Fine Arts requires that any S/U grading agreement entered into between student and instructor be formalized by a contract in quadruplicate signed by the student and the instructor. Distribution: one copy retained by the instructor, one copy for the student, one copy delivered to the department office and one copy delivered to the College Advising Office.

I Grades (Incompletes) must be contracted for by mutual agreement between student and instructor, with the contract describing specifically the amount and nature of the work to be completed for the removal of the incomplete grade. This contract additionally clearly specifies the date that the work will be due (within legal limits) for grading. Both the student and the instructor must sign this contract and the distribution of the four copies will be the same as with S/U contracts. A student must not register for a course again to remove an "I" grade.

S/U Grading in the College

1. Non-majors enrolled in college major courses may undertake such courses on an S/U basis with instructor approval.
2. S/U grading agreements between instructors and students must be carried out in the form of written contracts.
3. The timetable for the completion of an S/U contractual agreement between instructor and student in any given Quarter will be determined solely by the instructor.
4. Credits earned by a non-major student with an "S" grade will not count toward the student's minimum major course graduation requirement should that student ultimately decide to become a major student in one of the four departments in the College. Instead, such credits earned with an "S" grade will be assigned to the student's required-for-graduation 35 hour Free Elective category (with the exception of music).
5. Although Fine Arts major students may take up to 28 hours of course work in their major to be used as Free Electives, (with the exception of music majors), Fine Arts students are not entitled to the S/U grading option in courses taken in their major subject area, even when specifically used or intended to be used as Free Electives.
6. In the College of Fine Arts, the only S/U graded courses available to a major student in his major subject area are those curriculum allowable courses designated S/U (that is, S/U only).
7. With the exception of such courses as may be specifically required under the College's "Special Requirements" regulations, and such specific courses that may be required in the General Distribution area, there will be no limitation whatsoever placed on student majors in the College as to the number of courses taken S/U outside of his major department.

Dean's List Honors


Programs Leading to the Baccalaureate Degree

The College of Fine Arts has programs leading to the Bachelor of Arts degree in the following fields:

Art
Music
Dance
Theatre

Interdisciplinary Study

In spite of the fact that an undergraduate interdisciplinary degree program is not formally offered in the College of Fine Arts, it is nevertheless possible for a student to pursue what amounts to an interdisciplinary program of study in the College when the student is able (or when he sees fit) to utilize the 35 hours of Free Electives allowed him toward that end.

To suggest an example, an arts-oriented student may be equally (or almost equally) interested in two of the four undergraduate degree disciplines offered by the respective departments in the College of Fine Arts—Art, Dance, Music, Theatre (the Bachelor of Arts degree, in each case). To further extend the example, the student might complete the major course requirements in the Art department (and, with other requirements met, receive the B.A. degree in Art) and at the same time utilize all of his 35 Free Elective hours for course work in the Music department. A student majoring in Art might also divide his 35 Free Elective hours between the Departments of Music, Theatre, and Dance for an even broader interdisciplinary approach. A student wishing to be involved in more than one area in the College should consult with his major department adviser or with the Coordinator of Advising in the College to determine if an interdisciplinary sequence of study might be tailored to suit his particular needs.
MASTER'S LEVEL DEGREE PROGRAMS

The College of Fine Arts offers two master's level degree programs, the Master of Fine Arts (M.F.A.) in the Art department and the Master of Music (M.M.) in the Music department. The general University admissions requirements for graduate degree-seekers are described beginning on page 42 in this catalog. The general University application procedures are explained on page 11. When all of the information required for general acceptability into the University is received in the Graduate Admissions Office, the information gathered by the office will be forwarded to the appropriate department in the College of Fine Arts where the applicant's final acceptance or rejection is actually determined.

PROGRAMS AND CURRICULA

ART (ART)

Departmental Requirements for the B.A. Degree

The art curriculum is designed to develop the student's consciousness of aesthetic and ideological aspects of art and its relationship to life and to assist students in the realization of personal ideas and imagery. Most B.A. recipients interested in college teaching, museum or gallery work, fine or commercial studio work pursue the extended discipline and experience offered at the graduate level.

Although the Art program allows many possible courses of study, most art major students will select one area of emphasis chosen from the course offerings listed.

The major concentrations, or areas of emphasis, available to undergraduate (B.A. seeking) art students are: Drawing, Painting, Sculpture, Ceramics, Graphics (Lithography and/or Intaglio and/or Silkscreen), Photography, Cinematography, Art History and Theory.

Art Studio Concentration

The following are the 63 quarter hour minimum requirements for a studio concentration (each course requiring a grade of “C” or better):

1. Visual Concepts I, II, and III and Introduction to Art with a grade of “C” or better, for a total of 16 credit hours.
2. Minimum of 12 credit hours of 3000-level studio courses exclusive of Technique Seminars (from drawing, painting, sculpture, ceramics, printmaking I, photography, cinematography).
3. Minimum of 12 credit hours of 4000 and/or 5000 level studio courses exclusive of Technique Seminars (from drawing, painting, sculpture, ceramics, lithography, intaglio, silkscreen, photography, cinematography, video arts.) With rare exceptions, these should be in one area.
4. Minimum of 12 credit hours in Idea Seminars and/or art history courses.
5. Art senior Senior Seminar for 3 credit hours.
6. Eight credit hours of additional art courses (which may include Technique Seminars), for a total of 63 quarter hours in art.

Art History Concentration

The following are the 63 quarter hours minimum requirements for an art history concentration (each course requiring a grade of “C” or better):

1. Visual Concepts I, II and III and Introduction to Art, totaling 16 credit hours.
2. Minimum of 20 credit hours of 4000-level art history courses (of this, Twentieth Century art history, 4 credit hours is required).
3. Seminar in the History of Art History for 4 credit hours.
4. A minimum of 14 credit hours in Idea Seminar (2 quarter hours each) and/or Directed Readings (1 to 6 quarter hours each) and/or Critical Studies in Art History (4 quarter hours each).
5. Art Senior Seminar, 3 credit hours.

6. Six additional credit hours of art courses, to total a minimum of 63 quarter hours.
7. A proficiency in at least one foreign language, with either French or German strongly recommended. In lieu of some considerable direct living experience with another language, it is suggested that a minimum of two years or equivalent of college-level study of a language be undertaken.

For more specific information as to the satisfaction of this requirement, the student should consult with the art adviser or the faculty of the art history area of the art department.

Special Requirements for All Art Majors

At the discretion of the Art department, major students may be required to take up to 22 hours of courses outside the Art department which are deemed necessary to meet the particular needs of individual students engaged in special areas of study in that department. Of these, at least 9 hours must be taken in the other departments of the College of Fine Arts.

Transfer credit will be given on the basis of portfolio and transcript evaluation.

The requirements for the bachelor's degree in Art Education are listed under the College of Education.

Visiting Artists and Artists-in-Residence

The Art Department is widely known for the consistent level of excellence of its programs. Aside from the obvious attribute to the overall excellence of quality of its permanent in-residence artist teaching staff, in order to insure the continuing expansion of learning opportunities available to students, the art department regularly brings to the campus' studios established professional working artists as supporting resources for its art-teaching activities. Such artists provide a unique supplemental extra-dimension to the arts studies programs of particular value to students.

Among those artists who have articulated to students valuable first-hand information about, and who have convincingly on-the-spot demonstrated direct experience with, current developments in the arts: Scott Bartlett, Larry Bell, Friedl Dzubas, Allen Jones, Nicholas Krushenick, Daniel Lang, Paul Sarkissian, Lucas Samaras, Robert Irwin, James Rosenquist, Robert Rauschenberg, Phillip Pearlstein.

Master of Fine Arts Degree (Art)

The major concentrations, or areas of emphasis, available to graduate (M.F.A. seeking) art students are: Drawing, Painting, Sculpture, Ceramics, Graphics (Lithography and/or Intaglio and/or Silkscreen), Photography, Cinematography.

Procedure for Applying

For consideration of acceptance into the Master of Fine Arts degree program, it is required that the applicant submit a portfolio of his work directly to the Graduate Art Adviser in the College of Fine Arts. The portfolio usually consists of 35 mm slides for convenience in shipping, handling and presentation. Legitimate exceptions to this “rule” are naturally acceptable, such as when the applicant's work is comprised of film, or in such other obvious cases when the nature of the work does not lend itself to slides, or when the work can be displayed or presented more conveniently and/or more effectively.
by delivering it personally (with prior permission), to the Graduate Art Adviser in the College of Fine Arts, or when the work itself and/or additional work is requested by the Art Adviser to be sent or brought it. The "portfolio" should indicate a competent level of involvement in an area (or areas) of visual exploration and, when mailed, must be posted directly to the Graduate Art Adviser, College of Fine Arts, University of South Florida, Tampa, Florida 33620, with return postage in stamps, (please, no cash, checks or money orders!) in the amount deemed necessary for the return of all materials.

A personal interview with an applicant is sometimes (though infrequently) requested by the Art department when it is considered necessary (and reasonable) in order to arrive at a final decision regarding the applicant's acceptability into the graduate program. Travel in connection with any interview, requested by the Art department or by the applicant, is naturally at the applicant's own expense. An applicant who would seek consultation with the Graduate Art Adviser, with the Art Graduate Committee, or with any other member of the Art department for whatever reason and for whatever date or time would do well to write or telephone for an appointment in advance of his/her arrival on campus if at all possible.

The following are deadlines for receipt of all materials (letters of recommendation, letter of intent, and portfolio), in the Office of the Graduate Art Adviser, College of Fine Arts: January 1, (for consideration for admission for Quarters III, IV, and I); April 1, (for consideration for admission Quarters IV and I); October 1, (for consideration for admission Quarters II and III). At this same time, the Office of Graduate Admissions must have received all transcripts from former institutions, the GRE scores and the Application for Admission.

For Admission. The applicant's responsibility is to see that all required transcripts and GRE scores are received in the Office of Graduate Admissions in time for their processing only after which we are presented with the record of those credentials. Without those credentials in hand, we cannot consider an application. The applicant will be advised to allow at least one full quarter in order to permit processing within the system. (If applicable, see graduate admissions requirements on page 42 of this catalog).

Applicants to the Master of Fine Arts Degree program are also required to submit three letters of recommendation, a letter of intent, and slides of their work for approval by a faculty committee. These materials must be submitted directly to the Graduate Art Adviser in the College of Fine Arts.

Requirements for the M.F.A. Degree:

General requirements for graduate admission are given on page 42. A student may be accepted into the program with degree-seeking status either provisionally (conditionally) or fully (unconditionally). The provisionally admitted student may be required to be enrolled for one or two consecutive terms for the removal of a deficiency or to provide time to demonstrate a particular competency. At the end of a provisional period, the student's work will be reviewed by the art faculty; at which time the student will either (1) be allowed to continue in the program, with provisional status removed; or (2) be terminated from the program; or (3) be allowed an additional term of provisional status. Students accepted fully into the degree-seeking program initially will be given a calendar year in which to achieve "degree-candidacy" by faculty review. Neither the first term of a fully accepted degree-seeking student's enrollment nor any summer term may be used for a candidacy review, however. A student admitted into the degree program provisionally will not be permitted a candidacy review during the first term of his/her provisional enrollment. Such a student could be given a candidacy review during the second term of enrollment if he/she had been removed from the provisional status at the end of the first term, or could be reviewed simultaneously for both the removal of the provisional status and for candidacy consideration during the second term provided that he/she is not required to enroll for a third term in the provisional status. Students initially admitted provisionally also have a calendar year in which to achieve candidacy. All degree-seeking students are provided with two opportunities within the calendar year to achieve candidacy. If a degree-seeking student does not achieve candidacy on the second attempt, the student will then be terminated from the program.

Upon acceptance to candidacy, the student will select a committee of three faculty members who will assist in his progress toward the degree (at least two of the committee members must be studio faculty of the student's primary discipline). There is no foreign language requirement for the M.F.A. degree. In spite of the seven-year rule generally applicable to the Master's Degree candidate (see page 46 in this Catalog), the M.F.A. degree candidate is expected to be placed in continuous residence (enrollment for course work only in Summer Quarters, not being required) regardless of the number of course credit hours carried in any given term, regardless of whether they be few, several, or many, and regardless of any per-term averaging pattern. If enrollment is not planned or made for any given term or terms during "continuous residence", the degree-seeking student must request in writing and receive permission from the Director of Graduate Studies and the Graduate Art Adviser in the College of Fine Arts for such absence. Violation of the written terms of a permitted leave of absence could result in termination from the M.F.A. program, at the discretion of the Director of Graduate Studies and the Graduate Art Adviser in the College of Fine Arts. Absence from the program (failure to be actively enrolled for any term during "continuous residence", excluding any summer term) without explicit written consent of the Director of Graduate Studies and Graduate Art Adviser in the College of Fine Arts could result in immediate dismissal from the program (absence without leave). Any violation of the terms of a provisional or conditional acceptance into the program could result in the termination of the program. Any student not meeting the requirements of the program otherwise, explicit or implicit, and who is not terminated by the provisions indicated above, may be placed on "pending" by a written notification to the Records Section in the Office of the Registrar from the Director of Graduate Studies in the College of Fine Arts.

The M.F.A. degree requires a minimum of 72 quarter hours. With the exception of: (1) ART 6936 (Graduate Seminar), which must be taken at least twice; and (2) ART 6937 (Graduate Instruction Methods), which must be taken at least once, but which is limited to a cumulative total of 5 credits per student; and (3) the "Documentation" requirement, the course credits for which may be earned in either ART 6911 (Directed Research), with only the appropriate number of credits commensurable to the work undertaken, submitted and approved acceptable toward the degree; or earned in ART 6972 (Thesis, Masters), under the same conditions; and (4) the "Presentation of Work" requirement, the credits for which are allowed within reasonable limits, according to the committee-imposed requirements and the enormity of the other aspects of the task undertaken—all of which above are generally required, the specific course structure of any student's graduate program will be determined by the Director of Graduate Studies and Graduate Art Adviser in the College of Fine Arts after appraisal of the student's interests, capacities and background during his her first term of residency. Major areas of study include drawing, painting, sculpture, ceramics, lithography, intaglio, silkscreen, photography and cinematography. Under normal circumstances, students will not be encouraged to diversify too broadly; nor will they be encouraged in specializing too narrowly; but students who plan to prepare themselves for college or university-level teaching will be advised to develop competencies in more than one area in the interest of the sort of flexibility expected to be sought by hiring institutions for the next ten years or more.

The graduate student must meet all of the stated prerequisites for any course into which he/she wishes to enroll. The responsibility for seeing that all graduation requirements are met rests with the student. Although the Director of Graduate Studies and Graduate Art Adviser in the College will generally coordinate and supervise the student's registrations and direction in the College in the early stages of the student's program involvement, the student's graduate committee will be directly responsible to the student upon the student's achievement of candidacy in all courses during his/her studies, including the satisfactory completion of all requirements for graduation. The student must be registered as a full-time graduate
student for at least two quarters of residency. The requirements for the M.A. Degree in Art Education are listed under the College of Education.

**M.F.A. Thesis Requirements**

The thesis required for the M.F.A. degree, while primarily a body of creative visual work (as opposed to the traditional written scholarly research document with standardized requirements), has other components and is developed in the following manner:

1. The production of the body of visual work for a Thesis Exhibition under the guidance of the student's major professor (who will be the Chairperson of the student's graduate committee) and the two remaining faculty members on the student's graduate committee.

2. The formally scheduled Thesis Exhibition itself. Although the reservation of desired available space and dates is arranged in advance between the student and the Exhibitions Coordinator, the body of thesis work to be presented must receive the final approval of the student's entire graduate committee before there may be a Thesis Exhibition.

3. The **Documentation** of the Thesis Exhibition, which is not be to be confused with "the thesis" as described in "Division of Graduate Studies", under "Master's Degree" as being required to conform to the guidelines in the Handbook of Graduate Theses and Dissertations. The required Documentation normally consists of two parts:
   a. A record in 35mm slides of each piece of work in the Thesis Exhibition when appropriate such, as in the case of paintings, sculptures, ceramics, etc. (obvious exceptions would be in the case of cinematography, etc.). Five sets of the documenting slides are normally required by the College for distribution and will be retained, the student bearing the expense.
   b. A logically developed, well organized, clearly articulated, written documentation of the development of the Thesis work. Although there is no rigidly prescribed style or format, the written documentation should be conceived and designed to reveal rather than to conceal, to communicate rather than to preclude communication, and must provide supporting evidence of an aesthetic awareness and of a creative sensibility.

1) **Thesis Development:** Before midterm of the quarter prior to the graduation quarter, student should submit in written form an outline of the ideas, concepts to be dealt with in the thesis document and exhibition to his Graduate Committee.

   The student’s Graduate Committee within a week will in turn:
   a) meet with the student to discuss their recommendations and reactions to the student’s proposal.
   b) these recommendations and reactions to be submitted to the student in writing.

   It will be the student's responsibility to act on these recommendations and to arrange meetings with the committee to review the development of the work and obtain their written approval for converting of the orals and presentation of the works at least two weeks prior to the opening of the thesis exhibition.

   Failing this written approval two weeks prior to the scheduled opening of the exhibition, the exhibition will be postponed.

2) **Thesis Orals:** Held in conjunction with the exhibition during the first week of the Thesis Exhibition. Three faculty questioners will be selected by the student with approval of his committee and the questioners will be given copies of the written documents two weeks prior to the exhibition orals. Student will meet with his Graduate Committee and three questioners in a closed session with the remainder of the faculty members.

   A positive, constructive and careful examination of issues involved in the thesis/exhibition will take place.

Those in attendance will be the candidate, committee, questioners and other members of the faculty, with the questioners and committee asking questions. If any clarifications to the thesis document/exhibition are indicated, agreement should be reached at this time as to the necessary revisions.

The committee has the responsibility to seek the opinion of the faculty.

Any questioner or member of the committee can request consultation with the full faculty. The committee will consider the advice of the faculty when they make their decision.

3) **Thesis Exhibition:** If at all possible, the thesis exhibition will be held for a period of two weeks during the quarter of intended graduation, but in no case will any exhibition be held until the third week of the quarter.

4) **Open Dialogue/Thesis Exhibition:** During the final week of the Thesis Exhibition, a specific time will be established for an open dialogue to take place within the gallery. This dialogue will be open to the public and might include undergraduates, graduate students and faculty.

   There should be a free flow of questions, answers and discussion in direct reference to the development of the exhibited work and the student will be responsible for leading the activity.

   The formal aspects of evaluation of the thesis document/thesis exhibition will NOT take place at this time, but will have been resolved earlier within the Thesis Orals.

The signed original and four signed copies of the finally approved written Documentation, together with slides, must be submitted for permanent retention before the degree approval.

4. The oral defense of the Thesis Exhibition accompanying the oral defense of the written Documentation (as outlined above).

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**DANCE (DAN)**

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.

Major concerts are given during each quarter as well as workshop performances. Major dance companies are brought to the campus giving students the opportunity of taking classes with the professional dancers.

**Requirements for the B.A. Degree:**

Dance majors in the Modern concentration are required to take, for a total of 39 credits:

- **B A 2160 Beginning Modern** (3)
- **DAA 2200 Beginning Ballet** (3)
- **DAA 2700 Choreography I** (3)
- **DAA 3161 Intermediate Modern (eight credits)** (4)
- **DAA 3201 Intermediate Ballet** (4)
- **DAA 3701 Choreography II** (3)
- **DAN 3603 Music for Dance** (3)
- **DAN 3710 Repertory (three credits)** (1)
- **DAN 3110 World History of Dance** (3)
- **DAA 4162 Advanced Modern (15 credits)** (5)
- **DAA 4702 Choreography III** (3)
- **DAA 4703 Choreography IV** (3)
- **DAN 4120 History of Modern Dance** (3)
- **DAN 4151 History of 20th Century Ballet** (3)
- **DAN 4170 Senior Seminar** (3)
Dance majors in the Ballet concentration are required to take, for a total of 63 hours:

- DAA 2160 Beginning Modern (3)
- DAA 2200 Beginning Ballet (3)
- DAA 2700I Choreography I (3)
- DAA 3161 Intermediate Modern (4)
- DAA 3201 Intermediate Ballet (eight credits) (4)
- DAA 3701 Choreography II (3)
- DAN 3603 Music for Dance (3)
- DAN 3710 Repertory (three credits) (1)
- DAN 3220 Ballet Variations (six credits) (1-3)
- DAN 4202 Advanced Ballet (15 credits) (5)
- DAN 3110 World History of Dance (3)
- DAA 4120 History of Modern Dance (3)
- DAN 4151 History of 20th Century Ballet (3)
- DAN 4170 Senior Seminar (3)

Entrance to all technique courses will be by jury examination.

Dance majors are also required to take 35 hours of free electives. Of this number, a maximum of 28 hours may be in the Dance department.

Special requirements for dance majors come to 22 hours. Nine hours must be taken in the other departments of the College of Fine Arts. The remaining 13 hours will be assigned to the student based on his individual needs as determined by the department.

The University's General Distribution requirement consisting of 60 hours may be found on page 32. The above requirements total 180 hours. Junior dance majors are required to do a dance project.

Senior dance majors are required to choreograph and perform in a senior dance program.

Prospective students must contact the Dance department to arrange for an audition prior to registration. Beginning courses may only be repeated three times. A student must audition each quarter to stay at his present level or to advance to a higher level.

Until students are accepted into Intermediate Modern or Intermediate Ballet they will be considered probationary Dance majors.

A dance major is expected to keep his/her weight at a level that is aesthetically acceptable to the Dance faculty for classroom training and for performances.

In pursuit of the degree, a student must abide by the following regulations:

A. Students must not use classroom facilities without permission of faculty. "Classroom" refers to studio space, theatre space, or any other space designated for dance practice, rehearsal, or performance. "Facilities" refers to all technical equipment associated with either dance practice, rehearsal, performance (such as pianos, other musical instruments, tape recorders, stereo equipment, and any other equipment or sets).

B. Each student utilizing a piece of equipment which is the property of the Dance department as mentioned above is held liable for any loss or damage to equipment.

C. Students may not remove any facilities from designated classroom areas.

Students should refer to page 33 for graduation requirements.

### Visiting Artists and Artists-In-Residence

By supplementing its excellent on-going regular staff-instructed dance curriculum with other professional resources made available through the Visiting Artist and Artist-in-Residence programs, the Dance department provides for dance students an overall dynamic program for practice, study and learning.

An impressively lengthy list of the extraordinary individual dance and dance company participation in one or more programs includes:

- Murray Louis Dance Co.
- First Chamber Dance Co.
- Claude Kipnis Mime Theatre
- Louis Falco Dance Co.
- Nikolais Dance Theatre
- Norman Walker Dance Team
- Ballet Marjo
- Luis Rivera Co.
- Utah Repertory Dance Theater
- Kerela Kalamandalam Co.
- Dance Theatre of Harlem
- Merce Cunningham Dance Co.
- Alvin Ailey American Dance Theatre
- Don Redlich Dance Co.
- Polish Mime Ballet Theatre
- Viola Farber Dance Co.
- Paul Taylor Dance Co.
- The Phakavali Dancers of Thailand
- Rosales Fernandez
- Jacques D'Amboise
- Lucas Hoving Dance Co.
- New Caledonia Singers and Dancers
- The Trocadero
- Kazuko Hirabayashi
- Cliff Keuter Dance Co.
- Kelly Hogan
- Jose Limon Co.
- James Cunningham Co.
- Lar Lubovitch Dance Co.
- Dena Madole
- Meredith Monk
- Luigi
- Carolyn Brown
- Susanna Hayman Chaffey
- Sandra Neels
- Betty Jones
- Barton Mumaw
- Twyla Tharp Dance Company
- George Faison Dance Company
- Pilobolus Dance Theatre
- Jennifer Muller and The Works

### MUSIC (MUS)

#### The Departmental Major:

The music curriculum is designed for those students gifted in the performance and/or composition of music. Candidates for a major in music are required to pass an entrance examination (audition) in their respective performance area. Composition candidates are required to submit appropriate scores and/or tapes of their compositions for faculty appraisal. All new registrants are also required to take a placement examination in music theory and literature. Students may obtain dates and times for these examinations from the music department office. Completion of those examinations is required before registration in music courses can be permitted.

Academic programs offered include:

- Bachelor of Arts degree with concentration in Performance (voice, piano and orchestral instruments) Composition.

#### Requirements for the B.A. Degree:

All students seeking a degree in music are required to:

1. Complete successfully the secondary piano requirements as defined by the music faculty.
2. Present a partial public recital during their junior year.
3. Present a complete public recital during their senior year.
4. Present a record of satisfactory recital attendance during each of the quarters of study at the university. The specific requirements for satisfactory attendance is set by the music faculty.

These requirements are in addition to the actual course requirements listed below:

A total of 96 hours is required as follows:

- **MUSIC THEORY** (30)
  - MUT 1111 (3)
  - MUT 1242 (2)
  - MUT 2118 (3)
  - MUT 1112 (3)
  - MUT 1243 (2)
  - MUT 2246 (2)
  - MUT 1113 (3)
  - MUT 2116 (3)
  - MUT 2247 (2)
  - MUT 1241 (2)
  - MUT 2117 (3)
  - MUT 2248 (2)

- **MUSIC LITERATURE** (6)
  - MUL 2111 (2)
  - MUL 2112 (2)
  - MUL 2113 (2)

- **MUSIC HISTORY** (9)
  - MUH 3211 (3)
  - MUH 3212 (3)
  - MUH 3213 (3)

For applied concentration, 36 hours of applied music is required with 9 hours to be completed at each level.

One ensemble per quarter is required in conjunction with applied music enrollment.

Promotion to the next higher level in applied music is made upon recommendation of the faculty in the student's respective performance concentration based upon a jury examination conducted by that concentration faculty.
For Composition Concentration:
Undergraduates concentrating in composition must complete a minimum of 36 credit hours from among the following sequence of courses including MUC 3403 and at least one quarter of MUC 4204, satisfying all necessary prerequisites for all courses:

- MUC 2020: Composition (3)
- MUC 2301: Introduction to Electronic Music (3)
- MUC 3203: Composition (3)
- MUC 3401, 3402, 3403: Electronic Music—Analog Synthesis (3,3,3)
- MUC 3441, 3442, 3443: Electronic Music—Digital Synthesis (3,3,3)
- MUC 3601, 3602, 3603: Contemporary Techniques of Composition (3,3,3)
- MUC 4204: Composition (3)
- MUC 4405, 4406, 4407: Electronic Music—Real-Time Performance (3,3,3)
- MUC 4501: Seminar in New Musical Systems (3)
- MUT 4311, 4312: Orchestration (3,3)

In consultation with, and with the approval of the entire composition faculty, the senior requirement for composition concentration is to be satisfied in any of the following three ways, or in other ways so designated by the composition faculty: (1) a complete public concert of works by the student composer, (2) the public performance of several compositions in various concerts throughout the composer's senior year, (3) the formal presentation to the composition faculty of an extensive portfolio of compositions plus the public performance of at least one of these works during the senior year.

Master of Music Degree
The major concentrations available to graduate (M.M. seeking) music students are:
- performance
- composition
- theory
- choral conducting

Procedure for Applying
The applicant seeking acceptance into the Master of Music Degree program must meet the University's general admissions requirements and make formal application for general University acceptability with the Graduate Admissions Office. Concurrently, the applicant must arrange to fulfill the specific acceptance requirements in the Music department (of the College of Fine Arts). Full acceptance cannot be given until the applicant satisfies: (1) performance audition, (2) placement examination in music theory. Dates and times for auditions and examinations may be obtained by telephoning or writing the Music department, College of Fine Arts. Persons to contact directly are the Chairperson of the Music department and the Graduate Music adviser, or the Director of Graduate Studies (College of Fine Arts) for referral.

Requirements for the M.M. Degree:
General requirements for graduate work are given on page 42. In addition, the applicant for the Master of Music degree program will need to satisfy the following requirements in music before initial registration: (1) performance audition, and (2) placement examinations in music theory. All candidates for the degree must take the following course work:
- Techniques of Research in Music (3)
- Critical Analysis of Music Repertory (4)
- 20th Century Music Literature (4)

The specific program for each student will vary according to his needs and interests. Programs vary according to the program chosen as well as the student's needs and interests. Recommended programs may be obtained from the department chairperson. Each program must be approved by the student's adviser in conformance with the guidelines established by the Graduate Music Committee. A minimum of 54 quarter hours is required.

The responsibility for seeing that all graduation requirements are met rests with the student.

The Faculty:
USF's superior music faculty has been carefully chosen for its training, performing ability, and ability to teach. It is in every sense a team. This achievement has been demonstrated by such fine musical ensembles as the Faculty String Quartet, the Faculty Brass Quintet, the Ars Nova (faculty) Woodwind Quintet and the Faculty Chamber Players.

Unique Learning Opportunities:
The music department at the University of South Florida offers the student the opportunity to study with a distinguished faculty, work with the newest in creative equipment, and to be in the company of other superior music students for an extensive, exciting and exacting period of study.

SYCOM — The Systems Complex for the Studio and Performing Arts offers the student the opportunity to work with an unusually well developed electronic facility for creative research and compositional opportunity.

Visiting Artists and Artists-In-Residence:
The Department of Music utilizes guest composers, conductors, and performing musicians to enhance its offerings in terms of teaching faculty, forum appearances, and the conducting of musical programs, symposia, and clinics. Prominent musicians who have appeared in the past are Howard Hanson, Norman Dello Joio, Randall Thompson, Virgil Thomson, David Ward-Steinman, Walter Trampler, Fred Hemke, Eleazar de Carvahlo, Thomas Nee, Lucas Foss, Maurice Andre, John Haynie, Jean Pierre Rampal, and Julius Baker.

Student Organizations:
Sigma Alpha Iota, national professional music fraternity for women, and Phi Mu Alpha Sinfonia, a professional music fraternity for men, are dedicated to serve the cause of music in America. Student Music Educators National Conference is an affiliate of the Music Educators National Conference and is open to all interested students.

Financial Aid:
The University has made available to highly qualified undergraduate students a number of music service awards. Usually these awards cover in-state tuition fees, and are distributed following open auditions held in January and February. The award is made for the following year for three of the four quarters. Available to graduate students who show special potential for creative contribution to the profession are the University Scholar Awards and graduate assistantships and fellowships. Additionally, loans, grants and work programs are available to qualified University of South Florida students. Financial aid is granted on need, academic promise and character.

THEATRE (TAR)
The Departmental Major:
Through its curriculum and production program, the theatre department offers to seriously interested students the opportunity to prepare themselves for the beginning of a professional career in the Theatre or to continue their studies at the graduate level. In addition, students from other departments and colleges have the opportunity to study and participate in the work of the department, thereby...
allowing them to gain insight into the creative experience of Theatre. 

After a thorough orientation to all facets of the art gained in the basic courses, the Theatre major may begin to concentrate in the areas either of Performance or of Design and Technology. Throughout the student's course of study, contact is encouraged with the faculty in the student's chosen area of concentration to help the student realize his/her full potential and to help maintain awareness of progress.

To earn a major in theatre, the student following the Design and Technology Concentration must take a minimum of 74 quarter hours; the student following a Performance Concentration must take a minimum of 75 quarter hours. In addition to these, 18 or 19 of electives in the theatre department may be taken to broaden the general program or to pursue a particular interest in more depth.

For the student preparing to enter the theatre on a professional basis, a 96-hour emphasis in either Design-Technology and/or Performance is advised.

Through the production program, which includes various performances for general audiences, children and department faculty and students, the student has the opportunity to participate in many different ways, thereby gaining practical experience that is essential to his/her development as an artist. For the more advanced acting student, opportunities sometimes arise for participation with professional companies (Dance, Theatre and Music) that come to the campus as a part of the University Artist Series and Dance Residency Program. For all students, a broad involvement in all facets of their fields of concentration is encouraged.

Visiting Artists and Artists-In-Residence:

Despite the fact that the University is relatively young the theatre department has had in residence artists from many kinds of theatre and many countries including: London's West End, The Actor's Studio, Dublin's Abbey Theatre, Broadway, Washington's Arena Stage, The American Shakespeare Festival, The Welsh National Theatre, the BBC, the London Academy of Music and Dramatic Art, The Working Theatre, Coventry's Belgrade Theatre, Paris, Hollywood, East Berlin's Deutsches Theater, Taiwan, the Soviet Republic of Armenia, and Poland. A partial, alphabetized list would include Martin Esslin, Miriam Goldina, Boris Goldovsky, Henry Hewes, Mesrop Kesdekian, Arthur Lithgow, Marcel Marceau, Paul Massie, Siobhan McKenna, Oiga Petrovna, Ben Piazza, Sergei Pononarov, Alan Schneider, and Doug Watson.

Requirements for the B.A. degree. Total 180 credit hours.

TAR MAJOR REQUIREMENTS:

All students must take:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE 2020</td>
<td>Theatre Fundamentals</td>
<td>(2)</td>
</tr>
<tr>
<td>TPA 2200</td>
<td>Stagecraft</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Select two:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPP 2110</td>
<td>Voice Improvisation</td>
<td>(3)</td>
</tr>
<tr>
<td>TPA 2223</td>
<td>Stage Lighting and Costume</td>
<td>(3)</td>
</tr>
<tr>
<td>TPP 2500</td>
<td>Body Disciplines (3)</td>
<td>(1)</td>
</tr>
<tr>
<td>THE 3110-</td>
<td>Theatre History I (3)</td>
<td>(6)</td>
</tr>
<tr>
<td>3111</td>
<td>Theatre History II (3)</td>
<td>(6)</td>
</tr>
<tr>
<td>THE 4180</td>
<td>Theatre Origins (5)</td>
<td>(5)</td>
</tr>
<tr>
<td>THE 4562</td>
<td>Senior Colloquium in Theatrical Creativity (3)</td>
<td>(3)</td>
</tr>
<tr>
<td>TPA 2250</td>
<td>Workshop in Stage Makeup</td>
<td>(1)</td>
</tr>
<tr>
<td>TPA 3086</td>
<td>Means of Visual Expression</td>
<td>(4)</td>
</tr>
<tr>
<td>TPA 3601</td>
<td>Stage Management (3)</td>
<td>(3)</td>
</tr>
<tr>
<td>TPA 3111</td>
<td>Workshop for Text Analysis</td>
<td>(4)</td>
</tr>
</tbody>
</table>

Plus 1 advanced level Theatre Studies (4) (4)  
Total 41 hours  
Students may choose either Performance Concentration or Design and Technology Concentration.

Requirements for the Performance Concentration in addition to the 41-hour core:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPP 4150</td>
<td>Acting I (4)</td>
<td>(4)</td>
</tr>
<tr>
<td>TPP 4151</td>
<td>Acting II (4)</td>
<td>(4)</td>
</tr>
<tr>
<td>TPP 4140</td>
<td>Acting III (4)</td>
<td>(4)</td>
</tr>
<tr>
<td>TPP 4152</td>
<td>Acting IV (4)</td>
<td>(4)</td>
</tr>
<tr>
<td>Either TPP 4220</td>
<td>Audition Workshop for the Actor (4) or</td>
<td></td>
</tr>
<tr>
<td>TPA 4920</td>
<td>Senior Workshop for Actors (1-4) (4)</td>
<td></td>
</tr>
<tr>
<td>TPA 3510</td>
<td>Special Skills in Movement (3)</td>
<td>(3)</td>
</tr>
<tr>
<td>TPA 3790L</td>
<td>Voice Preparation for the Actor (3)</td>
<td>(3)</td>
</tr>
<tr>
<td>TPA 4310-</td>
<td>Directing I (4)</td>
<td>(4)</td>
</tr>
<tr>
<td>4311</td>
<td>Directing II (4)</td>
<td>(8)</td>
</tr>
</tbody>
</table>

Total 34 hours  
Additional requirements for special 96-hour emphasis in Performance:

1 advanced level Theatre Studies course 4 hours (4)  
plus  
THE 4264 History of Clothing (2) (2)  
plus  
1 additional course in Tech Design Concentration (4)  
Total 10 hours  
Plus-11 hours as stipulated at the discretion of the performance faculty (11)  
Total 21 hours

Requirements for the Design and Technology Concentration in addition to the 41-hour core:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE 4264</td>
<td>History of Clothing</td>
<td>(2)</td>
</tr>
<tr>
<td>THE 4266</td>
<td>History of Architecture and Décor</td>
<td>(3)</td>
</tr>
<tr>
<td>TPA 4010</td>
<td>Design I (Costume, Scenery and Lighting)</td>
<td>(4)</td>
</tr>
<tr>
<td>TPA 4011</td>
<td>Design II (Costume, Scenery and Lighting)</td>
<td>(4)</td>
</tr>
<tr>
<td>TPA 4011I</td>
<td>Performance Course as specified by department</td>
<td>(4)</td>
</tr>
<tr>
<td>TPA 4010</td>
<td>Advanced section of TPA 4010 from related area</td>
<td>(4)</td>
</tr>
</tbody>
</table>

In area of emphasis-4 hours:

Either TPA 4211 Stagecraft II (4) or TPA 4285 Audio Visual Applications for the Stage (4) or 4 hours from TPA 4230 Costume Construction I (2), TPA 4231 Costume Construction II (2), TPA 4281 Practicum in Technical Supervision (2). (4)  

In related area-4 hours from:

TPA 4211 Stagecraft II (4) or TPA 4285 Audio Visual Applications for the Stage (4) or 4 hours from TPA 4230 Costume Construction I (2), TPA 4231 Costume Construction II (2), TPA 4281 Practicum in Technical Supervision (2). (4)  

Four credits from skills courses:

TPA 4081 Scene Painting (2)  
TPA 4240 Stage Properties: Techniques and Materials Studio (2)  
TPA 4052 Drawing-Figure (2)  
TPA 4071 Drawing-Architectural (2)  
TPA 4281 Practicum in Technical Supervision (2) (2)

Total 33 hours  
Additional requirements for special 96-hour emphasis in Design and Technology:

1 advanced level Theatre Studies course plus  
Area of concentration in design, puppetry, performance for special audiences or other programs that the faculty determines appropriate for that student. (18)  
Total 22 hours
Special Requirements:
Students majoring in Theatre may be expected to take courses inside or outside the theatre department as suggested by its faculty or advisers as necessary for the individual student's progress. (See restriction on page 98 up to 10 hours.)

University and College of Fine Arts Requirements:
A) General Distribution requirements ............... 60 hours
B) Free Electives (16 hours may be taken in theatre department courses beyond major requirement for Bachelor of Arts Degree with 75 hours) .... 23 hours
C) Special Requirements-courses in other departments in the College of Fine Arts .............. 9 hours
D) Special Emphasis-additional courses beyond 75 hour requirement giving student preprofessional emphasis (96 hours total: See above for specific course requirement in performance and design and technology) ...................... 21 hours
The major objectives of the College of Medicine 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 students. They 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 their chosen profession.

MEDICINE

Students admitted to the College of Medicine, seeking an M.D. degree, are selected on the basis of what appears 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 and Clinical faculty. Each applicant is considered individually and is judged strictly on his or her 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 applicants whose qualifications appear to warrant complete exploration.

All inquiries concerning admission should be directed to the Associate Dean for Admissions, Medical Center, College of Medicine, Department of Admissions, Box 3, 12901 North 30th Street, University of South Florida, Tampa, Florida 33612.

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 of 135 quarter hours, exclusive of Physical Education and ROTC).

Regardless of the number of years involved in Pre-Medical training, the college credits submitted by the applicant must include the following:

One Year—English
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
Applicants desiring admission to the July, 1979, freshman medical class will be required, as of July, 1979, to have one course in GENETICS and one in STATISTICS.

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. Appropriate arrangements for post graduate training must be made. 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.

Doctor of Philosophy Degree in Medical Sciences

A graduate program leading to the Doctor of Philosophy degree in Medical Sciences is offered by the Basic Science Departments of the College of Medicine. Information concerning this program may be obtained by contacting the Graduate Coordinator, Medical Center, College of Medicine, Box 10, 12901 North 30th Street, University of South Florida, Tampa, Florida 33612.
Students in the College of Natural Sciences are trained in the tools of logical analysis and the modes of experimentation in the continuing attempt to better understand the nature of man and his relationship to the universe. In all its functions the College is dedicated to fostering a spirit of inquiry and intellectual growth.

The College of Natural Sciences offers programs in astronomy; biology, including botany, microbiology, and zoology; chemistry, and biochemistry; geology; marine science; mathematics, medical technology; and physics. These programs are designed for students planning scientific careers in the science fields or for those planning professional careers having a considerable component of science. 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.

In addition, the college administers advising for the pre-medical sciences program and the medical technology degree program. These programs combine specialized counseling and curriculum planning to assist the student in gaining admission to a professional school or internship program.

**BACCALAUREATE LEVEL DEGREE PROGRAMS**

**Admission to the College**

To be admitted to the College of Natural Sciences a student must make written application and satisfy the admission criteria of the college. Upon admission, the student will be assigned a faculty adviser for counseling and program planning. Students preparing for a science or mathematics career must plan their courses carefully because of the sequential nature of the science curricula, and students seeking entrance into a professional school or medical technology internship program require specialized counseling. Because of this, immediate application for admission into the college is strongly recommended.

Information on admission criteria, departments, majors, programs, counseling, and other services of the college may be obtained from the office of the Dean or by contacting the Director of Advising, College of Natural Sciences, University of South Florida, Tampa, Florida, 33620.

**General Requirements for Degrees**

In addition to the University graduation requirements found on page 33, the requirements for graduation in any undergraduate degree in the college are as follows:

1. Completion of a sequence of courses constituting a major program with a grade of "C" or higher in each course. A major program is defined to be courses in a department of concentration plus supporting courses in related departments. All courses in the major program must be taken with letter grade (A,B,C,D,F,I) except those courses which are graded S/U only. For a more detailed description of the major program requirements, consult the appropriate departmental section.

Certain courses offered in the college are designed for the non-science major or the non-departmental major. The courses are designated "For non-majors," "No credit for (department) major," "No credit for science majors," or some similar phrase. For these courses the following rules apply:

- "For non-majors"—For majors in the college, the course will count as credit towards graduation only as a free elective.
- "No credit for (department) major"—The course will not count toward graduation for a science major in the specified department, but will count as credit towards graduation as a free elective for all non-specified departments.
- "No credit for science majors"—The course will not count towards graduation for any major in the college.

2. Satisfaction of the University distribution requirement, except:
   (a) In area II, the minimum requirement of eight hours in Mathematics may be waived by credit in at least eight hours of Mathematics courses required by the major.
   (b) In area IV, the minimum of eight hours in Natural Sciences may be waived by credit in at least eight hours of natural sciences courses required by the major.

3. Completion of 24 hours of courses from the College of Fine Arts, Social and Behavioral Sciences, or Arts and Letters. The student may elect any course from any of these colleges provided:
   (a) The courses are approved by the student's adviser.
   (b) No more than 12 hours are taken in courses in any one prefix.
   (c) The courses are taken with a letter grade (A, B, C, D, F, I).

Courses taken to satisfy the University Distribution Requirement may not be used to satisfy this requirement.

4. Subsequent to admission to the College, a student must complete at least 45 credit hours of letter graded courses in the College.

Credits transferred from other schools will not be included in the grade point average computed for graduation.

For graduation with honors, see page 35. The college or department in the college may have specific requirements in addition to those listed in this catalog. College rules or requirements are on file in the dean's office, and departmental rules or requirements are on file in each departmental office. The student is responsible for meeting all graduation requirements.

**Grading Systems**

Typically, courses in the University receive letter grades (A,B,C,D,F,I). However, the college recognizes that educational competence may be achieved and demonstrated by experiences other than classroom attendance leading to letter grades. The attention of the student is directed to the following:

1. CLEP and other advance placement examinations.
2. Waiver by either documentations or examination.
3. Off-Campus Term programs.
4. Cooperative Education Program.
5. Independent Study.
Programs Leading to the Baccalaureate Degree

The College offers the Bachelor of Arts degree with majors in Astronomy (AST); Biology (BIO), Botany (BOT), Microbiology (MIC), and Zoology (ZOO); Chemistry (CHM); Geology (GLY); Mathematics (MTH); Physics (PHY); and Interdisciplinary Natural Sciences (INS) with a concentration in one of the above. The College offers the Bachelor of Science degree with majors in Chemistry (CHS), Clinical Chemistry (CHC), Medical Technology (MET), and Physics (PHS). For specific requirements, consult appropriate departmental sections of this bulletin.

PRE-MEDICAL SCIENCES

Modern health care ranges from diagnosis and treatment of disease to basic and applied research. Consequently, the health sciences need individuals with a diversity of educational backgrounds and a wide variety of talents and interests; and the student entering a career in the health sciences has an opportunity for service in a wide range of health care activities.

The pre-medical sciences program at the University of South Florida is administered by the College of Natural Sciences and is designed to assist students seeking entrance into a professional school in medicine, dentistry, veterinary medicine, or optometry. The program is designed to enhance the student's intellectual, personal, and social development. While specific requirements may vary, all professional schools recognize the need for a well-rounded education; therefore, the goal is to develop a perceptive, knowledgeable citizen with a strong foundation in the natural sciences yet broadened and enriched with a background in the social sciences and humanities. Each student in the program is assigned to a Pre-medical Adviser who will provide guidance relative to course selection, admission procedures, and entrance examinations, and who will write letters of evaluation to the professional schools. The student may remain in the program until admitted to a professional school or until he or she seeks other alternatives, even if the time required extends beyond the baccalaureate degree.

Pre-Medical Sciences Program

The pre-medical sciences program prepares the student for admission to a professional school. In addition, pre-medical science students seeking a degree may major in a discipline of personal preference, whether it be in the sciences or non-sciences, and fulfill all requirements in that major for graduation.

The following science courses are the requirements for admission to almost all accredited professional schools:

One year of Biology:
- BSC 2010C (4)
- BSC 2011C (4)
- BSC 2012 (4)

Two years of Chemistry:
1. CHM 2045 (3) or CHM 2055C (5)
2. CHM 2045L (1)
3. CHM 2046 (3)
4. CHM 2046L (1)
5. CHM 2047 (3)
6. CHM 2047L (1)

One year of Physics:
- PHY 2050 (4) or PHY 3040 (3)
- PHY 2050L (1)
- PHY 2051L (1)
- PHY 2052 (4)
- PHY 2052L (1)

In addition to the science requirements it is generally expected that the student will complete three quarters of English and three quarters of Mathematics, preferably including Calculus. CLEP credit is generally not acceptable to professional schools.

Some professional schools require or recommend additional courses. The following science courses are frequently specified:

Biology:
- MCB 3010C (5)
- PCB 4023C (5)
- PCB 4253C (5)
- PCB 3063 (4)
- PCB 4024C (5)
- ZOO 3713C (6)

Chemistry:
- BCH 3033 (4)
- CHM 3400 (3)
- CHM 3401 (3)
- CHM 3120C (5)
- CHM 3120 (4)
- CHM 3401L (1)

Mathematics:
- MAC 2242 (4)
- MAC 2244 (4)
- STA 3023 (5)
- MAC 2243 (4)

Beyond science course requirements and recommendations, it is essential that students pursue courses developing a sense of understanding of cultural and humane values, and basic social problems. The quality of academic performance in preparation for professional school should be of the highest level. A few well-prepared students with exceptional qualifications may be admitted to some professional schools as early as the completion of the junior year of pre-medical work.

B.A. Degree for Medical and Dental Students

Students who are admitted to a medical or dental school after completing their junior year at The University of South Florida may be awarded the B.A. degree in Interdisciplinary Natural Sciences from the College of Natural Sciences subject to the following conditions:

1. Transfer of a minimum of 45 hours in science courses from an approved medical or dental school.
2. In attendance at the University of South Florida, the minimum requirements for the Interdisciplinary Natural Sciences major must be fulfilled as follows:
   A. 135 credit hours with at least a "C" average (2.000) in those credit hours completed at the University of South Florida.
   B. Completion of a sequence of courses constituting a major program with courses in a department of concentration and supporting courses in related
departments. There must be a minimum of 36 credit hours in the discipline of major concentration and a minimum of 24 credit hours in supporting courses in the College of Natural Sciences outside the discipline of major concentration. The 36 credit hours in the discipline of major concentration must be in courses applicable to a major in that department. The 24 credit hours in supporting courses must also be taken in courses applicable to a major in that department and must include a minimum of three courses at the 300 level or above. The student must earn at least a "C" in each course in both major concentration and supporting courses, except for courses graded S/U only.

3. Credit in the following courses:

Biology:
- BSC 2010C (4)
- BSC 2011C (4)
- BSC 2012 (4)

Chemistry:
- CHM 2045 (3)
- CHM 2046L (1)
- CHM 2046 (3)
- CHM 2047L (3)
- CHM 2057L (1)
- CHM 2055C (5)

Physics:
- PHY 2050 (4)
- PHY 2050L (1)
- PHY 2051 (4)
- PHY 2051L (1)
- PHY 2052 (4)
- PHY 2052L (1)
- PHY 3041 (3)
- PHY 3041L (1)
- PHY 3042 (3)
- PHY 3042L (1)

GRADUATE LEVEL DEGREE PROGRAMS

Programs of graduate study are available in every department of the College of Natural Sciences. Students apply for graduate work through the College of Natural Sciences 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 46 and for the Ph.D. degree on page 47. The specific requirements for each department are listed under that department below. For further information regarding admission and the availability of fellowships and assistantships a candidate should write to the appropriate departmental chairperson, University of South Florida, Tampa, Florida 33620.

Master's Degree Programs

The College of Natural Sciences offers graduate programs leading to the Master of Arts degree in the fields of Astronomy (AST), Botany (BOT), Mathematics (MTH), Microbiology (MIC), Physics (PHY), and Zoology (ZOO); and a Master of Science degree in Chemistry (CHM), Geology (GLY), and Marine Science (MSC).

Doctor's Degree Programs

The College of Natural Sciences offers three programs leading to the degree of Doctor of Philosophy:

- Biology (BIO)—This program leads to the Ph.D. in Biology, including the fields of Marine Biology, Systematics, Behavior, Ecology, and Physiology.
- Chemistry (CHM)—This program leads to the Ph.D. in Chemistry, including the fields of Analytical, Biochemistry, Inorganic, Organic, and Physical Chemistry.
- Mathematics (MTH)—This program leads to the Ph.D. in Pure and Applied Mathematics.

College Regulations Governing Graduate Study

The following regulations are in addition to the University regulations governing graduate study found on pages 45 and 48.

Admission. The College of Natural Sciences requires a minimum of a "B" average in the last two years of undergraduate work and a minimum of 1000 (1100 for marine science applicants) on the Graduate Record Examination for admission to any of its graduate programs.

Applicants with a "B" average in the last two years of undergraduate work or a minimum of 1000 on the Graduate Record Examination may be considered for provisional admission subject to departmental recommendation.

Applicants who do not meet either of the above conditions must meet the 10% exception criteria described on page 42 and must have the recommendation of the department offering the degree to be considered for provisional admission.

Registration in Research, Thesis, and/or Dissertation Courses. Registration in courses entitled Directed Research: Masters, or Dissertation: Doctoral must be with the approval of the major professor and the concurrence of the departmental graduate studies coordinator and must be commensurate with each student's research plan. A student who enrolls in courses entitled Thesis: Masters but does not submit a thesis or who enrolls in Dissertation: Doctoral but does not submit a dissertation will not be certified for graduation.

A maximum of 15 credit hours (9 for physics graduate students) of combined thesis, research, and seminar courses may apply towards a degree.

Enrollment Requirements. A student who enrolls in 8 or more credit hours leading to a graduate degree is classified as a full-time student.

Once a major professor has been assigned and/or a student occupies or utilizes significant space or facilities for research or analogous scholarly activity directly pertinent to the generation of his/her thesis, he/she shall enroll for not less than three hours of research and/or thesis and/or dissertation each quarter other than the summer quarter, except that no student shall be required for the purposes of this rule to enroll for more than 8 hours total. Additional requirements may be imposed in any department in the College.

A student must be registered for an appropriate load (in no case fewer than three hours) in the College for the quarter in which all degree requirements are satisfactorily completed.

Additional regulations concerning graduate study may be found in the departmental sections of this catalog or are on file in the office of the dean. The student is responsible for meeting all requirements of his/her degree program.
TEACHER EDUCATION PROGRAMS

The College of Natural Sciences offers B.A. and M.A. degree programs for secondary school teachers and the M.A. degree for junior college teachers.

B.A. Degree Program for Secondary School Teachers:

The College of Natural Sciences in cooperation with the College of Education offers degree programs in Mathematics (MAE), in Botany (BOE), in chemistry (CHE), in Physics (PHE), in Zoology (ZOE), and in Science (SCE). Because requirements exist in both colleges, a student will have an adviser in each college. At the outset the planned courses in mathematics and science must be approved by the student's adviser in the College of Natural Sciences.

There are two options available to the student to satisfy the science portion of the program:

1. The student may complete the requirements of the departmental major. Departmental majors in Botany and Zoology may be found in this section of the catalog under the heading Biology. The departmental requirements of Chemistry, Mathematics, and Physics are found in this section of this catalog under the respective headings in Chemistry, Mathematics, and Physics.

2. The student may complete requirements of the Interdisciplinary Natural Sciences major with concentration in Biology, Chemistry, Physics, and Mathematics. A complete description of this major is found on page 116. This major is particularly appropriate for Science Education majors (SCE).

Prospective students should consult the College of Education portions of this catalog under the heading “Science Education (SCE)” for the required education courses and sample programs.

M.A. Degree Program for Secondary School Teachers:

The College of Natural Sciences in cooperation with the College of Education offers the M.A. degree in Mathematics (MAE) and in Science (SCE). In science, concentrations are available in Biology, Chemistry, and Physics. Because requirements exist in both colleges the student will have an adviser in each college. At the outset the planned courses in mathematics and science must be approved by the student's adviser in the College of Natural Sciences.

The University requirements for the M.A. degree are found on page 46. Mathematics majors must complete a minimum of 51 quarter hours; science majors must complete at least 27 quarter hours in the discipline of concentration. For requirements in education the student should consult the College of Education portion of this catalog entitled “Master's Level Degree Programs—Science Education (SCE).”

M.A. Degree Program for Junior College Teachers:

The M.A. degree program for junior college teachers is available in the College of Natural Sciences with specializations in astronomy, biology, chemistry, geology, mathematics, or physics.

The student may complete the M.A. degree in a program offered jointly by the College of Natural Sciences and the College of Education. This program requires 36 hours in mathematics or science specialization courses which must be approved by the student's adviser in the College of Natural Sciences; 9 hours are required in Professional Education courses and 1-9 hours are required in internship depending on the amount of teaching experience of the student. For requirements in education, the student should consult the College of Education portion of the catalog entitled “Junior College Teaching Program.”

CURRICULA

■ ASTRONOMY (AST)

The Department of Astronomy offers programs leading to the degrees of Bachelor of Arts and Master of Arts in astronomy. Students who graduate with an undergraduate degree in astronomy are expected to have a good foundation not only in astronomy but also in mathematics and physics, with the emphasis varying with the individual. They are also trained to become competent computer programmers. Employment opportunities exist at various government agencies, in private industry, and as teachers in public and private schools. Students who receive an undergraduate degree in astronomy will not necessarily continue to become professional astronomers. Because of the breadth of their education, astronomy majors can take up a variety of post-college careers including graduate study in astronomy, mathematics, or physics.

The graduate program leading to a master's degree emphasizes specialization in various fields of astrophysics and astronomy. Most students continue to work for a master's degree after receiving the bachelor's. Employment opportunities at the master's level exist in the same way as they do on the bachelor's level. In addition the master's degree is regarded at some educational institutions as a terminal degree for teachers on the junior college or sometimes even college level.

The Astronomy Department has at this time 6 faculty members, all of whom are actively engaged in original research. The facilities include a 26-inch Schmidt-Cassegrain telescope with a focal length of 30", as well as several smaller telescopes and auxiliary equipment. Faculty and students have access to the IBM 360-375 computer.

Requirements for the B.A. Degree:

1. Astronomy Courses (34 cr. hrs. of upper level courses minimum).
   
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AST 3017</td>
<td>4</td>
</tr>
<tr>
<td>AST 3025L</td>
<td>1</td>
</tr>
<tr>
<td>AST 4214</td>
<td>5</td>
</tr>
<tr>
<td>AST 3018</td>
<td>4</td>
</tr>
<tr>
<td>AST 3026L</td>
<td>2</td>
</tr>
<tr>
<td>AST 4622</td>
<td>4</td>
</tr>
<tr>
<td>AST 3019</td>
<td>4</td>
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A minimum of 8 cr. hrs. from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AST 4165</td>
<td>4</td>
</tr>
<tr>
<td>AST 3652</td>
<td>3</td>
</tr>
<tr>
<td>AST 5506</td>
<td>5</td>
</tr>
<tr>
<td>AST 5205</td>
<td>4</td>
</tr>
<tr>
<td>AST 5231</td>
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</tr>
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<td>AST 5932</td>
<td>1-6</td>
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<tr>
<td>AST 3043</td>
<td>5</td>
</tr>
<tr>
<td>AST 5274</td>
<td>4</td>
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</tbody>
</table>

Faculty and students have access to the IBM 360-375 computer.
**Teacher Education Programs:**

For information concerning the M.A. degree for junior college teachers, see above.

**Requirements for the M.A. Degree:**

General requirements for graduate work are given on page 42.

A minimum of 45 credits (excluding AST 6945) must include at least 24 for courses numbered 6000 or higher and at least 18 for structured astronomy courses numbered 5000 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 below 5000 which the student takes in order to make up for his initial deficiencies in this respect. Since candidates for the graduate degree 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 and must be based on original work. In lieu of the thesis, however, the student may be permitted to enroll for at least 8 additional hours on a level of 5000 or above beyond the present requirements. It will be expected that the student will be assigned to a faculty member and perform research under this faculty member's direction. 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. This last requirement may, in exceptional cases, be replaced by an equivalent one agreeable to the student and the department chairperson.

### BIOLOGY (BIO/BOT/MIC/ZOO)

In addition to a set of basic courses in biology, students must have a thorough preparation in other areas of natural sciences in order to be competitive for jobs or for further study beyond the baccalaureate. A modern biology curriculum is built on a foundation of mathematics, chemistry and physics.

Four specific Bachelor of Arts degrees (Biology, Botany, Microbiology, and Zoology) are available for students interested in the biological sciences. They are all preparatory for careers in teaching, agriculture, medicine, dentistry, marine biology, biotechnology, or for post-graduate study in any of the various life sciences. The Department attempts to schedule sequences of 5000 level courses which allow seniors in the Biology program to concentrate in such areas as: Ecology, Cell & Molecular Biology, Physiology, and Marine Biology. Students should study the requirements listed below and then make maximum use of the vigorous advising program maintained by the Department in structuring their total program. A reading knowledge of a modern foreign language (German, French, or Russian) is strongly recommended for those who intend to enter graduate school.

#### Requirements for the B.A. Degree:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOLOGY MAJOR (BIO) (25 er. hrs.)</td>
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</tr>
<tr>
<td>BOT 3010</td>
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</tr>
<tr>
<td>BOT 3713C</td>
<td>5</td>
</tr>
<tr>
<td>or BOT 4223C</td>
<td>5</td>
</tr>
<tr>
<td>or BOT 4353C</td>
<td>5</td>
</tr>
<tr>
<td>or BOT 4503</td>
<td>0</td>
</tr>
<tr>
<td>or BOT 4933</td>
<td>1</td>
</tr>
<tr>
<td>or Biography Department Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

**MICROBIOLOGY MAJOR (MIC) (25-27 cr. hrs.)**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>APB 4033C</td>
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</tr>
<tr>
<td>or MCB 5206</td>
<td>4</td>
</tr>
<tr>
<td>or PCB 5235C</td>
<td>4</td>
</tr>
<tr>
<td>or MCB 3010C</td>
<td>5</td>
</tr>
<tr>
<td>or MCB 4030L</td>
<td>0</td>
</tr>
<tr>
<td>or MCB 4115</td>
<td>4</td>
</tr>
<tr>
<td>or MCB 4163L</td>
<td>3</td>
</tr>
<tr>
<td>or MCB 4505C</td>
<td>4</td>
</tr>
<tr>
<td>or MCB 4404</td>
<td>5</td>
</tr>
<tr>
<td>or MCB 4934</td>
<td>1</td>
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One of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>APB 5575C</td>
<td>(5)</td>
</tr>
<tr>
<td>or BOT 5405C</td>
<td>5</td>
</tr>
<tr>
<td>or ZOO 5235C</td>
<td>5</td>
</tr>
<tr>
<td>or BOT 4434C</td>
<td>5</td>
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</table>

NOTE: Every microbiology major should obtain a recommended course sequence from a member of the microbiology faculty in order to avoid possible schedule problems.

**ZOOLOGY MAJOR (ZOO) (15 cr. hrs.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PCB 4253C</td>
<td>5</td>
</tr>
<tr>
<td>or ZOO 3203C</td>
<td>5</td>
</tr>
<tr>
<td>and PCB 4743C</td>
<td>0</td>
</tr>
<tr>
<td>or Any one lab course in vertebrate biology</td>
<td></td>
</tr>
</tbody>
</table>
Mathematics
Three courses in mathematics chosen from the following to attain 12 credits:
MAC 2242 (4) MAC 3412 (4) MAS 3114 (4)
MAC 2243 (4) MAC 3413 (4) STA 3023 (4)
MAC 2244 (4) MAC 3414 (4) STA 3404 (5)
MAS 3103 (4) STA 3502 (5)

III. General Distribution Requirements (Required for all B.A. Degrees, 60 cr.)
Each student is required to satisfy the General Distribution requirements of the College of Natural Sciences (see page 108). The selection of courses within the requirement is to be done in conference with Biology Department advisers.

IV. Liberal Education Electives
The student must satisfy 24 hours of liberal education electives as described in item 3 of the graduation requirements of the College of Natural Sciences (See page 108).

V. Free Electives (including General Distribution waivers) can be taken over and above major requirements and major electives to complete a 180 hour program.

Teacher Education Programs:
For information concerning the degree programs for secondary school teachers and junior colleges, see pages 75, 81, and 84 of this Catalog.

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. Undergraduates interested in specializing in marine biology may do so by taking marine-oriented courses offered within the Department.

Appropriate courses include:
BOT 5185C (Marine Botany)
BOT 5405C (Phycology)
ZOO 3203C (Introductory Invertebrate Zoology)
ZOO 5285C (Oceanography)
ZOO 5455C (Ichthyology)
ZOO 5555C (Marine Animal Ecology)
ZOO 5815C (Zoogeography)

The Biology Department offers M.A. degrees and the Ph.D. degree which allow specialization in marine biology.

Requirements for the M.A. Degree:
General requirements for graduate work are given on page 46.
Major programs are offered in Botany, Microbiology, or Zoology. The M.A. degree may be obtained by completion of a research thesis or by appropriate substitution of structured courses and an approved paper. The satisfactory completion of all general requirements and those specifically stated below are the responsibility of the individual student.

The selection of a committee must occur within the first three academic quarters after admission. Failure to do so will be cause for termination. The choosing of a major professor includes acceptance of the student by the faculty member. Until selection is accomplished, the departmental graduate coordinator will function as the student's adviser. The three-member supervisory committee, as approved by the departmental chairman and college dean, must include one faculty member from outside the student's area of specialization.

For students enrolled in the non-thesis program, a 45 credit hour minimum is required at the 5000-6000 level; 40 credits must be in formally structured courses. 24 credits must be at the 6000 level or above; 22 must be in biology.

A final comprehensive examination on basic biology is required for all students. This examination is open to all departmental faculty and is normally taken after the completion of formal course work and at least one quarter before thesis presentation.

In some cases, the ability to translate pertinent scientific literature from a foreign language must be demonstrated before taking the comprehensive examination.

Requirements for the Ph.D. Degree:
General requirements are given on page 47.
A doctorate program in biology is offered. Areas of specialization for the Ph.D. are marine biology, ecology (tropical ecology, population ecology, and physiological ecology), physiology (cellular physiology, microbial physiology, neurophysiology) systematics, and behavior. On admission to the Department for doctoral study, the student shall select a major professor from the departmental faculty for the direction of his program. A five-member supervisory committee will be named and approved by the Department chairman and College Dean. At least one member of the committee shall be from beyond the student's area of specialization. The committee shall approve the courses of study, choice of language skills, and the supervision of the student's research and dissertation.

It is expected that students will have had undergraduate training comparable to that of a USF undergraduate in biology.

A departmental requirement of a minimum of 30 credit hours are required in formally structured graduate-level courses from more than one faculty member, as well as any additional courses necessary to the needs of the individual's program as determined by the supervisory committee. A maximum of 9 hours of formally structured graduate-level courses may be transferred from other graduate institutions. Fifteen hours from the master's degree program at USF may be applied toward meeting the above requirements with approval of the supervisory committee.

Some time before the end of the sixth quarter, a student must have demonstrated a reading proficiency in two foreign languages or approved special work. Language selection will be by the supervisory committee and testing by either the faculty of biology or foreign languages. After the language examination and before the end of the sixth quarter, the student shall select a major professor from the departmental faculty. The preliminary examination must be completed. The initial portion of the comprehensive examination must be completed within three academic quarters.

After completion of the above requirements, the student may be admitted to candidacy upon approval of the Dean of the College and the Director of Graduate Studies. One academic year of satisfactory service as a teaching assistant is recommended of all candidates. Also, a public seminar presentation of the dissertation during the final quarter's work is required.

A final oral examination will be administered and evaluated by the supervisory committee. Emphasis will be upon the dissertation, the student's mastery of his general field of research, and the application of fundamental biological principles to the dissertation. The examination is conducted by a neutral and nonvoting convener and the candidate shall be subject to questioning by any biology faculty member in attendance.

Graduate Application Deadlines:
Applications must be completed by March 10th for Quarter 1 applicants who wish to be considered for assistantships. All other applications must be completed by the fourth week of the quarter preceding the one for which you are applying.

■ CHEMISTRY (CHS/CHM/CHC)

The Department of Chemistry offers three degrees at the baccalaureate level, Bachelor of Arts degree in Chemistry, Bachelor
of Science degree in Chemistry, and Bachelor of Science degree in Clinical Chemistry, and two degrees, Master of Science and Doctor of Philosophy, each with specialization in the areas of analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry, at the graduate level. The chemistry faculty is comprised of 27 full-time senior faculty members, all of whom hold the Ph.D. degree. A comparable number of teaching assistants, generally graduate students enrolled in the Ph.D. program, serve as instructors in the laboratories. The combination of a large and strong faculty with a wide variety of courses and electives provides students with programs of study which can be tailored to fit individual needs while maintaining a sound background in all general aspects of chemistry.

The Bachelor of Science degree in Chemistry (CHS) is a rigorous program which supplies the foundation in chemistry required for both the student who begins a chemical vocation immediately upon graduation as well as the one who pursues advanced study in chemistry or related areas. In accord with this goal the curriculum for the B.S. degree meets the requirements for degree certification by the American Chemical Society.

The Bachelor of Arts degree (CHM) provides a course of study designed for the student who does not intend to become a professional chemist but whose career goals require a thorough understanding of chemistry. Inherent in this program is a high degree of flexibility which permits tailoring a course of study to the student's own educational objectives. As such it offers considerable advantages to pre-professional students planning careers in medicine and the other health-related fields and an excellent preparation for primary and secondary school teachers of chemistry or physical science. The B.A. student whose goals change in the direction of graduate work in chemistry should supplement this curriculum by addition and/or substitution of a selection of advanced courses from the B.S. program.

The Bachelor of Science degree in Clinical Chemistry (CHC) offered by the Department of Chemistry, one of only a few such programs in the country, is specifically designed to train personnel for this new and growing field of the medical profession; however, the strong scientific background and specific technical expertise provided by this program also afford the student an excellent preparation for graduate study in clinical chemistry, biochemistry, or medicine. Interested students should see the Coordinator of the Clinical Chemistry Program in the Department of Chemistry for further information.

In graduate work, the excellent physical facilities and very low student-teacher ratio combine to afford unique opportunities for advanced study in chemistry. In addition to the five traditional fields, analytical chemistry, biochemistry, inorganic, organic, and physical chemistry, research opportunities are also available in such interdisciplinary and specialized areas as bio-organic and bio-inorganic chemistry, clinical chemistry, environmental chemistry, lasers and photochemistry, marine chemistry, photoelectron spectroscopy (ESCA), and pharmaceutical chemistry.

**Requirements for the Baccalaureate Degree:**

I. Chemistry Courses*

<table>
<thead>
<tr>
<th>B.S. CHEMISTRY (CHS) (64 cr. hrs.)</th>
<th>B.S. CHEMISTRY (CHC) (66 cr. hrs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 3033 (4) \ CHM 3211 (3)</td>
<td>BCH 3033 (4) \ CHM 3210L (2)</td>
</tr>
<tr>
<td>CHM 2045 (3) \ CHM 3211L (2)</td>
<td>CHM 2045 (3) \ CHM 3212L (2)</td>
</tr>
<tr>
<td>CHM 2045L (1) \ CHM 3213 (2)</td>
<td>CHM 2046 (3) \ CHM 3212L (4)</td>
</tr>
<tr>
<td>CHM 2046L (1) \ CHM 3211L (2)</td>
<td>CHM 2046L (1) \ CHM 4130C (4)</td>
</tr>
<tr>
<td>CHM 2047 (3) \ CHM 4131C (4)</td>
<td>CHM 2047L (1) \ CHM 4132C (3)</td>
</tr>
<tr>
<td>CHM 2047L (1) \ CHM 4410L (4)</td>
<td>or CHM 2055C (5) \ CHM 4411L (4)</td>
</tr>
<tr>
<td>CHM 2055C (5) \ CHM 4412L (4)</td>
<td>CHM 2056C (5) \ CHM 4610L (4)</td>
</tr>
<tr>
<td>CHM 3120C (5) \ CHM 4610L (4)</td>
<td>CHM 3120L (2)</td>
</tr>
<tr>
<td>CHM 3120L (2)</td>
<td>CHM 3210 (3)</td>
</tr>
</tbody>
</table>

II. Supporting Courses in the Natural Sciences

<table>
<thead>
<tr>
<th>B.S. CHEMISTRY (CHM) (35 cr. hrs.)</th>
<th>B.S. CHEMISTRY (CHC) (55-59 cr. hrs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC 2243 (4) \ PHY 2050L (1) \ PHY 2052 (4)</td>
<td>BSC 2010C (4) \ PHY 2050 (4)</td>
</tr>
<tr>
<td>MAC 2244 (4) \ PHY 2051 (4) \ PHY 2052L (1)</td>
<td>BSC 2011C (4) \ PHY 2051L (1)</td>
</tr>
<tr>
<td>PHY 2050 (4) \ PHY 2051L (1)</td>
<td>BSC 2012 (4) \ PHY 2051 (4)</td>
</tr>
<tr>
<td>Electives (must be acceptable for credit towards a Natural Science College discipline major)</td>
<td>COC 3300 (3) \ PHY 2051L (1)</td>
</tr>
</tbody>
</table>

III. General Distribution Courses

(60 cr. hrs. excluding waivers)

The student is required to complete the General Distribution requirements of the College of Natural Sciences (see page 108).

IV. Liberal Education Electives

The student must satisfy 24 hours of liberal education electives as described in item 3 of the graduation
requirements of the College of Natural Sciences (see page 108).

V. Free Electives† (Including General Distribution waivers)

B.A. CHEMISTRY (CHM); 43 cr. hrs.

B.S. CHEMISTRY (CHS); 35-38 cr. hrs.

B.S. CLINICAL CHEMISTRY (CHC); 6-12 cr. hrs.

The required sequence of Chemistry courses should be started immediately in the freshman year and the mathematics and physics requirements should be completed before the junior year so that CHM 3400 (B.A. degree) or CHM 4410 (B.S. degree) can be commenced at that time.

† Students taking CHM 2055C-CHM 2056C must add 2 more hours of free electives.

Teacher Education Programs:

For information concerning the degree programs for secondary school teachers and junior college teachers, see pages 75, 81, and 84 of this catalog.

Requirements for the M.S. Degree:

General requirements for graduate work are given on page 46. All entering graduate students who have no advanced work beyond a B.A. or B.S. will be required to take the core courses in each of the five areas: Analytical, Biochemistry, Inorganic, Organic, and Physical Chemistry. This requirement can be waived by recommendation of the supervisory 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:

BCH 5065  CHM 5425  CHM 5621  CHM 6150  CHM 5225

Beyond the required core courses, the curriculum for a chemistry major will vary with the area of the thesis. The specific course requirements will be determined by the supervisory committee and the proposed research, in consonance with the regulations of the University.

In order to gain the experience that comes from teaching, satisfactory service as a teaching assistant for two academic years is required (unless a specific exemption is recommended by the supervisory committee).

Comprehensive Examination

Each student must pass the written comprehensive examinations in three of the five areas: Analytical, Biochemistry, Inorganic, Organic, and Physical Chemistry. Each examination will be administered by the faculty of that area and will be from one to three hours duration. Each examination will be graded by the members of the respective areas, each arriving at a fail-pass-high-pass verdict. A student may repeat any or all the examinations provided that 3 have been passed by the time five quarters have elapsed since enrollment as a graduate student. The exams are offered four times each year, once between each quarter (except in the summer when the exams will be offered the first week of Quarter IV.) Again, it is to be noted that this requirement, as for the M.S. degree, must be completed before the beginning of the sixth quarter. 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. Qualifying examinations should be attempted by students as soon as possible. These examinations are intended to test for broad and basic knowledge in each area at the Bachelor of Science level.

Language Examinations

Before a student is eligible to qualify for candidacy for the Ph.D. degree, 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)—must be demonstrated; or a reading knowledge in one of these languages and proficiency in a skill or specialization outside the discipline of chemistry must be demonstrated. 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 or 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.

Requirements for the Ph.D. Degree:

General requirements for graduate work are given on page 47. While there are no specific course requirements for the Ph.D. degree in chemistry, each student must take at least 16 hours of structured 6000-level chemistry courses. No more than four hours of (CHM 6939) may be used to satisfy this requirement. The candidate, with the help of the adviser and the approval of the supervisory 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 the supervisory 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.

In order to gain the experience that comes from teaching, satisfactory service as a teaching assistant for two academic years is required (unless a specific exemption is recommended by the supervisory committee).

Qualifying Examinations

The Qualifying Examination 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 pass the examinations in four out of five areas, and must also "high-pass" two of these examinations (one of which is in the major area). In other words, the Ph.D. candidate must demonstrate a very real grasp of the principles in the major area and one other area (probably related to the 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 four have been passed, including two "high-passed," by the time five quarters have elapsed from enrollment as a graduate student. The exams are offered four times each year, once between each quarter (except in the summer when the exams will be offered the first week of Quarter IV.) Again, it is to be noted that this requirement, as for the M.S. degree, must be completed before the beginning of the sixth quarter. 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. Qualifying examinations should be attempted by students as soon as possible. These examinations are intended to test for broad and basic knowledge in each area at the Bachelor of Science level.

Major Comprehensive Examination

A comprehensive major examination will be required of Ph.D. candidates sometime after satisfactory completion of the qualifying examinations. This examination must be taken one year before graduation.
Advancement of Candidacy

Completion of all the foregoing requirements admits the student to candidacy for the Ph.D.

Final Thesis Defense

When the Supervisory Committee has inspected the final draft (final unbound form: typewritten and ready for duplication with the exception of possible minor corrections) of the dissertation and finds it suitable for presentation, the Major Professor will complete a form requesting the scheduling and announcing of the final oral examination. The request form will be submitted via the department chairperson to the College Dean and the Director of Graduate Studies for approval. The final oral examination must be held at least three weeks before the end of the quarter in which the student is to be awarded the degree. The required copies of the completed dissertation signed by the Committee must be received by the Director of Graduate Studies at least two weeks before the end of the quarter.

The Examination Committee shall consist of a chairperson and the members of the student's Supervisory Committee including the Major Professor(s). The Chairperson of the Examination Committee shall be appointed by the Dean of the College and shall not be a member of the student's Supervisory Committee or the department or program in which the degree is sought.

The candidate may expect questions concerning the details and significance of the research after the oral presentation which is open to the public. Final approval of the candidate's degree will require approval by a majority of the Examining Committee, which shall include the Chairperson.

GEOLGY (GLY)

Geology is one of the broadest of all sciences because of its dependence on fundamentals of biology, chemistry, mathematics, and physics as applied to the study of the earth. As a result, undergraduate students are expected to obtain a broad background in the other sciences as well as a concentration in geology. This bachelor's degree program is designed to provide the geology major with a broad foundation that will prepare him for employment in industry or with various governmental agencies as well as the necessary training to continue study in graduate school.

The graduate program in geology allows the student to specialize in nearly all of the major areas of concentration. Because of the geographic and geologic location of the University in a rapidly expanding urban center of coastal Florida, there are a number of areas of specialization which are being emphasized. These include coastal geology, hydrogeology, low temperature and pollution geochemistry, applied geophysics, geology of carbonate rocks and phosphate deposits. All of these are closely related to local problems of the environment.

Requirements for the B.A. Degree:

I. Geology Courses (51 cr. hrs.)

| GLY 2016 (4) | GLY 3400 (4) | GLY 4210 (4) |
| GLY 2017 (4) | GLY 3610 (5) | GLY 4220 (4) |
| GLY 2019 (4) | GLY 4200 (4) | GLY 4550 (4) |

GLY electives (12)

A minimum of 2 cr. hrs. from:

GLY 4920 (1)

II. Supporting Courses (33-40 cr. hrs.)

| CHM 2045 | CHM 2046L |
| CHM 2045L | CHM 2047 |
| CHM 2046 | CHM 2047L(12) |
| MAC, MAS, STA (12) |

(Three courses in mathematics chosen from the following to attain 12 credits: MAC 2243, 2244, 3411, 3412, 3413, 3281, 3282, 3283, MAS 3103, STA 3023)

III. General Distribution Courses (60 cr. hrs. excluding waivers).

- The student is required to satisfy the General Distribution requirements of the College of Natural Sciences. (See page 108).

IV. Liberal Education Electives

The student must satisfy 24 hours of liberal education electives as described in item 3 of the graduation requirements of the College of Natural Sciences (see page 108).

V. Free Electives (Including Distribution waivers) (40-47 cr. hrs.)

The student will choose, in consultation with his Geology Adviser, such courses in the College of Natural Sciences that support his major interest within the field of Geology. A foreign language, preferably French, German or Russian, is strongly recommended, especially for those students who anticipate continuing for a doctorate in graduate school. All geology majors are strongly urged to attend a summer field camp.

An entering student anticipating a major in Geology is advised to enroll in:

| GLL 2016 | CHM 2045L |
| GLL 2017 | CHM 2046 |
| GLL 2100 | CHM 2046L |
| and CHM 2045 |

in the freshman year and to seek curriculum counseling with a Geology adviser.

Teacher Education Programs:

Prospective elementary and secondary school teachers desiring to teach science should include basic courses in Geology and related sciences as part of their curriculum.

Requirements for the M.S. Degree:

Requirements for admission to the Division of Graduate Studies and general graduate curriculum guidelines are given on pages 42-47.

Students are admitted for graduate work in Geology if they present the requisite background in Geology and supporting sciences. The bachelor's degree with a major in Geology or a major in other sciences with strong supporting program in geosciences is required. Students who wish to enter the graduate program in Geology without the proper background will be required to take some undergraduate courses without receiving credit toward their master's program. In addition, a formal summer field course is strongly recommended.

The curriculum for a Geology graduate student will vary depending on the area of interest and thesis topic of the individual. A minimum of 45 credit hours (excluding GLY 6940) is required for the master's degree of which a minimum of 24 credits must be in courses numbered 6000 or above. All graduate students must take Graduate Seminar (GLY 6931) at least three times and GLY 6933 two times. A written thesis in the student's field of specialization is required. A comprehensive oral qualifying exam is to be taken by the end of the third quarter in the program. An oral thesis defense is also required.

INTERDISCIPLINARY NATURAL SCIENCES (INS)

The Bachelor of Arts in the Interdisciplinary Natural Sciences major is designed for majors in an interdisciplinary program in the college and for majors in Science Education and Mathematics Education. For information on teacher certification in science or mathematics, prospective teachers should consult the section entitled Teacher Education Programs on page 111, and also consult the College of Education section of the catalog.

The requirements for graduation for this degree are the same as
those contained on page 108 except that item 1 of the requirement is altered as follows:

1a. Completion of a major program consisting of a minimum of 68 hours in College of Natural Sciences courses. In these hours there must be a minimum of 36 credit hours in a discipline of major concentration and a minimum of 24 credit hours in supporting courses in the College of Natural Sciences outside the discipline of major concentration. All courses in the major program must be applicable to a major in that department and must have the approval of the student's adviser. At least three of the supporting courses must be at the 3000 level or above. The student must earn a 2.0 grade point average in all attempted course work of both major concentration and supporting courses and must complete at least 45 hours after acceptance into the major, all of which must have prior approval of his adviser.

■ MARINE SCIENCE (MSC)

Some of the most important research currently being carried out in the Gulf of Mexico is centered at the University's Department of Marine Science. There, biologists, chemists, physicists and geologists work together to bring greater understanding of not only the Gulf but all the seas of the world. The department offers courses leading to a master's degree in Marine Science. Degree candidates study and work with the researchers who have made the department's Bayboro St. Petersburg headquarters a major ocean research center. The research interests of the department are widespread and include interdisciplinary studies of estuarine environments, shelf and deep water investigations, hydrodynamic modelling, nutrient cycles, benthic ecology, mariculture, and marine policy. The department has excellent research and classroom facilities on the downtown St. Petersburg waterfront, including a fleet of small vessels ranging from 16 to 36 feet in length. Deep water studies are conducted using the State-chartered Bellowis, or oceanographic vessels of opportunity.

Marine scientists traditionally specialize in one of four basic research areas: marine biology, marine chemistry, marine geology, or physical oceanography. Thus, while the degree program in Marine Science is at the master's level, students may prepare for graduate work by obtaining a baccalaureate degree in one of these four areas. By a suitable choice of marine oriented elective courses, a major in Biology, Chemistry, Geology, or Physics can be an excellent vehicle for entry into a graduate program. Potential marine science majors should consult with an undergraduate adviser concerning these baccalaureate majors.

The field of Marine Science is destined to grow in all its subdivisions and offers opportunities for individuals as our use of the sea expands.

Requirements for the M.S. Degree:

General requirements are given on pages 42-47. A minimum of 45 credits must include OCC 5050, OCG 5050, OCP 5051, OCB 5050 unless the student, as determined by the graduate committee, has had the equivalent of one or more of these courses.

The student may emphasize biological, geological, chemical, or physical oceanography, or marine policy through his thesis research and course work. A thesis is required but a foreign language is not.

Courses taken in addition to those required are determined by the area of specialization in consultation with the students' graduate committee. This may result in a student spending one or two quarters on the Tampa campus taking courses in those departments most closely related to his specialty. Admissions materials of students entering Quarter I should reach the department by March 15. For students entering Quarters II and III, materials should be in by October 15 and December 1, respectively. Quarter IV admissions are not usually accepted. Additional rules are available in the Marine Science Department Handbook which is available in the Department Office.

■ MATHEMATICS (MTH)

The Department of Mathematics offers a diversity of courses designed not only to enable the student to pursue a profession in mathematics itself, but also to enhance his competence in the fields of engineering, the physical sciences, the life sciences, and the social sciences. The Department offers programs leading to the B.A., M.A., and Ph.D. degrees. The undergraduate program emphasizes the broad nature of modern mathematics and its close association with the real world. The program is designed to prepare students for entry into graduate school or careers in industry or secondary education.

The Department has a flexible Ph.D. program which is designed to encourage students to take an active role in the shaping of their own curricula. This flexibility is coupled with a desire to promote the interdisciplinary research. In cooperation with the Departments of Astronomy, Marine Science, and Physics, and the Colleges of Engineering and Medicine, the Department offers special Ph.D. programs in the applications of mathematics.

The Department is composed of four areas of concentration. These areas are as follows:

1. Algebra and Topology
   Number theory, algebraic coding theory, general topology, topological semigroups.

2. Analysis
   Real analysis, complex analysis, abstract harmonic analysis, abstract measure theory, approximations and expansions, functional analysis, geometric function theory.

3. Applied Mathematics and Computer Science
   Analysis of algorithms, differential equations, integral equations, numerical analysis.

4. Statistics and Stochastic Systems
   Biomathematics, theory of probability and statistics, reliability theory, stochastic modeling in the life sciences and engineering, stochastic systems and time series.

There are 27 faculty members in the Department and about 50 graduate students. The graduate program is young and still in the developmental stage. While programs in the more traditional areas of pure mathematics are offered, the Department is committed to emphasizing applied mathematics at both the graduate and undergraduate levels. For both undergraduate and graduate work students and faculty have access to the university’s computer, an IBM 360/375.

Requirements for the B.A. Degree:

The courses taken to satisfy the Group I and Group II requirements below will constitute the major program referred to in the general graduation requirement of the College of Natural Sciences.

I. Mathematics Requirements (47 cr. hrs.)

- Majors must complete at least 47 credits in mathematics courses above the 1000 level, including:
  - MAC 3411 (5) MAC 3414 (4) MHF 3102 (3)
  - MAC 3412 (4)
  - MAC 3413 (4) MAS 3103 (4)

In addition, except for majors in mathematics for teaching, the following sequence is required:

- MAA 4211 (3) MAA 4212 (3) MAS 4156 (3)

Majors in mathematics for teaching must have:

- MTG 4212 (3) and MTG 4213 (3)

Suggested upper level courses for a major in mathematics are:

- MAA 5402 (4) MAS 5146 (4) STA 4442 (3)
- MAD 4401 (4) MAS 5311 (4) STA 5326 (3)
- MAP 4302 (4) MTG 5316 (4)

Variation in course selection for special needs is to be done in consultation with the appointed adviser.

II. Mathematics Related Courses (21-26 cr. hrs.)

- Majors, except for majors in mathematics for teaching, must take two of the following sequences, one of which must be in the College of Natural Sciences:
1. AST 3017, AST 3018, AST 3019
2. BSC 2010C, BSC 2011C, BSC 2012
3. CHM 2045, CHM 2045L, CHM 2046, CHM 2046L, CHM 2047, CHM 2047L or CHM 2055C, CHM 2056C
4. GLY 2016, GLY 2017, GLY 2100
5. ECO 2023, ECO 2013 and one of ECO 3101 or ECO 3203
6. EGN 3373, EGN 3374, EGN 3375
7. EGN 3343, EGN 3344 and one of EMC 3103 or EMC 3117
8. EGN 3313, EGN 3321, EGN 3331
9. PHY 3040, PHY 3040L, PHY 3041, PHY 3041L and PHY 3042, PHY 3042L
10. PSY 2012, PSY 3013, PSY 3213

The course of study is flexible and interdisciplinary work is encouraged.

The areas of specialization include the following:
- Algebra and Topology
- Analysis
- Applied Mathematics and Computer Science
- Statistics and Stochastic Systems

Each candidate for the M.A. degree is required to pass a written examination in three of the following subjects:
- Algebra (MAS 5146, MAS 5311, MAS 5312)
- Applied Mathematics (MAP 5406, MAP 5407)
- Applied Statistical Methods (STA 5166, STA 5167)
- Complex Analysis (MAA 5402, MAA 5403, or MAA 5403, MAA 5405)
- Differential Equations (MAP 5316, MAP 5317)
- Probability Theory (STA 5446, STA 5447)
- Real Analysis (MAA 5306, MAA 5307)
- Topology (MTG 5316, MTG 5317)

Each examination will cover the prescribed contents of the courses listed above.

A reading knowledge of either French, German or Russian is required. Computer Science may be substituted for the language requirement.

For specific program requirements, the student should consult the Department Chairperson.

Requirements for the Ph.D. Degree:
In addition to the general University requirements for the Ph.D. degree, on page 47, the Mathematics department requires the following:

1. Qualifying Examinations
   Each doctoral student must pass at the Ph.D. level a written examination in four of the subjects listed under the Requirements for the M.A. degree.

2. Foreign Language Requirement
   Each student must pass an examination in two of the three languages: French, German or Russian. Computer Science may be substituted for one of the languages.

3. Course Requirements
   The student’s program of study must meet the course requirements for the M.A. degree. Other course requirements will be determined by the student’s Supervisory Committee.

4. Specialization Examination
   This examination shall be administered by the student’s Supervisory Committee after he has passed the qualifying examinations, the language requirements, and has completed all course requirements. The composition and scheduling of this examination shall be determined by the Supervisory Committee and may be written and/or oral.

5. For specific program requirements, the student should consult the chairperson of the Department of Mathematics.

6. The student must submit a dissertation to be approved by the Supervisory Committee.

Special accommodations may be made for students with interest in interdisciplinary areas.

Teacher Education Programs:
For information concerning the degree programs for secondary school teachers and junior college teachers, see page 75, 81, and 84 of this Bulletin.

Requirements for the M.A. Degree:
General requirements for graduate work are given on page 46. A thesis is optional. The thesis program requires a minimum of 45 credits of course work (excluding MAT 6945), 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 6000 or above and the program must total at least 45 credits.

The course of study is flexible and interdisciplinary work is encouraged.

The areas of specialization include the following:
- Algebra and Topology
- Analysis
- Applied Mathematics and Computer Science
- Statistics and Stochastic Systems

Each candidate for the M.A. degree is required to pass a written examination in three of the following subjects:
- Algebra (MAS 5146, MAS 5311, MAS 5312)
MEDICAL TECHNOLOGY (MET)

Medical Technology is one of the growing professions associated with advances in modern medical science. Working in the clinical laboratory, the medical technologist performs chemical, microscopic, bacteriologic, and other scientific tests to help track the cause and treatment of disease. This talent requires specialized training and a baccalaureate degree is essential preparation for certification as a medical technologist.

The University of South Florida offers a four-year program leading to the Bachelor of Science degree in Medical Technology. A student electing to major in Medical Technology will spend the first three years of the program on the campus of the University of South Florida; the fourth year (12 months) will be spent in one of the affiliated hospitals or clinical laboratories. Admission to the fourth year is limited by the number of openings in the affiliated hospitals. Selection of interns is made by the hospitals.

During the first three years, the medical technology student will complete the liberal arts and basic science requirements for entrance into the fourth year of the program for clinical training. To remain in good standing as a Medical Technology major during this period, a reasonable grade point average, determined by the College of Natural Sciences, must be maintained. To be eligible for entrance into the program's fourth year, the student must have completed not less than 135 credit hours of work (excluding physical education courses). Of these hours, at least 30 credit hours must be from the College of Natural Science at the University of South Florida (in courses approved by the Director of the Medical Technology Program). The following courses must be included in the three years of work which precedes the fourth year of clinical training:

1. Biological Sciences
   A minimum of 24 hours is required with at least one course in microbiology. Physiology (PCB 3700 or PCB 4743C) is strongly recommended.

2. Chemistry
   A minimum of 24 hours is required including organic chemistry. Biochemistry (BCH 3033) and Elementary Analytical Chemistry (CHM 3120C) are strongly recommended.

3. Physics
   A minimum of 12 hours (one full-year majors-type course) is required.

4. Mathematics
   One course in mathematics (above the level of MGF 1203) is required. A year of math or its equivalent is strongly recommended.

5. General Distribution Requirements
   Courses satisfying the general distribution requirements of the College of Natural Sciences.

6. Courses in non-science fields to insure a broad background.

Upon successful completion of this curriculum, recommendations by the College, and acceptance by one of the affiliated hospitals or clinical laboratories the student will complete 12 continuous months of training at that hospital or laboratory. This training period usually begins in early August or September of each year. During this period, one will continue to be registered as a full-time student of the University and receive a total of 45 credit hours of work in:

- MLS 3031
- MLS 4216
- MLS 4405
- MLS 4605C
- MLS 4215
- MLS 4309
- MLS 4545
-MLS 4625C

These courses will be taught at the hospital or clinical laboratory. Students successfully completing this program will be granted a Bachelor Science degree in Medical Technology.

PHYSICS (PHY/PHS)

The Department of Physics offers programs leading to a Bachelor of Arts or a Bachelor of Science degree, and to a Master of Arts degree. Both thesis and non-thesis programs are available for the M.A. degree.

Undergraduate course offerings of the Department provide a well-balanced program covering virtually every area of physics. Special courses may be offered upon sufficient demand. Modern, excellently equipped classrooms and laboratories provide an outstanding environment for students. Opportunities for undergraduate students to participate in research projects with professors and graduate students form an integral part of the undergraduate experience. Undergraduate students have engaged in research efforts to the extent that their work has been published in scientific journals. There is a tradition of close working relationships between professors and students.

At the graduate level, thesis research areas include theoretical and experimental plasma physics, theoretical and experimental solid state physics, experimental gaseous electronics, elementary particle theory, and biophysics. Supporting facilities include an IBM 360/375 computer, a Tektronix 4501 graphics terminal located in the Physics Building, an excellently equipped machine shop and electronic shop, a glass blowing shop, an electron microscope, and an x-ray photoelectron spectrometer. Teaching assistantships and financial aid through the College Work-Study Program are often available to qualified students. A supervised study hall is available where students may obtain help with their course work at their convenience throughout each week day.

Requirements for the Baccalaureate Degree:

I. Physics Courses

B.A. PHYSICS (PHY) 45-51 cr. hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PHS 3101</td>
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<tr>
<td>PHY 2050</td>
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<td>PHY 2050L</td>
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<td>PHY 2051</td>
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<td>PHY 2051L</td>
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<td>PHY 2052</td>
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<td>PHY 2052L</td>
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<tr>
<td>PHY 3040</td>
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<td>PHY 3040L</td>
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<tr>
<td>PHY 3041</td>
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<tr>
<td>PHY 3041L</td>
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<tr>
<td>PHY 3042</td>
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<td>PHY 3042L</td>
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PHYSICS (PHS) 55-62 cr. hrs.

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<th>Course</th>
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<td>PHY 2050</td>
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<td>PHY 3040</td>
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<tr>
<td>PHY 3042L</td>
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II. Supporting Courses in the Natural Sciences

B.A. AND B.S. PHYSICS—(28-33 cr. hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CHM 2045</td>
<td>(3)</td>
</tr>
<tr>
<td>CHM 2045L</td>
<td>(1)</td>
</tr>
<tr>
<td>CHM 2046</td>
<td>(3)</td>
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<tr>
<td>CHM 2046L</td>
<td>(1)</td>
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<tr>
<td>CHM 2047</td>
<td>(3)</td>
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*Credit will not be given for both general-physics PHY 2050, PHY 2050L, PHY 2051, PHY 2051L, PHY 2052, PHY 2052L, and PHY 3040, PHY 3040L, PHY 3041, PHY 3041L, and PHY 3042, PHY 3042L.

**With the consent of the Physics Adviser, either or both of the following substitutions may be made: PHY 4604 for PHY 4425 and PHY 3424 for PHY 4325.

COLLEGE OF NATURAL SCIENCES 119
III. General Distribution Requirements

The student is required to complete the General Distribution requirements of the College of Natural Sciences (see page 108). Selection of a foreign language, preferably French, German, or Russian, is also strongly recommended.

IV. Liberal Education Electives

The student must satisfy 24 hours of liberal education electives as described in item 3 of the graduation requirements of the College of Natural Sciences (See page 108.)

V. Free Electives (Including General Distribution waivers)

B.S. PHYSICS (PHS): 37-49 cr. hrs.

Teacher Education Programs:

For information concerning the degree programs for secondary school teachers and junior college teachers, see page 75, 81, and 84 of this catalog.

Requirements for the M.A. Degree:

General requirements are given on page 46. When a student is admitted 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 a decision has been made concerning the student's academic goals, the duties of the Graduate Adviser will be assumed by a Supervisory Committee appointed by the department chairman. The Supervisory Committee will have the right and the responsibility to add special requirements to meet any deficiency in the student's background.

The student desiring the M.A. degree with a thesis is required to take a minimum of 45 credits no more than nine of which may be for PHY 6911, PHY 6935 and PHY 6971. Of these 45 credits, 24 must be in courses numbered 6000 or above. Required courses are:

- PHS 5113
- PHY 5722C
- PHY 6346
- PHY 6846L
- PHY 5624
- PHY 6246
- PHY 6347

The Supervisory Committee will administer a comprehensive examination before recommending that a degree be granted.

The student desiring the M.A. degree without a thesis is required to take a minimum of 45 credits (excluding PHY 6940), no more than three of which may be for PHY 6911 and PHY 6935. Of these 45 credits, 24 must be in courses numbered 6000 or above. Required courses are:

- PHS 5113
- PHS 5115
- PHY 6347
- PHY 6645
- PHS 5114
- PHY 6247
- PHY 6536
- PHY 6846L

and a choice of any two of the following:

- PHS 5405
- PHS 5505
- PHY 5722C

or Biophysics

The Supervisory Committee will administer a written and an oral comprehensive examination before recommending that a degree be granted.

All graduate students are required to register for PHY 6935 in the first quarter of each academic year and, in connection therewith, to attend all Physics Colloquia scheduled during the year.
New College, a former private liberal arts college, became a part of the University of South Florida in 1975, retaining its distinctive academic program and the status of an honors college within the greater University.

A deliberately small, residential, innovative liberal arts college, New College attempts to provide an educational environment that will allow students to obtain maximum academic and personal development. The curriculum is designed to promote their self-direction and to supply them with the knowledge and skills necessary for their careers. New College is both traditional and contemporary in its orientation: dedicated to humane learning, but also purposely seeking the discovery, the development, and the creation of ways to equip man for survival in a fluid society.

During its 13-year history, New College fostered a constantly evolving program with faculty and students ever alert for better ways to nourish individual growth. Students are encouraged to develop their own educational plans—using the educational contract—that will help them reach individual goals. Flexibility, individualism, and broad freedom of choice characterize the program, giving to each student the opportunity to plan a major role in the constructing of his or her own program.

The Academic Calendar and Residence Requirements

New College operates on a slightly different academic year than the rest of the University. The College's academic year is divided into three 10-week terms beginning in September and ending in June with a special four-week period intervening in late fall designed specifically to permit students to accomplish independent studies.

Since students at New College are selected for their ability to benefit from the special New College program, they are considered, at entrance, to have the ability to begin at an advanced state of preparation. Therefore, New College offers each student the opportunity to earn a bachelor's degree in three academic years, or nine terms, of residence. However, each student also has the option to distribute his educational experience over a four-year period by taking some terms off from study at selected times during those four years.

Educational Contracts

The basic instrument of the New College educational program is the educational contract, a written document constructed at the beginning of a term by each student and expressing that student's plans for the ensuing term.

Each contract states the individual student's educational and personal goals for the term and possibly longer range objectives; a listing of the specific educational activities that will help accomplish these ends; and an explanation of how those specific educational activities will be evaluated at the end of the term.

Each contract is developed by the individual student as an expression of personal education and career goals, but faculty are expected to contribute substantially to help students determine the best ways to shape contracts to reach goals.

Admissions Requirements

New College welcomes applications from all qualified students without regard to nationality, creed, race, or sex. New College seeks those students who are unusually well-qualified to thrive in its intellectual and social atmosphere. The College uses a variety of indicators to help each student measure whether he or she is right for participating in this special program. The most reliable index of this ability remains past scholastic performance.

Student Scholastic Aptitude Tests (SAT) combined scores range from 1100 to 1600 with the average falling near 1200. The experience of students over the past 13 years has demonstrated that those whose combined scores fall anywhere within that 1100 to 1600 range are capable of succeeding at New College, provided they also have the personal characteristics that will allow them to cope effectively with the educational program. These individual traits, in addition to motivation, are initiative, tenacity, maturity, curiosity, concern for others and an excitement about life and learning as essential attributes. Applicants may submit results of the Scholastic Aptitude Test from the College Entrance Examination Board or scores received from the American College Testing Program (ACT) to help the Admissions Office of New College determine whether a student should be selected for any class.

Since the program at New College has been deliberately designed to fulfill the needs of individual students, it follows that the College will also accept students with varied academic preparation. The College does not require that certain courses be completed to gain admittance, but does urge prospective students to complete the customary courses within a college preparatory program before enrolling at New College. Particular attention is given to students who have participated in honors courses, advanced placement, or enriched and accelerated courses and independent studies.

Advanced placement provided at some institutions is not necessary for admission to New College of USF simply because all students are considered to be entering at advanced levels. Since there are no required courses, a student and a faculty advisor work together to design a program to take advantage of the student's abilities and previous academic preparation. Students are encouraged to begin studies at advanced levels if they have adequate background.

New College welcomes transfer students from other institutions. As many as one-third of each entering class are students with previous college experience. Transfer students must demonstrate through their transcripts that they can successfully handle college level work.

Application forms and literature may be obtained from the Director of Admissions, New College of USF, 5700 N. Tamiami Trail, Sarasota, Florida 33580. Prospective students should note that a supplemental application is needed for admission to New College.

Application Deadlines:

Fall Term/Term I: Application should be completed before March 1 and no later than April 1. Application for financial assistance should be received before February 1.

Winter Term/Term II: Application should be completed by November 1.

Spring Term/Term III: Application should be completed by February 1.

Degree Requirements

All students who are graduated from New College of USF receive a Bachelor of Arts degree. However, students may elect to concentrate
in any of a number of areas within the various divisions or to elect an interdisciplinary course of study in fields of their own shaping. For requirements for completion of a course of study at New College include satisfactory evaluations on nine educational contracts, on four independent study projects, on the senior project, and on the baccalaureate examination.

Areas of Study

New College is divided into three academic divisions—Humanities, Social Sciences, and Natural Sciences—and students may elect to study primarily in one area, to distribute their studies throughout the entire three divisions, or to create special interdisciplinary curricula which span offerings in any of the disciplines.

To aid prospective students of New College, each division has indicated broad areas of study which are available in each division. Within each area there are, of course, many subdivisions and information about these may be obtained from the New College Records Office.

### Humanities
- Art History
- Fine Arts
- Music
- Literature
- Languages
- Classics
- Philosophy
- Religion

### Natural Sciences
- Art History
- Mathematics
- Biology
- Chemistry
- Physics
- Experimental
- Psychology

### Social Sciences
- Economics
- History
- Political Science
- Sociology
- Social Psychology

Special Programs

New College has two special programs which are available to students of New College but which fall outside of the regular divisional or interdisciplinary areas.

The Environmental Studies Program is an interdisciplinary and interdivisional program that is also expected to integrate academic and "real world" experiences in problem-solving situations. Students who elect the Environmental Studies Program may develop disciplinary knowledge and skills through courses and seminars in the College's three academic divisions and then may apply their knowledge and skills in research projects dealing with practical problems in environmentally related areas.

Each year, for three weeks in June, the New College Music Festival is held on campus. The Festival brings to the campus a number of nationally and internationally known musicians to teach and to perform public concerts with emphasis on chamber music. Qualified New College students may enroll in Festival classes while Festival concert performances are open to everyone in the college community. Students for the Festival are drawn from all parts of the country and abroad coming to the college to study each year and also to perform in student concerts which are held frequently on campus.

New College students have the opportunity to audit Festival master classes and rehearsals and also to attend the public concerts.

Costs

Costs for attending New College of USF are the same as those for attending any part of the State University System. Costs are based on a pre-credit hour basis (see page 18 for University credit-hour costs). Each term's educational contract is the equivalent of 16 credit hours while each independent study project is equivalent to four credit hours. During the first three terms students are considered for fee purposes to be on a second-year college level. For the final six terms, students are considered to be taking upperclass courses with consequent cost differentials.

Since New College offers students the opportunity to have a more individualized type of study than is available in other University programs, it is easily seen that such a program would be more expensive. To help meet this difference in cost, the New College Foundation has agreed to provide an annual subsidy to the university system to make up the difference of state funding and the actual cost of the educational program. These funds are raised by the New College Foundation and its Board of Trustees from individuals, corporations and foundations.

Student Life

New College is essentially a residential institution with the majority of the students living either on campus or in the surrounding community. Students are challenged to accept major responsibilities for the direction of their own affairs, including their social and extra-curricular activities. A Student Affairs Office is an essential part of New College and is concerned with almost all phases of student life from orientation of arriving students to commencement plans for those ready to depart. Student Affairs, through its professional staff, is responsible for counseling, housing, recreation and health services. Staff also are concerned with helping students assume responsibilities in relation to others on campus and in the outside communities.

All first-year students live on campus during their initial academic year. Upper-class students may choose College or non-College residency. First-year students are required to take meals in the campus dining hall. Others have the option of using the food service or of making independent arrangements.

New College offers counseling for students in several different areas. New College provides for students a small health center on campus, staffed while the college is in session. Excellent specialized medical services are readily available in the community with a community hospital only minutes away from campus. Qualified clinical psychologists provide for students a broad range of psychological counseling and therapy as well as dealing with students concerned about life goals, academic and career decisions, and study skills. Professional medical and psychiatric counsel is available in the community at the student's expense.

New College Dormitory
NEW COLLEGE OF THE UNIVERSITY
OF SOUTH FLORIDA
ACADEMIC CALENDAR 1978-79

Fall Term (I), 1978 and Independent Study Period

September 4, Monday
September 6-9, Wed.-Sat.
September 11, Monday
September 15, Friday
September 20, Wednesday
September 22, Friday (noon)
November 1, Wednesday
November 3, Friday
November 17, Friday
November 20, Monday
November 23-24, Thurs.-Fri.
December 15, Friday

Labor Day Holiday
Orientation and Advising
Classes Begin
Fees Due; Last day to withdraw
without financial penalty
Contracts Due
Last day for contract submission for Term II
Deadline for declaring option/off-campus study for Term II
ISP Sign-Up Forms Due
End of Fall Term
Independent Study Period Begins
Thanksgiving Day Holiday
Independent Study Period Ends, Projects Due

Spring Term (III), 1979

March 26, Monday
March 30, Friday
April 4, Wednesday
April 6, Friday (noon)
May 4, Friday
May 21-25, Mon.-Fri.
May 28, Monday
June 1, Friday

Classes Begin
Fees Due; Last day to withdraw
without financial penalty
Contracts Due
Last day for contract submission for Term III
Senior Theses Due
Baccalaureate Examinations
Memorial Day Holiday
Deadline for declaring option/off-campus study for Term II
ISP Sign-Up Forms and Contracts Due for Summer
End of Spring Term
Evaluations due for graduating students
Contract Certifications due for graduating students
Faculty Review of graduating students
Commencement

Winter Term (II), 1979

January 2, Tuesday
January 3, Wednesday
January 9, Tuesday
January 10, Wednesday
January 12, Friday (noon)
March 1, Thursday
March 13, Tuesday

Registration, Orientation, and Advising
Classes Begin
Fees Due; Last day to withdraw
without financial penalty
Contracts Due
Last day for contract submission for Term II
Deadline for declaring option/off-campus study for Term II
End of Winter Term

Students who have not submitted contracts to the Office of Records and Registration by noon of this deadline will be considered as withdrawn by default with no refund or cancellation of fees.

Under no circumstances will students be granted option for the following term past this deadline. Off-campus contracts for the following term should be submitted as soon as possible, following declaration, but must be submitted prior to the first day of the term of the off-campus work.
The College of Nursing is committed to the improvement of nursing service, and related research activities. The College offers a National League for Nursing accredited upper division program in nursing that leads to a Bachelor of Science degree with a major in nursing. Students (qualified students with no previous preparation in nursing) and 2) Curriculum B for registered nurses who are graduates of diploma and associate degree programs. Qualified students with no previous preparation in nursing and registered nurses who are graduates of associate degree and hospital programs are admitted.

Students may meet all requirements at the University of South Florida or they may complete lower division prerequisites elsewhere and transfer to USF for the nursing major. Students who enroll at the first or second year level at USF are admitted to the Division of University Studies. They meet the same requirements as other applicants for admission to the University and should follow the admission procedures outlined elsewhere in this Catalog. College graduates and transfer students from other nursing programs are also eligible for admission to the major.

The practice of professional nursing involves problem-solving and decision-making based on knowledge from the humanities and the physical, biological, social and behavioral sciences. Shortages of qualified personnel, technological advances and increasing demands for health care services have brought changes in the functions and responsibilities of those in the health care professions. As a result, nursing practice has become increasingly complex and demanding in terms of knowledge and skills required to assume added responsibilities and functions. The goal of this program is to provide students with opportunities to develop cognitive, affective and psychomotor skills basic to general nursing practice in any setting where professional nursing services are provided: acute care hospitals, community health agencies, extended care facilities, industry, physicians' offices, military health services, the American Red Cross, and so on. The program also focuses on interpersonal and leadership skills essential to meeting their responsibilities as citizens and as professionals in the health care system. An additional goal is that of assisting students to establish investigative and independent study habits that will persist throughout a lifetime of professional growth and development.

The undergraduate program is approved by the Florida State Board of Nursing and graduates of this program are eligible for admission to examinations leading to licensure to practice as professional nurses in the State of Florida or to apply for licensure in other states. Graduates also have the educational background necessary for graduate study in nursing to prepare for expanded roles in clinical nursing practice or for teaching, administration, research and other leadership responsibilities.

Admission to the College

The College of Nursing is a quota program in that limitations are set on enrollments on the basis of availability of sufficient qualified faculty, laboratory and classroom facilities, and clinical resources for nursing practice experience for students. Therefore, admissions are upon a selective basis through special application directly to the College of Nursing. Florida residents are given priority. One class is admitted to Curriculum A in the fall quarter of each year. The deadline for acceptance of applications is February first. Applications may be obtained by contacting the Coordinator of Admissions, College of Nursing.

Transfer students seeking admission to the College of Nursing follow the procedure outlined for transfer students in the USF Catalog and the procedure outlined here for admission to the College of Nursing. All transfer students must apply for admission to the University and be accepted prior to acceptance by the College of Nursing. Transcripts certifying completion of all requirements for admission must be available to the College of Nursing before admission will be confirmed. Applications for admission to the University may be obtained by contacting the Office of Admissions, University of South Florida, Tampa, Florida 33620. Applications can be submitted as much as one full year in advance of intended enrollment but must be submitted not later than January 3 of the year in which the student wishes to enroll.

Admission procedures for registered nurses vary from those outlined above. Graduates of associate degree and hospital programs in nursing have widely varied backgrounds. Therefore, the admissions process for them is designed to permit evaluation of records, academic advisement and individual program planning early in order to ensure optimum utilization of previous educational experiences and expedite completion of degree requirements.

1. All registered nurses seeking admission to the College of Nursing should submit an application to the College of Nursing. These applications will be sent upon request.

2. When the completed application and transcripts are received, faculty assess them in terms of the requirements for admission to the major. Applicants who have not met the prerequisites will be advised of their standing and the alternatives available for meeting requirements: a) CLEP examinations if appropriate, b) courses at USF, or c) courses at a junior college or other institution. Applicants who have met the requirements for admission will be advised as to when they can be admitted to take courses in the major and (if not already enrolled in the University) will be provided with a USF application stamped "RN Applicant" to complete and forward with admission fee to the Office of Admissions.

3 Registered nurse applicants seeking admission to the major who apply first to the Office of Admissions will be referred to the College of Nursing to complete the process outlined above.

General Requirements

The academic requirements used as a basis for evaluating eligibility of applicants for admission to the upper division major are outlined below. The applicant should realize that these are minimum requirements and that applicants are rated in addition with regard to a number of factors relevant to completion of the program and to professional nursing practice.

A. OVERALL REQUIREMENTS (CURRICULUM A)

1. Completion of 90 quarter (60 semester) hours of college level work with a cumulative average of "C" or better. Credit received on the basis of CLEP examinations or other appropriate procedures may be included as part of these requirements.

2. Completion of the University of South Florida general education distribution requirements as part of the above. These requirements may be satisfied by
the completion of 60 quarter (40 semester) hours in the following areas with not less than 8 quarter hours (6 semester hours) in each area:

1) English Composition
2) Humanities
3) Mathematics/Quantitative Methods
4) Natural Sciences
5) Social Sciences

Students with an A.A. degree will be considered to have met the above requirements.

In the specific course requirements for the nursing major, certain courses are required in the natural sciences and in the social and behavioral sciences. These courses will also apply toward meeting the general education distribution in the natural and social sciences. In addition, the courses taken in statistics or quantitative methods to meet the specific course requirements of the College of Nursing will apply toward meeting one of the mathematics courses required in the general education distribution.

Specific Course Requirements

1. Chemistry: completion (with a "C" or better) of the equivalent of two quarters of chemistry with content in inorganic, organic and biochemistry. (USF: CHM 2045, 2046). Courses taken at another institution will be evaluated individually on the basis of content included.

2. Biology: completion (with a "C" or better) of at least one year of biology with content including cell structure, genetics and ecology. (USF: BSC 2010C, 2011C, 2012). Courses taken at another institution will be evaluated individually on the basis of content included. Human anatomy, physiology or microbiology do not meet these requirements.

3. At least one of the above must include laboratory or have a corequisite laboratory course for which the student received credit.

4. Microbiology: completion (with a "C" or better), (USF: MCB 3010C or APB 3110). Courses taken at another institution will be evaluated individually on the basis of content included.

5. Completion with a "C" or better, of at least one of the following: anatomy, nutrition (USF: HUN 3201), or satisfactory completion of the correspondence course offered by the University of Florida, human growth and development (USF: HUS 4020 or a combination of DEP 3103 and GY 3000 or DEP 4005 and GY 3000). Courses taken at another institution will be evaluated on an individual basis.

6. Social and Behavioral Sciences
   a) One course in American government (e.g., USF: PAD 3003
   POS 2112
   POS 4424 or modern American history (e.g., USF: AMH 2020, AMH 3231)
   POT 4204)
   Courses taken at another institution will be evaluated on the basis of content.
   b) Completion, with a "C" or better, of at least three courses in the areas of individual and social/community behavior with at least one course in each area. Any course in psychology and sociology as well as group dynamics, aging studies, cultural issues, etc., are acceptable. Courses with education prefixes which have content in these areas are also acceptable.

7. Statistics or Quantitative Methods: completion of at least one course in mathematics and one course in statistics or quantitative methods.

All applicants whose applications indicate eligibility for admission must come to the Tampa campus for an interview prior to a decision regarding admission to the program.

Factors given consideration in evaluating applicants include: cumulative grade point average; grade point average in the specific course requirements (biology, chemistry, social sciences, microbiology and the supporting sciences); extent to which applicant meets or exceeds minimum requirements; extracurricular, civic, military or employment activities; health status; and ability to communicate (assessed by interview and short essay required at time of interview).

Those applicants with the highest total rankings are accepted in order until the class quota is filled. As vacancies occur prior to the enrollment date, those next on the list are accepted to fill them. Enrollment of all students is contingent upon verification through official transcripts of satisfactory completion of all the minimum requirements outlined above.

B. OVERALL REQUIREMENTS (CURRICULUM B)

1. The academic requirements for admission to Curriculum B, which differ somewhat from those for Curriculum A because consideration is given to previous preparation and experience, include the following:
   a. An overall "C" average for all prior college level work attempted.
   b. Eligibility to return to last institution attended.
   c. Current licensure to practice as a registered nurse in Florida.

2. Registered nurses from hospital schools may be admitted to the major after completion of 45 hours in the general education distribution (described under Curriculum A) with no less than 8 quarter hours in each of the five areas. This policy, which differs from that in effect for generic students, has been developed to provide more flexibility for registered nurses in moving through the program on a part-time basis. However, admission to the College does not insure enrollment in those courses that have supporting science prerequisites.

3. Registered nurses with an Associate of Science or Associate in Arts degree in nursing are eligible for admission to the major providing they have met general education distribution requirements as described above.

4. Registered nurses who possess an Associate of Arts degree (other than in nursing) are eligible for admission to the University and will be considered to have met general education distribution requirements of the University. However, the College requirements in mathematics, social and behavioral sciences, and physical and biological sciences must be met prior to graduation.

5. Registered nurses may receive up to 20 hours of credit for previous nursing education and/or experience through satisfactory performance on proficiency examinations. These credits will be allocated as elective credits and will not apply toward meeting the University requirement of 60 upper division credits or toward meeting the requirements of the upper division nursing major.

6. Priority for admission is given to Florida residents who are currently engaged in the practice of nursing in the State or who have practiced during the past five years and plan to return to practice upon graduation.

General Education Requirements

All registered nurse applicants must have completed 45 quarter (30 semester) hours in general education with not less than 8 quarter (6 semester) hours in each of the five areas prior to enrollment in the major. These credits may be obtained by any one or any combination of the methods listed below:

1. Successful completion of the work at an approved
college or university. Students with an A.A. degree (other than in nursing) will be considered to have met these requirements.

2. Successful performance in College Level Examination Program general tests and appropriate subject examinations. College regulations permit up to 67.5 hours in advanced standing credit (including 45 hours of the general distribution requirement) for successful performance on CLEP examinations.

3. Successful performance on the Standardized Subject Matter Test (USST), a United States Armed Forces Institute Examination.

There are specific course requirements for graduation with a B.S. degree in nursing which are also applicable toward the general education distribution. While not all of these are required for admission to the major, some are prerequisite to courses in the major. With careful consideration to program planning, the student may meet these major requirements and at the same time meet requirements of the general education distribution. These requirements are outlined below:

1. **Mathematics**—a total of 8 quarter hours, including one course in general mathematics or college algebra and one course in elementary statistics or quantitative methods.

2. **Social Sciences**—a total of 18-24 quarter hours with at least one course in American government or modern American history and a minimum of four courses in individual and social/community behavior (at least one course in each of these areas). All courses must be completed with a grade of “C” or better. Courses in psychology, sociology, cultural and medical anthropology, gerontology, behavioral sciences, growth and development and life cycle may apply toward meeting this requirement. (Students may CLEP general psychology, growth and development, American government and American history).

3. **Physical and Biological sciences**—a minimum of 18-20 quarter hours must be earned, but this requirement can be met through many different combinations of basic and/or advanced physical and biological science courses. All courses taken toward meeting this requirement must have been completed with a “C” or better.

   a. **Biology**—recommend 6-8 quarter hours, which may be fulfilled by CLEP or two courses that include content in (1) cell theory, (2) biological transport, (3) genetics, (4) evolution, (5) phylogenetic study of plant and animal kingdoms and (6) ecology. Anatomy or a course that includes the following content areas may be used as one course for this requirement: (1) normal cellular and organ system structure of human body and (2) normal cellular and functional organization of human body.

   b. **Microbiology**—recommend 3-6 quarter hours which may be fulfilled by one course that includes content in (1) study of bacteria, virus, fungi, rickettsiae and pathogenic protozoa; (2) problems of sterilization, infection, resistance, and immunization; and (3) effects of activities of microorganisms on man’s environment.

   c. **Chemistry**—recommend 6-8 quarter hours which may be met by CLEP or two courses that include content in (1) principles of chemistry, (2) structure of matter, (3) atomic and molecular structure, (4) states of matter, (5) chemical formulas and nomenclature, (6) solutions, (7) chemical kinetics and equilibrium, (8) theory and practice of quantitative analysis, and (9) organic chemistry concepts. A physics course may be used in lieu of one course in this area.

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**Program Leading to the Baccalaureate Degree**

The College of Nursing offers one undergraduate program with a major in nursing (NUR).

**Degree Requirements**

Students are certified for the Bachelor of Science degree with a major in nursing upon completion of 180 quarter hours of credit distributed among the general education distribution, supporting sciences, minimum requirements of the major and electives. A cumulative grade point ratio of 2.0 or better must be maintained throughout the program. At least 60 quarter hours must be upper division level work (courses numbered 3000 or above). Overall requirements, which differ for Curriculum A and Curriculum B, are outlined below:

**CURRICULUM A**

The clinical nursing courses emphasize wellness as well as illness and focus on prevention of disease and maintenance of health as well as care and rehabilitation of those with acute and chronic illness. The clinical nursing courses include substantial theory and nursing practice in the care of the physically and chronically ill; in preventive, health maintenance and rehabilitative services; and for functioning as members of nursing and health care teams in highly responsible and complex patient care settings.

The upper division major is built upon the general education and sciences discussed above as prerequisites for admission and is composed of supporting sciences, required nursing courses, and electives.

The supporting sciences required of all Curriculum A nursing majors include:

- **NUS** 3210C Human Anatomy (4)
- **HUN** 3201 Nutrition (4)
- **MCB** 3010C Introduction to Microbiology (5)
- **APB** 3110 Man, Microbe, and Molecule (4)
- **HUS** 4020 Life Cycle (5)
- **NUS** 3211C Human Physiology (5)

**Nursing Courses**

**Junior Year (3 quarters)**

- **NUU** 3121L (5)
- **NUU** 3210C (6)
- **NUU** 3211 (5)
- **NUU** 3211L (6)
- **NUU** 3214 (2)
- **NUU** 3320 (3)
- **NUU** 3321 (2)

**Senior Year (3 quarters)**

- **NUU** 4910C (1-5)
- **NUU** 4930 (2-4)
- **NUU** 4943L (7)
- **NUU** 4220 (5)
- **NUU** 4220L (6)
- **NUU** 4221 (5)
- **NUU** 4221L (6)
- **NUU** 4222 (2)
- **NUU** 4432 (3)
- **NUU** 4630 (3)

**CURRICULUM B**

Curriculum B of the upper division major is built upon the general education and supporting science base described above and includes additional supporting sciences, required nursing courses and electives. At least 60 quarter hours at the upper division level with at least 45 quarter hours in nursing courses (not to include human physiology and nutrition) are required for graduation.

- *At least one of these courses (or its equivalent) is required for admission to the nursing major.

- *Required for Admission.

- **Electives in nursing. These courses are offered on the basis of student interest to provide an opportunity to investigate some area of interest in depth. All students are expected to undertake at least two credits of NUR 4910C (Independent Study) under the guidance of a faculty member.*
In addition to supporting science requirements outlined in Overall Requirements (Curriculum B), the following are required for graduation. These requirements may be met as outlined below:

1. Human Physiology—at least one course that includes content in (1) normal cellular and functional organization of human body and (2) normal function of body systems. This requirement may be met by NUS 3211C at USF or by a comparable transfer course.

2. Nutrition—at least one course in nutrition (4 quarter hours) that includes normal and therapeutic nutrition for all age groups and effects of cultural, religious, and socioeconomic factors impacting upon food patterns of individuals and groups. This requirement may be met as follows: (1) course credit by transfer or at USF; (2) satisfactory performance on the challenge examination offered by College of Nursing; (3) satisfactory performance in the University of Florida correspondence course in nutrition.

The required nursing theory and clinical practice courses are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 4910C</td>
<td>1-5</td>
<td>NUU 3240</td>
<td>4</td>
</tr>
<tr>
<td>NUR 4930</td>
<td>2-4</td>
<td>NUU 3241C</td>
<td>4</td>
</tr>
<tr>
<td>(May be repeated up to 12)</td>
<td></td>
<td>NUU 4422</td>
<td>5</td>
</tr>
<tr>
<td>NUR 4943C</td>
<td>5-7</td>
<td>NUU 4422L</td>
<td>3-5</td>
</tr>
<tr>
<td>NUS 3220</td>
<td>4</td>
<td>NUU 4630</td>
<td>3</td>
</tr>
<tr>
<td>NUU 3292L</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nursing courses for both Curriculum A and B include substantial theory and nursing practice in care of the physically and mentally ill, the young and the old, the acutely and chronically ill. They also provide opportunities for learning in health maintenance, preventive and rehabilitative services and for functioning as members of nursing and health care teams in highly responsible and complex patient care settings. Learning experiences in nursing are developed and guided by registered professional nurses with graduate preparation in clinical nursing. Nursing practice experiences are provided in a variety of institutions and agencies involved in the delivery of nursing services.

Electives

The number and kinds of electives taken will depend upon the number of credits needed to fulfill the 180 quarter hour requirement for the degree and upon individual interest and goals. They may be chosen by the student from language, literature, fine arts, natural science, etc.; from areas relating to nursing roles and relationships—e.g., management, health education, mental retardation, gerontology, urban problems, race relations, women's studies, biological or physical sciences, social or behavioral sciences, statistics; or from NUR 4930, Selected Topics in Nursing.

Special Requirements for Nursing Majors

Tuition and fees for students enrolled in nursing are the same as for other undergraduate students at the University of South Florida. However, there are substantial expenses not covered by the basic tuition and fees.

Textbooks, laboratory manuals and standardized tests are essential tools for students enrolled in the nursing major. Texts in nursing are somewhat more expensive than those in general education, and it is estimated these costs run from $35.00-$50.00 per quarter. Since texts are used over the two year major, these costs are somewhat higher at the junior level.

Uniforms, including watch with sweep second hand, scissors, shoes, stethoscope, etc., are required after the first quarter of the junior year. Uniform specifications and policies have been developed by students enrolled in the first class and costs vary depending upon personal choice. In addition, lab coats or aprons are necessary during the first quarter.

Medical care insurance is required. Professional liability insurance is highly desirable for all and required for registered nurse students.

An annual physical examination is required. The first one must be done prior to enrollment in the nursing major.

Transportation to and from community health agencies for clinical nursing experience is also the responsibility of the student. Since public transportation in the Tampa area is not usually convenient to the hours of clinical schedules, students must have access to some other means of transportation or form car pools. Also, from time to time, field trips to an institution or agency at some distance from the campus will be required for an entire class or section of a class. In these instances, students making the trip share the costs.

Financial Aid

Policies and procedures pertaining to financial aid are the same for students in nursing as for other students. Specific information can be obtained from the Office of Financial Aid, Student Affairs, University of South Florida, Tampa, Florida 33620.
The social and behavioral sciences are concerned with human beings and their development, problems, behavior, and institutions. The study of man helps the student to understand the world of which he/she is a part, to become a more informed citizen, and to prepare for a role in contemporary society. The social and behavioral sciences provide the student with knowledge, experience, and background for future application in business and industry, government, human service professions, and graduate education.

Three programs in the college—Urban Community Psychology, Gerontology, and Urban Anthropology—have been approved by the Board of Regents as Programs of Distinction. Although the programs are housed respectively in the Department of Psychology, the Aging Studies Program, and the Department of Anthropology, they utilize faculty expertise from many disciplines. Approval has been requested to extend the Program of Distinction to include Communicology, Criminal Justice, Geography, Political Science, Rehabilitation Counseling, and Sociology to further emphasize the human sciences and services. Students majoring in these areas receive distinctive educational experiences in both university and community settings.

The College of Social and Behavioral Sciences has established the Human Resources Institute to address critical issues in the broad human resources sector through a comprehensive program of research and service. The following Centers are related to the Human Resources Institute: Center for Community Psychology, Center for Applied Anthropology, Center for Evaluation Research, Center for Applied Gerontology, and Center for Community Development and Analysis.

**BACCALAUREATE LEVEL DEGREE PROGRAMS**

**Admission to the College**

Admission to the College of Social and Behavioral Sciences is open to students who have been accepted to the University of South Florida and who declare a major in a particular field within the college.

Undergraduate students must submit a formal application for admission to the college. This application is available in the Office of the Coordinator of Advising. Students will then be counseled by an academic adviser in his/her major field. Information about majors, departments, programs, advising, and other services of the college may be obtained from the Coordinator of Advising, College of Social and Behavioral Sciences, University of South Florida, Tampa, Florida, 33620.

Any student in the University may take courses in the College of Social and Behavioral Sciences. Students in other colleges or adults in the community may select social and behavioral science courses of particular interest.

**General Requirements for Degrees**

The College of Social and Behavioral Sciences currently offers two undergraduate degrees: Bachelor of Arts and Bachelor of Social Work. Requirements for graduation (referred to on page 33) are summarized as follows:

1. 180 credits with at least a "C" average (2.0) in courses taken at the University of South Florida. At least 60 of these 180 credits must be in courses numbered 300 or above. (A maximum of four credits of physical education courses may be counted toward graduation requirements; no credits in physical education are required.)
2. 60 hours of general distribution courses as required by the University in the areas of English Composition, Fine Arts and Humanities, Mathematics and Quantitative Methods, Natural Sciences, and Social and Behavioral Sciences. (See General Distribution Requirements, page 32.)
3. Completion of a major in a subject or an integrated major, with at least a "C" average (2.0). (See following pages for requirements in specific majors offered in the college.)
4. 120 credits outside the major, including 90 credits outside the College of Social and Behavioral Sciences. These requirements are designed to insure breadth of academic experience.
5. Credits transferred from other institutions will not be included in the computation of the grade point average for graduation. To be eligible for graduation with honors requires at least a 3.5 average in USF work and all previous college work.
6. A student must complete at least 45 of the last 90 credits in academic residence at USF. The approval of the dean of the college granting the degree must be secured for any transfer credits offered for any part of these last 90 hours.

Students are encouraged to consult with an academic adviser in his/her major. It must be noted, however, that the student assumes full responsibility for satisfying all University, college, and departmental requirements for graduation.

**Programs Leading to the Baccalaureate Degree**

The College of Social and Behavioral Sciences offers a major in 14 fields as described in the following pages. In addition to the departmental majors, interdisciplinary majors are offered. (See Interdisciplinary Social Sciences, International Studies, and Social Science Education listed below.) Economics offers two majors, one in the College of Social and Behavioral Sciences and the other in the College of Business Administration.

A Bachelor of Arts Degree is offered in the following:
- Afro-American Studies (AFA)
- Anthropology (ANT)
- Anthropology-Linguistics (ANL)*
- Criminal Justice (CCJ)
- Economics (ECN)
- Geography (GPY)
- History (HTY)
- Interdisciplinary Social Sciences (SSS)
- International Studies (INT)
- Political Science (POL)
- Psychology (PSY)
- Sociology (SOC)
- Social Science Education (SSE)**
- Social Work (SOK)

*Offered jointly with the College of Arts and Letters
**Offered jointly with the College of Education.
GRADUATE LEVEL DEGREE PROGRAMS

Master's Degree Programs

Graduate level courses are now offered in most social and behavioral science areas. The Master of Arts Degree is offered in the following:
- Anthropology (ANT)
- Criminal Justice (CCJ)
- Geography (GPY)
- Gerontology (AGE)*
- History (HTY)
- Political Science (POL)
- Psychology (PSY)
- Rehabilitation Counseling (REH)
- Post-Graduate Audit
- Rehabilitation Counseling (REF)
- Sociology (SOC)

*Offered by the Aging Studies Program

A Master of Public Administration Degree (M.P.A.) is also offered.

Public Administration (PAD)

In addition to the Master of Arts degree offered from the College of Social and Behavioral Sciences, joint degrees are offered with the College of Education in Social Science Education, School Psychology, and the Junior College Teachers' Program.

The Department of Communicology (formerly Speech Pathology and Audiology) in the college offers a Master of Science Degree in the following:
- Audiology (AUD)
- Post-Baccalaureate Audiology (AUF)
- 5-year program
- Aural (Re)habilitation (ARH)
- Post-Baccalaureate
- Aural (Re)habilitation (ARF)
- 5-year program
- Speech Pathology (SPP)
- Post-Baccalaureate
- Speech Pathology (SPF)
- 5-year program

Doctor of Philosophy

The Department of Psychology offers a program leading to the degree of Doctor of Philosophy.

SPECIAL NON-DEGREE PROGRAMS

The AGING STUDIES undergraduate program consists of a core of courses designed for interested students. These courses are GEY 3000, GEY 3100, GEY 4930. Additional information will be found in the Aging Studies Program section of the catalog.

The OFF-CAMPUS TERM PROGRAM offers a wide variety of opportunities for self-designed, supervised educational experiences for credit. This program is presently housed administratively in the Department of Interdisciplinary Social Sciences, and the courses are listed under Off-Campus Term and Social Sciences Interdisciplinary.

The WOMEN'S STUDIES PROGRAM consists of courses designed to deal with historical, anthropological, sociological, and psychological aspects of the woman's role and of the female experience. This program is presently housed in the Department of Interdisciplinary Social Sciences, and the courses are listed under Women's Studies.

The HUMAN SERVICES COURSES are designed for students interested in careers in the human sciences and services, and may be taken in conjunction with any major or by special students. These courses are coordinated by the Aging Studies Program, and the courses are listed as:
- HUS 3010
- HUS 3300
- HUS 4500
- MHT 4302
- HUS 5224
- SOW 4332
- HUS 4020

PROGRAMS AND CURRICULA

AFRO-AMERICAN STUDIES (AFA)

Afro-American Studies Program provides a quality undergraduate education leading to a Bachelor of Arts degree in Afro-American Studies. Essentially it is a service program which provides opportunities for all students to broaden the bases of their knowledge of the entire human experience and intercultural understanding so essential to living in a multi-racial society and a world that has become a global village. It provides a new horizon in liberal education that seeks reification of the knowledge of human experience and strikes at the narrowness and ethnocentrism of the traditional disciplines which have contributed much to racial prejudice and misunderstanding. Part of its mission is to assist its black student clientele to achieve a more dignifying identity and fuller participation in the mainstream of American life. It attempts to help them to develop a greater awareness of themselves and their talents and to provide them educational and research opportunities necessary for the acquisition of understanding of political and economic realities and tools that must enable black people and other minorities to become effective determinants of their own political and economic life.

Admission to Afro-American Studies major is open to all students who have been duly admitted to the University of South Florida by the Office of Admissions and who file necessary papers in the Office of the Coordinator of Advising, College of Social and Behavioral Sciences, to declare a major in the field. All of the program's courses are open to all other students—regular and special—of the University.

Requirements for the B.A. Degree:

The major in Afro-American Studies consists of a minimum of 56 hours in the field specified as follows:

**Required Core Courses (20 cr. hrs.)**
- AFA 2001 (4)
- AFH 3200 (4)
- AMH 3572 (4)
- AFA 3100 (4)
- AMH 3571 (4)

**Required Supporting Courses (12 cr. hrs.)**
- AFA 4150 (4)
- AFH 3311 (4)
- ECP 4143 (4)
- AFA 4936 (4)
- AFH 4910 (1-4)
- PHM 4120 (4)

**Suggested Elective Courses (24 cr. hrs.)**
- AFA 4331 (4)
- AFH 4321 (4)
- HUM 3420 (4)
- AFA 4419 (4)
- CPO 4204 (4)
- INR 4254 (4)
- AFA 4900 (2-4)
- CPO 4244 (4)
- PUP 3313 (4)
- AFA 4931 (1-4)
- CPO 4254 (4)

Majors must maintain a minimum of 2.0 average and are also responsible for fulfilling College and University general education requirements.

AGING STUDIES (AGE)

Undergraduate Program

Although no baccalaureate degree in gerontology is offered, the Aging Studies Program does provide a core of four courses at the undergraduate level. These courses range from Introduction to Gerontology to Seminar in Selected Topics in Social Gerontology,
and are designed as electives for students from a variety of areas, particularly the human service areas. More generally, the objective of the sequence of undergraduate courses is to provide students with a broad educational experience in gerontology.

The Human Services Courses

The HUMAN SERVICES COURSES are designed for students interested in careers in the human sciences and services, and may be taken in conjunction with any major, or by special students. They are closely related to our Urban Community Psychology and Gerontology Program of Distinction and will be taught by qualified faculty from the various disciplines within the college. The Human Services sequence is coordinated by the Aging Studies Program.

Center for Applied Gerontology

The Center for Applied Gerontology is one of five specialized centers in the new Human Resources Institute within the College of Social and Behavioral Sciences. The activities of the Center include research on aging, program evaluation, short-term training of agency personnel, the collection and dissemination of resource materials on death, dying and grief, and other activities intended to complement the educational program in gerontology.

Graduate Program

The primary objective of the graduate program in aging is to train personnel for leadership positions in the planning, development, delivery, and evaluation of community services for older persons. In keeping with this objective, the program offers a broad range of cross-disciplinary courses. As an important part of the training process, each graduate student spends a supervised internship for one academic quarter in a community agency or facility which provides services for older persons. A Master of Arts degree in Gerontology is awarded upon satisfactory completion of the requirements.

Requirements for the M.A. Degree in Gerontology

The M.A. degree requires five quarters of full-time study — or the part-time equivalent thereof — including one quarter of supervised field experience. The courses in the degree program were developed specifically to meet the objectives of the program and are offered under the Aging Studies Program. The M.A. degree in Gerontology requires a minimum of 34 credit hours in approved Aging Studies courses. Prior to beginning the program, each student will confer with a departmental adviser who will thoroughly review the student's academic background, experience, and career interests and develop an approved, individualized curriculum from the available Aging Studies courses.

Required courses for the M.A. degree include:

- GEY 6930 (2)
- GEY 6932 (2)
- GEY 6940 (12)
- GEY 6931 (1)
- GEY 6933 (2)

Majors are also required to take a minimum of 34 hours from the following:

- GEY 5250 (4)
- GEY 5642 (4)
- GEY 6450 (4)
- GEY 5350 (4)
- GEY 5645 (4)
- GEY 6460 (4)
- GEY 5600 (4)
- GEY 5901 (1-3)
- GEY 6500 (4)
- GEY 5610 (4)
- GEY 6325 (4)
- GEY 6510 (4)
- GEY 5620 (4)
- GEY 6390 (4)
- GEY 6642 (4)
- GEY 5630 (4)
- GEY 6391 (4)
- GEY 6911 (1-6)
- GEY 6912 (1-6)

There are no language or thesis requirements. However, following completion of the necessary coursework, there will be a comprehensive examination designed to test the student's knowledge of and ability to integrate key concepts and information in the field of gerontology. This examination must be taken and passed before the student begins the required field placement.

Admission Requirements

To be eligible for admission to the M.A. program, the applicant must:

1. Hold a baccalaureate degree or its equivalent from an accredited college or university.
2. Have a minimum score of 1000 on the Graduate Record Examination (total of Quantitative and Verbal Aptitude scores) plus a minimum grade point average of 2.5 (A = 4.0) on the last half of courses taken for the bachelor's degree.

or

Have a minimum score of 900 on the Graduate Record Examination (total of Quantitative and Verbal Aptitude scores) plus a minimum grade point average of 3.0 (A = 4.0) on the last half of courses taken for the bachelor's degree.

Preference is given to applicants who demonstrate commitment to or experience in the field of aging.

Special consideration may be given to mature students (25 years of age or older) who demonstrate commitment to or experience in the field of aging.

In addition to the University Graduate Studies application, a program application is required and should be obtained from the Aging Studies Program. Entering full-time students are ordinarily admitted only in the Fall Quarter (September) each year. At that time, a new cycle of courses begins and runs for five academic quarters.

ANTHROPOLOGY (ANT/ANL)

Anthropology aims at comprehending people as biological and social beings. It is concerned with all forms of people through time and space. One consequence of this broad-ranging view is the presence within anthropology of four branches: physical anthropology, archaeology, cultural anthropology, and linguistics. Exposure to anthropological information and the cross-cultural perspective produces heightened sensitivity in the student to the world about him/her. This helps the student to adopt an intellectual posture of disciplined skepticism with respect to any scheme which purports to define and account for regularities in human life. In response to an increasing interest on the part of students, an undergraduate focus in applied anthropology has been created to offer the Department's majors the option of including career training as a part of their anthropology curriculum. The focus includes emphasis in applied anthropology coursework and a practicum course in which the student applies anthropological method and theory in off-campus settings.

The primary objective of the graduate program is to provide both basic education and specialized training in several specific fields of applied anthropology which will enable the graduate to render valuable and substantive service at local, state, national and international levels in a context of non-academic, non-teaching employment. Graduates will be capable of assuming vital positions in the various agencies and institutions charged with understanding and acting on the complex problems which beset our society.

Because of the sequential nature of the graduate courses, entering students are ordinarily admitted only in the Fall Quarter (September) each year. At that time a new cycle of courses begins.

The Center for Applied Anthropology is one of five centers in the Human Resources Institute, College of Social and Behavioral Sciences. The Center is concerned with applying anthropological knowledge, theory, method, and perspectives to problems of contemporary society. Illustrative areas of activity include human services needs assessment, program planning and evaluation, social and environmental impact assessment, and public policy analysis.

Requirements for the B.A. Degree in Anthropology (ANT):

The major in Anthropology consists of a minimum of 48 credit hours including 44 credit hours in the field and the course Social Science Statistics (STA 3122) or its equivalent. Students may take more than this minimum if they desire. ANT 2000 is prerequisite to all subsequent courses. ANT 3100, ANT 3410, ANT 3515 and the specially designated section of LIN 3010 are required as intermediate level training in the main subdivisions of the field, and ANT 4034 and ANT 4935 complete the specific course requirements. Majors
are required to complete a minimum of 16 hours of elective coursework, 12 hours of which must come from three of the following courses:

- ANT 4084 (3-6) ANT 4593 (3-6)
- ANT 4193 (3-6) ANT 4674 (36)
- ANT 4493 (3-6)
  or ANT 4211 (3-6)

The remaining 4 minimum elective hours may come from any of the department's elective offerings including ANT 4907 (3-6), ANT 4901 (1-6), and those noted above. Anthropology majors are urged to become competent in the use of a foreign language. Exceptions to course prerequisites require the consent of the instructor.

**Required Core Courses (28 cr. hrs.)**

- ANT 2000 (4) ANT 3515 (4) ANT 4935 (4)
- ANT 3100 (4) ANT 4034 (4) *LIN 3010 (4)
- ANT 3410 (4)

**Requirements for the B.A. Degree in Anthropology—Linguistics (ANL):**

This sequence is designed for students who are particularly interested in the role of language in human behavior and cultural development.

**Required Core Courses (43 cr. hrs. minimum)**

- ANT 2000 (4) ANT 4674 (3-6)
- ANT 3100 (4) ANT 4935 (4)
- ANT 3410 (4) *LIN 3010 (4)
- ANT 3515 (4) LIN 4040 (4)
- ANT 4034 (4)
- ANT 4211 (3-6)
  or ANT 4493 (3-6)

**Required Supporting Courses (12 cr. hrs. minimum from the following group)**

- EXP 4523C (4) LIN 4600 (4) PHI 5225 (4)
- LIN 3801 (4) LIN 4701 (4) PSB 4013C (4)
- LIN 4377 (4) LIN 5231 (4) STA 3122 (4)

**Requirements for the M.A. Degree**

General requirements for graduate work are listed on page 46 and should be studied carefully.

The student must complete 49 quarter hours of graduate course work. All students must complete the four core seminar courses, then proceed to take minimally, one methods course, one selected topics course, and one regional problems course in one of the three tracks (medical anthropology, urban anthropology, public archaeology). In addition, each student must complete a graduate level statistics course, for a minimum of four quarter hours, and two graduate-level courses, normally taken outside the department, for a minimum of six quarter hours, chosen in mutual agreement by the student and his/her advisor; successfully pass the comprehensive examination; undertake directed research (internship); and write a thesis. The student must maintain a "B" average in all course work. In addition, the program requires a "B" average for the four core seminars before the student can proceed to take the comprehensive examination.

**I. COURSES REQUIRED OF ALL STUDENTS**

**A. Core Courses**

- ANT 6186 (4) ANT 6588 (4)
- ANT 6490 (4) ANT 6676 (4)

**B. Additional Requirements**

Two graduate-level courses normally taken outside the department; one graduate-level statistics course;

**C. ANT 6908 (1-15) ANT 6971 (1-6)**

**II. COURSES IN ONE OF THREE TRACKS**

**A. Medical Anthropology Track**

- ANT 6463 (4) ANT 6737 (4)
- ANT 6469 (4)

**B. Urban Anthropology Track**

- ANT 6446 (4) ANT 6448 (4)
- ANT 6447 (4)

**C. Public Archaeology Track**

- ANT 6196 (4) ANT 6198 (4)
- ANT 6197 (4)

**COMMUNICOLGY (AUD/AUF/ARH/ARF/SPP/SPF)**

A Master of Science Degree is offered through the Department of Communicology that is structured to meet the preparation requirements of the American Speech and Hearing Association for the Certificate of Clinical Competence or the national basic certification requirements of the Council on Education of the Deaf. In addition to the core subject material each student may elect to pursue a program of specialization in the areas of Speech Pathology, Audiology or Aural (Re)Habilitation.

Undergraduate students enroll in a five-year program terminating in the Master of Science degree in Speech Pathology, Audiology or Aural (Re)Habilitation. Students may apply for acceptance in the M.S. degree program upon attaining—junior class standing, completion of the basic departmental core curriculum with a 3.0 grade point average, submitting cumulative Graduate Record Examination scores of 850 or greater, and demonstrating competency in communication skills as determined by the Chairperson or his/her delegate. Students may not apply for the baccalaureate degree. Programs are planned through the master's degree at the time of acceptance.

Applicants holding a baccalaureate degree from an accredited college or university with appropriate prerequisite coursework will be eligible for admission if the following minimal requirements are met:

1. Submission of a cumulative score of 1000 or greater for the GRE aptitude tests plus a grade point average of 3.0 (A=4.0) for the last half of their undergraduate course work.
2. Submission of three satisfactory letters of recommendation for graduate study, and
3. Demonstration of competency in communication skills as determined by the Chairperson or his/her delegate.

**Requirements for the M.S. Degree in Speech Pathology—Post-Baccalaureate (SPP)**

General requirements for graduate work are already delineated by the University's Division of Graduate Studies. A minimum of 45 credits is required as well as completion of sufficient coursework and practicum to meet the American Speech and Hearing Association's requirement for clinical certification in speech pathology. The attainment of clinical competency as determined by a minimum GPA of 3.0 in Graduate Practicum and the approval of a majority of the academic staff of the Department of Communicology is also required for graduation. The student with an existing bachelor's degree and appropriate prerequisites may plan his/her degree program from among the following courses with approval of the Department Chairperson or his/her delegate:

- SPA 4333 (3) SPA 6231 (4)
- SPA 5002 (6) SPA 6245 (4)
- SPA 5131 (6) SPA 6322 (6)
- SPA 5201 (4) SPA 6332 (6)
- SPA 5210 (4) SPA 6335 (3)
- SPA 5222 (4) SPA 6410 (4)
- SPA 5303 (6) SPA 6423 (6)
- SPA 5402 (4) SPA 6505 (1-12)
- SPA 5550 (6) SPA 6825 (4)
- SPA 5552 (6) SPA 6930 (4)
- SPA 5557 (1-12) SPA 6910 (var.)
- SPA 5600 (4) or
- SPA 6205 (4) SPA 6971 (6)

*One section of LIN 3010 is for anthropology majors and requires ANT 2000 as a prerequisite.
Requirements for the Combined Undergraduate/Graduate M.S. Degree in Speech Pathology (SPF)

A minimum total of 225 credits is required for the combined undergraduate/graduate M.S. program. In addition to the General Distribution requirements the following courses will be required for all programs:

- LIN 3260 (6) SPA 5550 (6)
- SPA 3020 (6) SPA 5552 (6)
- SPA 3080 (6) SPA 5557 (1-12)
- SPA 3101 (6) SPA 5600 (4)
- SPA 3110 (6) SPA 6231 (4)
- SPA 4050 (1-12) SPA 6245 (4)
- SPA 4333 (3) SPA 6322 (6)
- SPA 4363 (6) SPA 6410 (6)
- SPA 5002 (6) SPA 6423 (6)
- SPA 5131 (6) SPA 6505 (1-12)
- SPA 5201 (4) SPA 6825 (4)
- SPA 5210 (4) SPA 6910 (var.)
- SPA 5222 (4) or
- SPA 5303 (6) SPA 6971 (6)
- SPA 5402 (4)

In addition, sufficient and appropriate coursework (approved by the Chairperson or his/her delegate) must be included to meet the preparation requirements of the American Speech and Hearing Association for the Certificate of Clinical Competence in Audiology. The attainment of clinical competence as determined by a minimum GPA of 3.0 in Graduate Practicum and the approval of a majority of the academic staff of the Department of Communicology is also required for graduation.

Requirements for the M.S. Degree in Audiology — Post Baccalaureate (AUD)

General requirements for graduate work are already delineated by the University's Division of Graduate Studies. A minimum of 45 credits is required as well as sufficient coursework, practicum and internship to meet the Florida State Department of Education certification requirements for specialization with the hearing impaired and to meet the national basic certification requirements of the Council on Education of the Deaf. The attainment of clinical competence as determined by a minimum GPA of 3.0 in Graduate Practicum and the approval of a majority of the academic staff of the Department of Communicology is also required for graduation. Students may plan programs with emphasis in the areas of preschool, school age, multiply handicapped, and adult hearing impaired. All teachers of the deaf programs will be planned from among courses offered by the appropriate teacher preparation areas within the College of Education as well as from the following:

- SPA 4333 (3) SPA 6332 (6)
- SPA 4363 (6) SPA 6335 (3)
- SPA 5002 (6) SPA 6345 (4)
- SPA 5201 (4) SPA 6423 (6)
- SPA 5303 (6) SPA 6505 (1-12)
- SPA 5402 (4) SPA 6825 (4)
- SPA 5557 (1-12) SPA 6910 (var.)
- SPA 6305 (4) SPA 6971 (6)
- SPA 6307 (4)

Requirements for the Combined Undergraduate/Graduate M.S. Degree in Audiology (AUF)

A minimum of 225 credits is required for the combined program. In addition to the General Distribution requirements the following courses will be required for all programs:

- LIN 3260 (6) SPA 5600 (4)
- SPA 3020 (6) SPA 6305 (4)
- SPA 3080 (6) SPA 6307 (4)
- SPA 3101 (6) SPA 6322 (6)
- SPA 3110 (6) SPA 6332 (6)
- SPA 4050 (1-12) SPA 6345 (4)
- SPA 4333 (3) SPA 6354 (4)
- SPA 4363 (6) SPA 6423 (6)
- SPA 5002 (6) SPA 6505 (1-12)

In addition, sufficient and appropriate coursework (approved by the Department Chairperson or his/her delegate) must be included to meet the preparation requirements of the American Speech and Hearing Association for the Certificate of Clinical Competence in Audiology. The attainment of clinical competence as determined by a minimum GPA of 3.0 in Graduate Practicum and the approval of a majority of the academic staff of the Department of Communicology is also required for graduation.
CRIMINAL JUSTICE (CCJ)

The major in criminal justice provides students with an in-depth exposure to the total criminal justice system including law enforcement, detention, the judiciary, corrections, and probation and parole. The program concentrates on achieving balance in the above aspects of the system from the perspective of the criminal justice professional, the offender, and society.

The objective of the graduate program in criminal justice is to develop a sound educational basis for professional training in one or more of the specialized areas comprising the modern urban Criminal Justice System.

Requirements for the B.A. Degree:

A minimum of 53 quarter hours is required of all undergraduate majors* in Criminal Justice including the following courses or their equivalents:

- CCJ 3020 (5) CCJ 3610 (8) CCJ 4934 (3)
- CCJ 3280 (4) CCJ 3620 (4) CCJ 4940 (12)

In addition to the above, a minimum of 17 hours in Criminal Justice selected by the student complete the requirements.

*In-service students are required to take only 4 hours of CCJ 4940, thus reducing their major course credits to 45 quarter hours.

Any student who receives a grade of "D" or lower in more than one USF CCJ course will be automatically barred from continuing as a Criminal Justice major. This applies only to students whose first USF CCJ course was taken during Fall Quarter (I) 1975 or thereafter.

Students electing to major in Criminal Justice as of Quarter I (Fall) 1978 will be required to obtain a score acceptable to the Department of Criminal Justice on an English proficiency test. This performance requirement must be met before the student completes 13 CCJ hours.†

†Approval Pending.

Requirements for the M.A. Degree:

University requirements for graduate study are given on page 46. Additionally, each graduate applicant should submit three letters of recommendation, a letter of intent to the Department of Criminal Justice, and show successful completion of an acceptable undergraduate social science introductory statistics course or equivalent.

Admission into graduate courses and/or the graduate program is contingent upon demonstrated proficiency in the English language, as determined by the Department. Special provisions for meeting this requirement may be arranged for out-of-state applicants.

NOTE: Individuals who wish to take courses in the graduate program as "Special Students" should contact the Director of Graduate Studies for the Department prior to their first class appearance. Such students will in general be prohibited from enrolling in CCJ 6910.

Further information may be obtained by contacting the Director of Graduate Studies of the Criminal Justice Department. Requirements for graduation for all M.A. candidates will consist of:

1. 45 credits of CCJ course work (or approved equivalents) which include:
   - CCJ 6285 (4) CCJ 6705 (4) CCJ 6946 (4)
   - CCJ 6605 (4) **CCJ 6920 (1)

2. Completion of a thesis; CCJ 6971

3. Completion of an oral defense of the thesis (occurs after the final draft of the thesis has been accepted by the student's committee).

All course work counted toward the degree must have the prior approval of the student's major professor and the Director of Graduate Studies of the Criminal Justice program.

*Should be taken first quarter in the program.

ECONOMICS (ECN)

Requirements for B.A. Degree

Economics is one of the vital disciplines investigating the complex problems and relationships in modern society. Indeed the very breadth of economics had led to major areas within the discipline, including labor economics, international economics, urban and regional economics, monetary economics, public finance, industrial organization, comparative economic systems, and the like. Students are given a sound grounding in economic theory and economic statistics to facilitate the investigation of the problems of human behavior, decision-making and organizational effectiveness in these problem areas.

A student may earn a Bachelor of Arts degree with a major in Economics by completing satisfactorily 48 credits in Economics in addition to College requirements. These 48 credits include:

- ECO 2013 (4) ECO 3203 (5) GEB 2111 (3)
- ECO 2023 (4) ECO 4303 (5) GEB 3121 (5)
- ECO 3101 (5)

In addition to this core, students are encouraged to select 3000-level courses in several of the applied areas during their junior year. The remaining economics electives must be selected from those upper level courses that provide the type of program that best suits the students' interests and objectives. Additional flexibility in pursuing these interests is provided by the ECO 4905 and ECO 4914 courses. However, not more than 10 hours of credit may be earned in ECO 4905 and ECO 4914.

Students majoring in economics are encouraged to supplement their programs with appropriate courses in other social sciences. Political science, psychology, sociology, and others contribute greatly to an enriched plan of study. Similarly, a variety of courses in economics are designed to permit students majoring in other disciplines to acquire the skills and insights provided in economics. The Department of Economics offers a concentration area for majors in the other social sciences. The concentration area will be designed for the individual student's program. Thus students have the option of broad interdisciplinary programs, a general grounding in many areas of economics, or a more intensive concentration in one of the areas within economics.

Students interested in majoring in economics or having a concentration area are encouraged to contact the departmental adviser for more information about the program.

GEOGRAPHY (GPY)

Requirements for the B.A. Degree

Geography as a discipline is designed to account for the variable character of the earth's surface. The two major divisions of geography are physical and cultural (human). Physical geography includes the study of earth-sun relationships, weather, climate, and natural features of the landscape such as landforms, soils, vegetation, and hydrology. Cultural geography studies people, their various cultures, levels of technology, and economic activities which operate differentially to alter the natural landscape.

Geography's overriding purpose is to understand the earth as the home of man. A major concern of geography is the wise use of natural, human, and economic resources. Therefore, ecological and environmental considerations are central to the study of geography.

Students are encouraged to take elective credits in a wide variety of disciplines because of the cross-disciplinary approach of geography. Both social and natural sciences are recommended.

Geography majors generally teach or work in various planning, resource management, or consulting agencies, both private and governmental at all levels—local, state, and federal.

A major in geography consists of 50 credit hours as follows:

Required core courses (40 cr. hrs.)

- GEA 3000 World Regional Geography (5)
- GEO 3013 Systematic Geography (5)
- GEO 3370 Systematic Geography (5)
- GEO 3402 Human Geography (5)
Requirements for the M.A. Degree:

General requirements for graduate work are given on page 46. 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. A computer language (such as Fortran) may be used to meet the language requirement.

**Thesis Program:** The 45 credit hours in geography must include:
- GEO 4100C Cartography (5)
- GEO 4500 Economic Geography (5)
- MET 4010C Meteorology (5)

Plus a regional course of student's choice such as Asia, Africa, Europe, etc. and ten credit hours in geography courses numbered 4000-5000.

Requirements for the B.A. Degree:

A minimum of 48 quarter hours is required for a major in history. 16 hours of 2000 level courses, or their equivalent, constitute the lower level requirements. HIS 4070, 4152, and 4936 constitute the upper level requirements for the degree. At least 20 hours of course work must be drawn from the 3000-4000 level. With the prior written consent of the student's adviser, majors may take up to eight (8) hours of course work offered by other departments and apply these hours toward meeting the course requirements in history. The course work undertaken outside the Department of History must complement the student's program in history.

It is recommended that history majors take ENC 3466, "Advanced Expository Writing," SPC 2023, "Fundamentals of Speech Communication," LIS 2001, "Use of the Library," and 27 quarter hours drawn from the following disciplines: Afro-American Studies, Anthropology, Economics, Geography, Political Science, Interdisciplinary Social Sciences, Psychology, Philosophy, Sociology, 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.

**Requirements for the M.A. Degree:**

The Department of History offers both a thesis and non-thesis Master of Arts degree organized around the following fields:

- **Field I:** American History to 1877
- **Field II:** American History Since 1877
- **Field III:** Ancient/Medieval
- **Field IV:** Early Modern Europe to 1789
- **Field V:** Modern Europe Since 1789
- **Field VI:** Latin America

The thesis degree program emphasizes preparation for further graduate study. The non-thesis degree program is designed to meet the needs of those students seeking a terminal degree at the Masters level.

In addition to the general requirements of the University, a candidate is required to complete a total of 48 hours in the following distribution: 8 hours of core courses; 16 hours in a major field in history; 8 hours in a minor field; and 8 hours of electives inside or outside the Department of History. Additionally, students in the thesis degree program will be expected to complete the remaining 8 hours in thesis credits. Non-thesis degree students must complete the remaining hours of their program in 6000 level courses.

Of the 48 hours required for the Master of Arts, at least 30 must be in formal, regularly scheduled course work. A minimum of 24 must be at the 6000 level. Subject to the satisfaction of above requirements, courses at the 5000 level are acceptable as part of a planned degree program. In special circumstances major advisers may approve up to 8 hours at the 4000 level with the definite understanding that additional and superior work will be required of the graduate student. The core courses, HIS 6112, "Analysis of Historical Knowledge," and HIS 6113, "Theory and Interpretation," are required of all M.A. students.

A reading proficiency in one foreign language must be demonstrated by students in the thesis degree program. A satisfactory preparation in the core course program, two fields, and the completion of a comprehensive examination are required of all M.A. students for graduation.

Upon admission into the graduate program, the M.A. students will select an adviser in their anticipated major field of study. Students will arrange their programs and schedules of appropriate courses with their major adviser. Additionally, the student in consultation with the adviser solicits two other members to serve on a guidance committee.

**INTERDISCIPLINARY SOCIAL SCIENCES (SSI/INT)**

The Department of Interdisciplinary Social Sciences includes the Interdisciplinary Social Science major and the major in International Studies; it offers a non-degree program in Women's Studies; it administers the Off-Campus Term Program. The Interdisciplinary Social Science major is administered by the Coordinator of Advising for the College.

The College Major (SSI):

Requirements for the B.A. Degree:

The college major offers students whose educational and vocational interests and objectives cross disciplinary lines an opportunity to undertake a program of study individually designed to serve those interests and objectives. That program of study must include 64 credits in courses offered in the college of which 12 must be in the course offerings of the Department of Interdisciplinary Social Science and one of these must be STA 3122, Social Science Statistics.

Within these parameters each student's program of study is to be evolved in consultation with and must be formally approved by the major adviser, who is the Coordinator of Advising. The program of study must include an area of concentration of at least 20 credits in one discipline; it will normally be expected to include a second area of concentration with either a disciplinary or multidisciplinary focus. The choice of areas of concentration and of courses within them is to be directly related to the educational goals of the student such as to provide an educational experience of excellent quality.
International Studies (INT): Requirements for the B.A. Degree:

The major in International Studies is designed to enable students to undertake programs of study based upon the course offerings of not less than three departments of the college, which will emphasize (a) preparation for careers in international activities, or (b) the study of particular international themes or topics, or (c) the study of particular regions or cultures.

The program of study is developed by each student in consultation with the major adviser so as best to serve the individual's educational goals. The program satisfying these requirements must be not less than 48 credits. Of these 24 (6 courses) must be in the international studies offerings of the Department of Interdisciplinary Social Sciences.

Required Core Courses (24 cr. hrs.)

SSl 3221 (4)  SSI 4250 (4)  SSI 4936 (4)
SSI 3260 (4)

One of the following:

AFS 3930 (4)  ASN 3030 (4)  LAS 3001 (4)
ASN 3000 (4)  EUS 3000 (4)

One of the following with international content:

SSI 3930 (2-5)  SSI 4900 (1-4)  SSI 4910 (1-4)

The additional 24 credits (6 courses) required must be selected from course offerings of at least two other departments which have international, regional, or cultural content.

Required Supporting Courses

18 cr. hrs. (or equivalent proficiency) of appropriate foreign language.

Students will be provided with advice as to choices of other courses offered throughout the University which will best reinforce and complement their major program. Each student's program must be planned with the international studies adviser who is empowered to make appropriate substitutions when educationally justified. Up to nine credits may be substituted for these requirements by successfully passing SSI 3955 (1-9).

Off-Campus Term

The Off-Campus Term Program, described more in detail elsewhere in this catalog, is a university-wide, interdisciplinary program which urges students to spend part of their time in college in pursuits that are self-designed and implemented in an environment entirely off-campus and out of the classroom. OCT provides for an "education in life" for full academic credit as an alternative to the traditional methods of learning.

Women's Studies Program

The Women's Studies Program offers a concentration of interdisciplinary courses focusing on the role of women in the modern world. Several of its courses are cross-listed with those of other departments, such as Anthropology and Psychology.

POLITICAL SCIENCE (POL)

Requirements for the B.A. Degree

The undergraduate program leading to the B.A. in political science offers a general purpose degree, and a number of more specialized alternatives. These include the pre-professional plan in political science, the pre-law plan in political science and honors in political science. The program is designed for students interested in and seeking to understand political problems and issues, the nature of the political process, as well as the philosophical and legal bases of political structures and processes at local, state, and national levels within the United States and elsewhere. Students satisfying the degree requirements prepares students for positions in the public and private sectors, for law school, for graduate work in political science and related disciplines, for positions in education, and for applied political activity.

A minimum of 48 credit hours is required to satisfy the requirements of the major. Students must take the eight credit hours which make up the core curriculum, and, in addition, a total of 40 credit hours in political science, of which at least 16 credit hours must be in courses at or above the 4000 level. For instructional purposes, the political science curriculum is divided into seven fields. However, there are no field requirements. Students are free to select courses from any and all fields within the curriculum.

The undergraduate curriculum in political science is composed of the following:

**Required Core Courses (8 cr. hrs.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>POS 2041</td>
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<tr>
<td>POS 3713</td>
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**Elections from the seven fields (40 cr. hrs.)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Course</th>
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</thead>
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<td>POT 3003</td>
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<tr>
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<td>POT 5626</td>
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<td>Field II</td>
<td>Comparative Government and Politics</td>
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<tr>
<td>CPO 3002</td>
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<tr>
<td>CPO 4930</td>
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<td>CPO 5934</td>
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<td>Field III</td>
<td>International Relations</td>
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<td>INR 3102</td>
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<td>INR 4502</td>
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<tr>
<td>Field IV</td>
<td>American National and State Governments</td>
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<tr>
<td>POS 2041</td>
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<td>POS 2112</td>
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<td>POS 5094</td>
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<td>Field V</td>
<td>Urban Government and Politics</td>
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<tr>
<td>PAD 5807</td>
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<td>Field VI</td>
<td>Public Administration</td>
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<td>Field VII</td>
<td>Law and Politics</td>
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<td>POS 3284</td>
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<td>POS 4614</td>
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<tr>
<td>POS 5699</td>
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</tbody>
</table>

The following courses are not included within any of the seven fields, but may still be used as elective hours:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>POS 4905</td>
<td>(1-5)</td>
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<tr>
<td>POS 4910</td>
<td>(1-8)</td>
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<td>POS 4970</td>
<td>4</td>
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<tr>
<td>POS 4936</td>
<td>4</td>
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</tbody>
</table>

**Pre-professional Plan in Political Science**

This plan is designed for students seeking an intensive undergraduate concentration in political science. Typically, students selecting this plan will be oriented towards graduate work in political science or other social sciences. A minimum of 52 credit hours is required.

Students must take eight credit hours of required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>POS 2041</td>
<td>4</td>
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<tr>
<td>POS 3713</td>
<td>4</td>
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</tbody>
</table>

Eleven additional courses in political science (44 cr. hrs.) must be taken, of which at least seven must be above the 300 level. Concentration within fields will be encouraged.

**Honors in Political Science**

Honors in political science is designed for the outstanding undergraduate who seeks an intensive program plus academic recognition during the senior year. Admission to the honors sequence, which is available to all undergraduate majors, will be controlled by grade point average, personal interviews and close scrutiny of the student's program and record. Students admitted will participate in an honors seminar, POS 4936 (4) and will write an honors thesis, POS 4970 (4).

**Field Work**

The Department of Political Science has a field work program which provides students with part-time internships with local government in the Tampa Bay area and with political parties at the
state and local level. Academic credit is available for such internships. For further information, contact the Department of Political Science.

Requirements for the Pre-Law Plan in Political Science

The Department of Political Science offers a pre-law plan designed for the undergraduate considering a career related to law: Field VII of the undergraduate curriculum (Law and Politics). The courses making up the Field are of particular interest to law-oriented students, but may be taken by others as well. The Department seeks to guide majors to those courses which develop skills and provide information needed for good performance in the study of law. The department also seeks to give students the skills and information needed for entry into a number of law-related positions in business and government. An integral part of this plan is a high degree of student access to the Department's pre-law adviser.

Prior to admission to a law school, a student must take the Law School Admission Test (LSAT). This test is given by the Educational Testing Service of Princeton, New Jersey. The Law School Admission Test is given simultaneously several times each year at the University of South Florida and numerous other testing centers throughout the state. Students should plan to take the test no later than February of the year in which they make application to a law school. Information pamphlets and application forms for the test are obtainable from the Department of Political Science, University of South Florida. (Pre-law is not a prescribed program of study. No specific college major is required for admission to law school. Those students intending to pursue the study of law must obtain a Bachelor of Arts degree in an area of personal choice.)

Requirements for the M.A. Degree

The graduate program leading to the M.A. in political science is designed to offer advanced general instruction in political science and public administration on national, state, and local levels of government. It prepares its graduates for positions of responsibility in the public and private sectors as well as in research, teaching, and study at the doctoral level.

General requirements for graduate study are given on page 46. The student must complete a minimum of 45 credit hours of graduate level courses, of which at least 24 hours must be at the 6000 level. A minimum of 30 credit hours must be taken in formal, regularly scheduled classes. Courses at the 5000 level are accepted for credit towards the degree when taken as part of a planned program, with the approval of the student's advisor and the Department of Political Science.

A minimum of 28 credit hours must be taken in political science; eight credit hours of approved electives may be taken outside the department. All graduate students must write a thesis (nine credit hours) or petition for substitution with 12 credit hours of regular courses. All students must pass a comprehensive examination in order to satisfy the degree requirements. This examination normally will be given following the completion of the thesis. Students whose petitions for the non-thesis option have been approved will be permitted to take the examination upon successful completion of at least 40 credit hours.

Graduate students who do not have an undergraduate major in political science, or its equivalent, may be admitted to the program upon the consent of the department. Such students may be asked to take additional courses beyond the minimum requirements. Students must be registered as full-time graduate students for at least one quarter of study.

Graduate students in the M.A. program are required to take the graduate core curriculum:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POS 5734</td>
<td>4</td>
</tr>
<tr>
<td>POS 5764</td>
<td>4</td>
</tr>
<tr>
<td>POS 6706</td>
<td>4</td>
</tr>
</tbody>
</table>

or

For instructional purposes, the graduate curriculum in political science has been divided into seven fields:

**Field I: Political Theory**
- POS 5734 (4)
- POS 6246 (4)
- POT 5626 (4)
- POS 5764 (4)
- POS 6706 (4)
- POT 6007 (4)

**Field II: Comparative Government and Politics**
- CPO 5934 (4)
- CPO 6008 (4)
- CPO 6036 (4)
- CPO 6007 (4)

**Field III: International Relations**
- INR 5086 (4)
- INR 6007 (4)
- INR 6107 (4)

**Field IV: American National and State Governments**
- POS 5094 (4)
- POS 6127 (4)
- POS 6427 (4)
- POS 6045 (4)
- POS 6145 (4)
- POS 6455 (4)

**Field V: Urban Government and Politics**
- PAD 5807 (4)
- POS 5155 (4)
- PUP 6538 (4)
- PAD 6306 (4)
- POS 6157 (4)
- URP 6056 (4)

**Field VI: Public Administration**
- PAD 5035 (4)
- PAD 5836 (4)
- PAD 6207 (4)
- PAD 5333 (4)
- PAD 6037 (4)
- PAD 6228 (4)
- PAD 5417 (4)
- PAD 6060 (4)
- PUP 6007 (4)
- PAD 5612 (4)

**Field VII: Law and Politics**
- PAD 5605 (4)
- POS 6607 (4)
- POS 6698 (4)
- POS 5699 (4)

The following non-field courses may be used as elective hours:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POS 6990</td>
<td>1-5</td>
</tr>
<tr>
<td>POS 6919</td>
<td>var.</td>
</tr>
<tr>
<td>POS 6934</td>
<td>4</td>
</tr>
</tbody>
</table>

More detailed instructions on specific programmatic requirements may be obtained from the Department of Political Science.

Requirements for the M.P.A. Degree

The Master's of Public Administration (M.P.A.) is primarily designed to meet the education and training needs of those students who are interested in professional careers in the public sector at all levels of government. General requirements for admission to the graduate program are given on page 46. In addition, the Department of Political Science may require letters of recommendation, provisional admission and/or additional undergraduate courses to provide the student with the background necessary for graduate study in the M.P.A. program.

Students must complete a minimum of 52 credit hours of graduate level courses, of which at least 30 credit hours must be at the 6000 level. A minimum of 36 credit hours must be taken in formal, regularly-scheduled classes. Courses at the 5000 level may be accepted for credit towards the degree when taken with the consent of a student's advisor.

The plan of study for an M.P.A. student consists of the following course distribution:

1. Twelve credit hours of core courses:
   - PAD 5060 (4)
   - POS 5734 (4)

2. Twenty credit hours in one of the three substantive areas:
   - Area I — National and State Administrative Systems:
     - PAD 5035 (4)
     - PAD 5807 (4)
     - POS 6095 (4)
     - PAD 5333 (4)
     - PAD 5836 (4)
     - POS 6099 (4)
     - PAD 5417 (4)
     - PAD 6207 (4)
     - POS 6919 (4)
     - PAD 5605 (4)
     - PAD 6037 (4)
     - POS 6934 (4)
     - PAD 5612 (4)
   - Area II — Urban Administration:
     - PAD 5333 (4)
     - PAD 6306 (4)
     - POS 6919 (4)
     - PAD 5417 (4)
     - PAD 5155 (4)
     - POS 6934 (4)
     - PAD 5807 (4)
     - POS 6095 (4)
     - PUP 6538 (4)
     - PAD 6207 (4)
     - POS 6157 (4)
     - URP 6056 (4)
     - PAD 6228 (4)
     - POS 6909 (4)
   - Area III — Public Policy:
     - PAD 5035 (4)
     - PAD 6207 (4)
     - POS 6919 (4)
     - PAD 5333 (4)
     - PAD 6306 (4)
     - POS 6934 (4)
     - PAD 5417 (4)
     - POS 6909 (4)
     - PAD 6037 (4)
3. Twelve credit hours of electives with a minimum of 6 hours from the College of Business Administration and other courses to be designated by the Department.

4. Eight credit hours of Field Work: POS 6942

Students must pass a comprehensive examination in the chosen substantive area. This examination may be oral or written, upon the recommendation of the student's adviser and the consent of the Department. Students may also petition the Department for permission to substitute a thesis in place of the fieldwork requirement, according to procedures established by the Department.

**PSYCHOLOGY (PSY)**

The undergraduate program in Psychology offers the student a well-rounded Liberal Arts education, together with the opportunity to gain a special acquaintance with issues such as those concerning man's role in modern society, tactics of social change, personal adjustment, and educational goals and strategies. In addition, the program provides excellent background training for qualified students who wish to pursue graduate work in disciplines such as clinical, experimental, or industrial psychology, education, aging studies, counseling, women's studies, black studies, or community relations.

The faculty of the Psychology Department is divided into three broad program areas: Clinical-Community, Experimental-Physiological, and Industrial-Organizational. Each of these program areas offers M.A. and Ph.D. level training as well as instruction at the undergraduate level. Members of the Clinical-Community faculty offer coursework and training in the areas of abnormal psychology, developmental psychology, behavior modification, psychotherapy, personality, and psychological assessment. Individual research experience is also available to qualified students. Members of the Experimental-Physiological faculty provide coursework and, for qualified students, direct and extensive research experience, in the areas of comparative psychology, electrophysiology, learning and conditioning, human memory, perception, and information processing. Members of the Industrial-Organizational faculty offer coursework and special training in areas including selection, training and evaluation of employees, job motivation and satisfaction, small group analysis, organizational theory, and human factors.

**Requirements for the B.A. Degree:**

Majors must complete at least 46 credit hours in the field. All majors must complete:

- PSY 2012 (4)
- PSY 3013 (4)
- PSY 3213 (5)
- PSY 3214 (5)

and select four courses as follows:

- CLP 4143 or EXP 4204C
- PPE 4004 or PSB 4013C (4)
- DEP 4005 or EXP 4404
- SOP 4004 or EXP 4523C (4)

In addition, 12 elective credits in psychology courses must be completed. PSY 4205 (4) is strongly recommended for all majors and required of students planning graduate training. Functional mathematics and biological science are recommended. Otherwise, students majoring in psychology are encouraged to complete a varied undergraduate program.

**Admission to Graduate Study:**

Applications for admission to the Ph.D. degree program are considered only once per year, for admission into the program in September of that year. The deadline for completed applications is March 1. A completed application includes a complete transcript of college work, a copy of scores on the GRE Aptitude Test, and three letters of recommendation (preferably from college instructors). Admission to the program is on a competitive basis. Details concerning the program, including a description of the credentials needed to be competitive with other applicants, and the Graduate Program in Psychology Handbook, are available from the Chairman, Graduate Admissions Committee, Department of Psychology, USF, Tampa, Florida 33620.

All graduate applicants are accepted to work toward the Ph.D. Work on the M.A. is considered as the initial portion of the Ph.D. Program. The M.A. is not intended to be the terminal degree.

**Requirements for the M.A. Degree:**

General requirements for graduate study are given on pages 42-47. The student must complete 50 credit hours of graduate psychology courses. All students must take at least two of the three methods courses, each of which must have a different topic, listed under PSY 6217. In addition, the student must complete a minimum of five of the following ten courses:

- CLP 6166 (5) EXP 6406 (5) PPE 6058 (5)
- DEP 6058 (5) EXP 6526 (5) PSB 6056 (5)
- EXP 6208 (5) INP 6056 (5) SOP 6059 (5)
- EXP 6307 (5)

The selection of these courses will be made by mutual agreement of the student and his advisory committee. Students with prior work in these areas may waive any of these courses by successfully passing a special examination given by the Psychology Department. Successful waiver may be used to reduce the overall credit hours requirement, if approved by the Psychology Department. A research thesis, PSY 6791, is required and the student must successfully pass an oral examination of the thesis as well as maintain a B average in course work, exclusive of thesis and research courses.

In addition to the M.A. degree in psychology, the Psychology Department and the Department of Educational Psychology in the College of Education jointly grant the M.A. degree in School Psychology (PSE). (See College of Education, page 69.)

**Requirements for the Ph.D. Degree:**

The Ph.D. in Psychology is offered in the fields of Clinical, General Experimental, and Industrial-Organizational Psychology. Specific requirements are determined by the student and his supervisory committee.

Assuming that the student has completed an M.A. degree in Psychology or its equivalent, the Psychology Department requires the following in addition to the general University requirements for the Ph.D. degree, on page 47.

1. Reading knowledge of two foreign languages, or substitution for either or both languages by demonstrated competency in an area or areas approved by the Psychology Department. Two substitutive areas currently approved are computer usage skills and electronics skills.
2. Supervised undergraduate psychology teaching experience.
3. A one-year internship in an approved clinical facility for Ph.D. students in the Clinical Psychology program.
4. Six months of internship in approved industries or community agencies as available for Ph.D. students in the Industrial-Organizational Psychology program.

**REHABILITATION COUNSELING (REH/REF)**

**Requirements for the M.A. Degree:**

General requirements for graduate work are given on pages 46. The M.A. program in Rehabilitation Counseling requires a minimum of 60 credit hours and offers the student the flexibility of entering while a University senior (REF) or after earning a baccalaureate degree (REH).

Minimum admission requirements for students electing the five-year approach include completion of 135 quarter hours, a score of at least 1000 on the GRE or a B average on all work beyond 90 credit hours, three letters of recommendation, and a personal
Minimum admission requirements for students entering the program as regular graduate students after they have earned a baccalaureate degree include a score of at least 1000 on the GRE or a B average during the last two years of college work, three letters of recommendation, and a personal interview.

The GRE must be taken by all students before applying to the program and the scores received by the department before the admission deadline. New students are accepted in Quarters I and III only, and the deadlines for completed applications are May 1 for Quarter I admission and December 31 for Quarter III admission.

Requirements for graduation for all students include a minimum of 60 credit hours in the post-baccalaureate program and a total of no less than 225 for those in the five-year program. The following 50-hour core courses are consistent with national certification standards of rehabilitation counselors and must be taken by all students:

- EGC 5065 (5)
- EGC 5376 (5)
- EGC 5493 (4)
- EGC 5725 (5)
- EGC 5850 (2)
- EGC 6205 (5)

Additional hours to complete either the minimum of 60 credit hours or the minimum of 225 credit hours may be elected from other Certification standards of rehabilitation counselors and must be taken by all students:

- EGC 6374 (3)
- EGC 6494 (4)
- EGC 6727 (5)
- EGC 6851 (2)
- EGC 6885 (10)

Admission to the Social Work Program

To be considered for admission to the B.S.W. Program as a major, a student must satisfy certain criteria. Specific admission criteria may be waived for a student who is a regular employee of a social service agency. In such instances, supporting documentation of skills and experience from an agency may be used in waiving a requirement. Generally, a student must meet the following requisites:

1. A student must be admitted to the University of South Florida.
2. A student must have filed a formal declaration of intent to major in Social Work with the College of Social and Behavioral Sciences, followed by a statement to the B.S.W. Program of intent to apply for admission into the program, at least one quarter in advance of application for admission.
3. A student must have completed all the General Distribution Requirements for the bachelor's degree and hold a minimum of Junior class standing.
4. A student must have a minimal grade point average of 2.75 on transfer to USF or have achieved a minimal grade point average of 2.75 in work at USF.
5. A student must have completed the prerequisite course, SOW 3302, Theory and Practice of Social Work I, with a minimum grade of B.
6. A student must file a formal application for admission to the Social Work Program and provide the names and addresses of three persons who can serve as references to the student's character and abilities.
7. A student must participate in a personal admissions interview with an Admissions Committee.

Waiver of the foregoing specific criteria may be considered by the Social Work Program upon presentation of documentation of extremely unusual circumstances. An example of such a circumstance might be a person who, though not currently employed in a social service agency, possesses a number of years of experience in the field.

Requirements for the B.S.W. Degree:

1. Social Work Practice Courses
   - SOW 4341 (5)
   - SOW 4343 (5)
2. Social Welfare Policy & Service Courses
   - SOW 3203 (4)
   - SOW 4232 (4)
3. Human Behavior & Social Environment Courses
   - HUS 4020 (5)
   - SOW 4102 (4)
4. Social Research Courses
   - SOW 3403 (4)
   - STA 3122 (4)
5. Directed Field Experience
   - SOW 4510 (15)
6. Additional Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD 3003</td>
<td>(4)</td>
</tr>
<tr>
<td>SOW 4361</td>
<td>(4)</td>
</tr>
<tr>
<td>Approved Electives (8)</td>
<td></td>
</tr>
<tr>
<td>Summary:</td>
<td></td>
</tr>
<tr>
<td>Core courses</td>
<td>43</td>
</tr>
<tr>
<td>Field Experience</td>
<td>15</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
</tr>
</tbody>
</table>

**SOCIOLOGY (SOC)**

As an undergraduate major, sociology provides students with three different kinds of program concentrations. One, attractive to the majority of possible students, may be described as "useful sociology." Many of the courses taken involve skills valuable in employment. For example, in a research methods course, interviewing skills can be used in sales, personnel work, social action careers, management, as well as in research. Similarly, careers which involve inter-personal relations can benefit enormously from courses in social psychology or small group analysis. Also, pre-professional training, as in law school, business administration, social work, and the like, can rest on courses that have "useful" aspects in them. Another concentration can be styled that of "liberal education." In this concentration, the central point is the question of the nature of man, the social being. Experience has shown that the truly liberally educated person is prepared for a variety of life experiences because that person understands how to ask important questions and how to go about getting answers. More importantly, the liberally educated person is equipped to take seriously the matter of being a human being. Sociology courses are aimed largely at problems on the nature of one's social world, the nature of man collectively, and on the individual person—the student as a unique being. Finally, sociology can be a major in the sense that it represents an intellectual discipline. Some students will find that it is interesting in its own right and that they would like to continue educational pursuits beyond the bachelor's degree.

These different concentrations differ as much in the attitude of the student taking the courses as in the selection of courses making up the individual program of study. They are not logically distinct concentrations: any one course may have elements of all three. For example, a student majoring in sociology as an academic discipline may at the same time involve himself in questions of a liberal education and at the same time pick up skills which will lead to satisfying employment. Students should understand that sociology majors are not restricted to social work or even social action types of careers.

Careers for which a major in sociology seems appropriate, judging from those who have so majored and succeeded in their fields, cover a wide range of lines utilizing interpersonal relations. Law, for example, is well predicated on sociology. So are personnel related careers, as in counseling. Similarly, knowledge of social relations, social structure, and class differences appear valuable to the entire spectrum of sales opportunities. Generally speaking, any career dealing with the public in a direct or indirect way will benefit from training in sociology. The benefits derive either from the knowledge gained or the skills (as in interviewing, a fundamental aspect of any formal system of people interacting with each other), or both. Specific elective courses should reflect individual differences; and the student's departmental major adviser will assist each one in making particular choices.

**Requirements for the B.A. Degree:**

The major consists of a minimum of 40 credit hours. The following courses may not be counted in the 40-hour minimum for the major but may be elected as additional courses: SOC 1020, MAF 2001, SOC 3696, SOC 4910. A model program of recommended sequences may be obtained from the Department of Sociology.

Transfer students should be aware that by University regulations, the equivalent of one academic year must be taken in "on-campus" courses. In Sociology, we require that of the 40 credits needed to make up the major, no more than 10 credits earned elsewhere can count towards the major, and in addition, the 10 credits offered for the major must reflect courses offered here. The purpose of this rule is to insure that our certification that an individual has majored in sociology genuinely reflects our understanding of sociology as a major and that there is no fundamental difference between the transfer student and those whose work was entirely or mostly completed at the University of South Florida.

**Required Core Courses (16 cr. hrs.)**

- SOC 2000 (4)
- SOC 3612 (4)
- STA 3122 (4)
- SOC 3500 (4)

**Additional Requirements (8 cr. hrs.)**

- One course of:
  - SOC 3800 (4)
  - SOC 4850 (4)
  - SOC 5825 (4)

- One course of:
  - SOC 3410 (4)
  - SOC 3422 (4)
  - SOC 4316 (4)

**Requirements for the M.A. Degree:**

A minimum of 45 credit hours and a thesis.

**Required Courses (23 cr. hrs.)**

- SOC 6502 (4)
- SOC 6606 (4)
- SOC 6971 (8)
- SOC 6526 (5)
- SOC 6699 (2)

University requirements for graduate study are given on pages 42-47.

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 (STA 3122, SOC 3612, SOC 3500, or equivalent). Documents are sent to the Office of Admissions. Instructions for applicants are available from the Department of Sociology.
COURSE DESCRIPTIONS

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 State Common Course prefix and number (see below), title of the course, and number of credits.

Credits separated by a colon indicate concurrent lecture and laboratory courses taught as a unit:

**PHY 3040, 3040L GENERAL PHYSICS AND LABORATORY** (4:1)

Credits separated by commas indicate unified courses offered in different quarters:

**AMH 2010, 2020 AMERICAN HISTORY I, II** (4,4)

Credits separated by a hyphen indicates variable credit:

**HUM 4905 DIRECTED RESEARCH** (1-5)

The abbreviation “var.” also indicates variable credit:

**MAT 7912 DIRECTED RESEARCH** (var.)

The following abbreviations are utilized in various course descriptions:

- **GR** See Grades in the Graduate Program heading in the Division of Graduate Studies
- **PR** Prerequisite
- **CI** With the consent of the instructor
- **CC** With the consent of the chairperson of the department or program
- **CR** Corequisite
- **Lec.** Lecture
- **Lab.** Laboratory
- **Dem.** Demonstration
- **Pro.** Problem
- **Dis.** Discussion

Course descriptions are listed under the following department and program headings:

- Afro-American Studies
- Aging Studies (Gerontology)
- American Studies
- Anthropology
- Art
- Astronomy
- Biology
- Botany
- Microbiology
- Zoology
- Business Administration
- Accounting
- Economics
- Finance
- Foundation Courses in Business (Graduate)
- General Business Administration
- Management
- Marketing
- Chemistry
- Communication
- Communicology
- Cooperative Education
- Criminal Justice
- Dance
- Education:
  - Art Education
  - Curriculum
  - Elementary Education
  - English Education
  - Exceptional Child Education
  - Foreign Language Education
  - Foundations
  - Guidance
  - Health Education
  - Humanities Education
- Junior College Education
- Library, Media, and Information Studies
- Measurement-Research-Evaluation
- Music Education
- Natural Science-Mathematics Education
- Physical Education for Teachers
- Reading Education
- Social Science Education
- Speech Communication-English Education
- Vocational and Adult Education
- Engineering:
  - Basic and Interdisciplinary Engineering
  - Electrical and Electronic Systems
  - Energy Conversion and Mechanical Design
  - Industrial Systems
  - Structures, Materials, & Fluids
  - Computer Service Courses
  - Engineering Technology
- English
- Environment
- Foreign Languages:
  - General Foreign Languages
  - Arabic
  - Classics
  - French
  - German
  - Greek
  - Hebrew
  - Italian
  - Latin
- Portuguese
- Romance
- Russian
- Spanish
- Geography
- Geology
- History
- Honors Program
- Human Services
- Humanities
- Interdisciplinary Language-Literature
- Liberal Studies
- Marine Science
- Mass Communications
- Mathematics
- Medical Technology
- Medicine
- Medical Sciences
- Military Science
- Music
- Nursing
- Off-Campus Term
- Philosophy
- Physical Education, Elective
- Physics
- Political Science
- Psychology
- Rehabilitation Counseling
- Religious Studies
- Ancient Studies
- Social Sciences, Interdisciplinary
- Social Work
- Sociology
- Theatre
- Women's Studies
Explanat ion of Florida's Common Course Numbering System

The course numbers appearing in this Catalog are part of a statewide system of prefixes and numbers developed for use by all public postsecondary and participating private institutions in Florida. One of the major purposes of this system is to make transferring easier by identifying courses which are equivalent, no matter where they are taught in the state. All courses designated as equivalent will carry the same prefix and last three digits.

The classifying and numbering of courses was done by community college and university faculty members in each academic discipline. Their work was reviewed by faculty members in all of Florida's postsecondary institutions who made suggestions and criticisms to be incorporated into the system.

The course numbering system is, by law, descriptive and not prescriptive. It in no way limits or controls what courses may be offered or how they are taught. It does not affect course titles or descriptions at individual schools. It seeks only to describe what is being offered in postsecondary education in Florida in a manner that is intelligible and useful to students, faculty and other interested users of the system.

The course numbering system was developed so that equivalent courses could be accepted for transfer without misunderstanding. Each public institution is accept for transfer credit any course which carries the same prefix and last three digits as a course at the receiving institution. For example, if a student has taken SOC-000 at a community college, he cannot be required to repeat SOC-000 at the school to which he transfers. Further, credit for any course or its equivalent, as judged by the appropriate faculty task force and published in the course numbering system, which can be used by a native student to satisfy degree requirements at a state university can also be used for that purpose by a transfer student regardless of where the credit was earned.

It should be noted that a receiving institution is not precluded from using non-equivalent courses for satisfying certain requirements.

General Rule for Course Equivalencies

All undergraduate courses bearing the same alpha prefix and last three numbers (and alpha suffix, if present) have been agreed upon to be equivalent. For example, an introductory course in sociology is offered in over 40 post secondary institutions in Florida. Since these courses are considered to be equivalent, each one will carry the designator SOC-000.

First Digit

The first digit of the course number is assigned by the institution, generally to indicate the year it is offered—e.g., 1 indicates freshman year, 2 indicates sophomore year. In the sociology example mentioned above, one school which offers the course in the freshman year will number it SOC 1000; a school offering the same course in the sophomore year will number it SOC 2000. The variance in first numbers does not affect the equivalency. If the prefix and last three digits are the same, the courses are substantively equivalent.

Titles

Each institution will retain its own title for each of its courses. The sociology courses mentioned above are titled at different schools “Introductory Sociology”, “General Sociology”, and “Principles of Sociology”. The title does not affect the equivalency. The courses all carry the same prefix and last three digits; that is what identifies them as equivalent.

Lab Indicators

Some courses will carry an alpha suffix indicating a lab. The alpha suffixes "L" and "C" are used as follows to indicate laboratories:

"L" means either (a) a course, the content of which is entirely laboratory, or (b) the laboratory component of a lecture-lab sequence in which the lab is offered at a different time/place from the lecture.

"C" means a combined lecture-lab course in which the lab is offered in conjunction with the lecture at the same time/place.

Examples: Marine Biology OCB – 013 (lecture only)

OCB - 013L (lab only)

Marine Biology OCB - 013C (lecture and lab combined) with Lab

Therefore, OCB – 013C is equivalent to OCB – 013 plus OCB – 013L.

Equivalency of Sequences

In certain cases, the sequences of courses in a given discipline are equivalent rather than the individual courses which make up these sequences. (For example, MAC — 132, — 133, — 134.) In these cases the subject matter topics may not be taught in the same sequence, course by course, in several institutions; however, upon completion of the full sequence at any of the several institutions, students have completed substantively equivalent content. These sequences are clearly identified in the Course Equivalency Profiles.

Explanation of Prefixes and Numbers

Prefixes and numbers in the course numbering system are not chosen at random; they are designed to describe course content in an organized fashion within a classification system developed for each subject matter area.

Generally, each of the major classifications in a discipline is represented by a three-alpha prefix. In some cases, one three-alpha prefix has been sufficient for the entire discipline. A discipline may use as many prefixes as necessary to accommodate its major classifications. The logic of the system allows it to be infinitely expandable with minimal disruption to existing numbers.

Example, for example, has seven prefixes: AFH, African History; AMH, American History; ASH, Asian History; EUH, European History; HIS, History-General; LAH, Latin American History; and WOH, World History. All history courses in the state will carry one of these prefixes.

A more specific example is AMH 3421, Early Florida History:

| Broad area of American history: | AMH |
| Part of discipline of History: | 3 |
| Junior level offering (at this particular institution): | 4 |
| In Taxonomy for AMH 400 series indicates “Areas in American History”: | 2 |
| In Taxonomy for AMH this digit indicates courses in “History of Florida” | 1 |
| Last digit in this case refers to group of equated courses dealing with “Early History of Florida” | 0 |

(Local titles are used for each particular course. The last three numbers are used to indicate equivalency.)

The number of prefixes is a function of the extent of the subclassifications of the given subject matter area.

When this work began there were 920 alpha prefixes in existence; with the new system there are now 370. As in most states there existed no uniformity in Florida’s prefixes as indicated by the example below:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Before</th>
<th>After</th>
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<tbody>
<tr>
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<td>Sociology</td>
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<td>3</td>
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<td>Philosophy</td>
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<td>Religion</td>
<td>17</td>
<td>1</td>
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<tr>
<td>Mathematics</td>
<td>50</td>
<td>10</td>
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</table>
Although it is true that a student majoring at one of the 38 participating institutions may have only one alpha prefix for his major (e.g., HY-History) and now he will have seven, all prefixes in the same subject matter areas will be the same throughout these institutions.

A complete inventory of taxonomic listings, equivalent and unique courses has been made available to each academic department of every institution in the state. Students through their local advisers, should use this information in designing programs which will transfer smoothly.

**Exceptions to the Rule for Equivalencies**

The following are exceptions to the general rule for course equivalencies:

A. All graduate level courses (except those which the faculty and their reviewing colleagues have determined to be substantively equivalent with undergraduate courses) are not automatically transferable.

B. All numbers which have a second digit of 9 (e.g., ART.205) are "place keeper" numbers for such courses as directed independent study, thesis hours, etc. Courses with -900 numbers must be evaluated individually and are not automatically transferable.

C. All internships, practicums, clinical experiences, and study abroad courses, whatever numbers they carry, are not automatically transferable.

D. Performance or studio courses in Art, Dance, Theatre, and Music are not automatically transferable but must be evaluated individually.

**Cross-Listing of Departments and Programs**

**Alphabetically by Department/Program**

<table>
<thead>
<tr>
<th>Department/Program</th>
<th>Common Course Prefixes</th>
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<tbody>
<tr>
<td>Afro-American Studies</td>
<td>AFA, AFH, AFS, AMH, CPO, ECP, HUM, INR, PHM PUP</td>
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### Cross-Listing of Departments/Programs

#### Alphabetically by Prefix

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<th>Departments/Programs</th>
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<td>French (Foreign Languages)</td>
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<td>FRW</td>
<td>French (Foreign Languages)</td>
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<td>GEA</td>
<td>Geography</td>
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<tr>
<td>GEB</td>
<td>Economics, Foundation Courses in Business (Graduate) General Business Administration</td>
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<td>GEO</td>
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<td>Aging Studies (Gerontology)</td>
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<td>GLY</td>
<td>Geology</td>
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<td>Medical Sciences (Medicine)</td>
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<td>GRE</td>
<td>Greek (Foreign Languages), Religious Studies</td>
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<td>Greek (Foreign Languages)</td>
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<td>HEB</td>
<td>Ancient Studies (Religious Studies), Hebrew (Foreign Languages)</td>
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<tr>
<td>HES</td>
<td>Health Education (Education), Physical Education for Teachers (Education)</td>
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<tr>
<td>HIS</td>
<td>History</td>
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**HLP** | Elementary Education (Education) |
**HUM** | Afro-American Studies, Humanities, Humanities Education (Education) |
**HUN** | Nursing |
**HUS** | Human Services |
**IDS** | Environment, Honors Program, Liberal Studies, Off-Campus Term |
**INP** | Psychology |
**INR** | Afro-American Studies, Political Science |
**ITA** | Italian (Foreign Languages) |
**ITT** | Italian (Foreign Languages) |
**ITW** | Italian (Foreign Languages) |
**JOU** | Mass Communications |
**LAE** | Curriculum (Education), Elementary Education (Education), English, Speech Communication-English Education (Education) |
**LAH** | History |
**LAS** | Social Sciences Interdisciplinary |
**LAT** | Latin (Foreign Languages) |
**LEI** | Physical Education for Teachers (Education) |
**LIN** | Social Science Interdisciplinary |
**LIS** | Communication, Communicology, English |
**LIS** | Interdisciplinary Language-Literature, Library, Media, and Information Studies (Education) |
**LIT** | English, Women's Studies |
**LNW** | Latin (Foreign Languages) |
**MAA** | Mathematics |
**MAC** | Mathematics |
**MAD** | Mathematics |
**MAE** | Elementary Education (Education), Mathematics, Natural Science-Mathematics Education (Education) |
**MAF** | Sociology |
**MAN** | Foundation Courses in Business (Graduate), General Business Administration, Management |
**MAP** | Electrical & Electronic Systems (Engineering), Mathematics |
**MAR** | Foundation Courses in Business (Graduate), Marketing |
**MAS** | Mathematics |
**MAT** | Mathematics |
**MCB** | Microbiology (Biology) |
**MEL** | Medicine |
**MET** | Geography |
**MGF** | Mathematics |
**MHH** | Mathematics |
**MHT** | Human Services |
**MIS** | Military Science |
**MLS** | Medical Technology |
**MMC** | Mass Communications |
**MTG** | Mathematics |
**MUC** | Music |
**MUE** | Elementary Education (Education), Music Education (Education) |
**MUG** | Music |
**MUH** | Music |
**MUL** | Music |
**MUN** | Music |
**MUS** | Music |
**MUT** | Music |
**MVB** | Music |
**MVK** | Music |
**MVO** | Music |
**MVP** | Music |
**MVS** | Music |
**MVV** | Music |
**MVW** | Music |
**NUR** | Nursing |
**NUS** | Nursing |
| NUU | Nursing                          | RED | Elementary Education (Education), Reading Education (Education) |
| OCB | Marine Science                  | REE | Finance                                           |
| OCC | Chemistry, Marine Science       | REL | Religious Studies                                 |
| OCE | Marine Science                  | RMI | Finance                                           |
| OCG | Marine Science                  | RTV | Mass Communications                               |
| ORI | Communication                   | RUS | Russian (Foreign Languages)                      |
| PAD | Management, Political Science   | RUT | Russian (Foreign Languages)                      |
| PCB | Biology, Marine Science, Microbiology (Biology), Zoology (Biology) | RUW | Russian (Foreign Languages)                      |
| PEL | Physical Education Elective, Physical Education for Teachers (Education) | SCE | Elementary Education (Education), Natural Science-Mathematics Education (Education) |
| PEP | Physical Education Elective     | SED | Communication, Speech Communication-English Education (Education) |
| PEM | Physical Education, Elective    | SES | General Business Administration                    |
| PEN | Physical Education Elective     | SOC | Sociology                                          |
| POT | Political Science               | SOP | Psychology, Women's Studies                       |
| POR | Portuguese (Foreign Languages)  | SOW | Human Services, Social Work                       |
| POS | Political Science, Women's Studies | SPA | Communicology                                     |
| PTH | Physical Science                | SPC | Communication                                     |
| PHI | Communication, Philosophy       | SPN | Spanish (Foreign Languages)                       |
| PHS | Physics                         | SPT | Spanish (Foreign Languages)                       |
| PHY | Physics                         | SPW | Spanish (Foreign Languages)                       |
| POR | Portuguese (Foreign Languages)  | SSE | Elementary Education (Education), Social Sciences Education (Education) |
| POS | Political Science, Women's Studies | SSI | Sociology, Sciences Interdisciplinary             |
| POT | Political Science                | STA | Mathematics, Social Science Interdisciplinary      |
| POW | Portuguese (Foreign Languages)  | THE | Theatre                                           |
| PPE | Psychology                      | TPA | Theatre                                           |
| PRT | Portuguese (Foreign Languages)  | TPP | Theatre                                           |
| PSB | Psychology                      | TTE | Structures, Materials, & Fluids (Engineering)     |
| PSY | Psychology                      | URP | Geography, Political Science                      |
| PUP | Afro-American Studies, Political Science | VIC | Mass Communications                               |
| PUR | Mass Communications              | WOH | History                                           |
| QMB | General Business Administration, Management | WST | Women's Studies                                   |
| REA | English                         | ZOO | Biology, Marine Science, Zoology (Biology)        |
AFRICA AND THE UNITED STATES (4)
A consideration of the nature and character of African cultural survivals in America including an examination of the historical and current political, economic, and cultural relations between the United States and Africa.

AFS 4910 RESEARCH AND FIELD STUDIES (1-4)
A course linking the study pursued by the student with research and work projects in the Tampa Black community.

AFS 4931 SOCIAL INSTITUTIONS AND THE GHETTO (4)
A study of social institutions as they relate to the American Black ghetto, with emphasis on social systems operating within and on the ghetto.

AFS 4949 SEMINAR IN TEACHING BLACK STUDIES (4)
An examination of instructional media, resources and approaches relevant to the study and teaching of the black experience.

AFS 4950 DIRECTED READINGS (2-4)
Independent readings in a particular area of Afro-American Studies, selected by student and instructor.

AFS 4951 SELECTED TOPICS IN AFRO-AMERICAN STUDIES (1-4)
Topics offered are selected to reflect student needs and faculty interests. In depth study in such areas as the Black Student and the American Educational Process; the Black Experience in the Americas; European Expansion in Africa to 19th century; Contemporary Economic Problems in Africa.

AFS 4953 SENIOR SEMINAR (4)
In-depth study of a particular topic in the area of Afro-American Studies. Individual research by students required.

AFS 4950 INTRODUCTION TO AFRICAN HISTORY (4)
An outline survey of pre-colonial African history including a prefatory introduction to the use of primary sources (such as archaeology, oral tradition, cultural anthropology, comparative linguistics, documents) in reconstructing the African past.

AFS 3200 AFRICAN HISTORY SINCE 1850 (4)
Survey of the colonial and post-colonial history of Africa. Emphasis on the impact of European and other alien influences on the continent, emergence of independent African states and post-independence problems of nation building and economic development.

AFS 3311 THE AFRICAN DIASPORA AND PAN-AFRICANISM (4)
An examination of the African Diaspora and the influence of African culture and civilization on the growth and development of world cultures. Emphasis on the extent to which African culture has enriched the development of mankind, the cultural significance of African voyages and migrations to Asia, Europe and the Americas, and the historical quest for racial and continental pan-Africanism including Garveyism.

AFS 4321 EDUCATIONAL DEVELOPMENT IN THE AFRICAN WORLD (4)
An examination of educational systems and experiences of African peoples' cultural past and needs for their future. In tracing the development of education in the African world, close attention will be paid to changing structures and functions of education as manifestations of governmental needs and desires. Similarities and contrasts of African and Afro-American educational patterns will be explored.
AGING STUDIES


UNDERGRADUATE COURSES

GEY 3000 INTRODUCTION TO GERONTOLOGY (4)
This course is designed to be an introduction to the study of aging. The aging process is viewed from a multi-disciplinary perspective including the biological, psychological, and sociological aspects of aging.

GEY 3100 CULTURE, SOCIETY AND AGING (4)
This course is designed to allow the student to consider aging within the context of culture and society. Emphasis will be given to cultural attitudes toward aging in the U.S. and to implications of cultural attitudes for human behavior.

GEY 3200 APPLIED GERONTOLOGY (4)
PR: CI. This course is designed to provide an integration of empirical data in the study of aging with practical experience in working with older people. Students will spend time actually working with older people in an agency or institutional setting and then will use experiences in conjunction with other available data to gain perspective in this field.

GEY 4900 DIRECTED READINGS (1-3)
PR: CI. A reading program with topics in gerontology conducted under the supervision of a faculty member.

GEY 4930 SEMINAR IN SELECTED TOPICS IN SOCIAL GERONTOLOGY (3)
PR: CI. This course will provide upper level students with a seminar experience in discussing topics of interest and social relevance in the field of aging. Each student will be required to prepare a seminar paper and present it.

GRADUATE COURSES

GEY 5250 LEISURE FOR THE AGING (4)
PR: CI. 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.

GEY 5350 AGING AND PERSONALITY (4)
PR: CI. An introduction to personality theory and concepts of adjustment with an overview of counseling techniques and rehabilitative efforts with the aged.

GEY 5600 PHYSICAL CHANGE AND AGING (4)
PR: CI. Lectures and discussion concerned with normal functioning of major organ systems of the body, age-related changes, and implications for behavior.

GEY 5610 PSYCHOLOGY OF AGING (4)
PR: CI. Consideration of basic psychological processes as related to the aging process, changes in functioning and perceptual motor and cognitive-areas from the developmental perspective.

GEY 5620 SOCIOLOGICAL ASPECTS OF AGING (4)
PR: CI. 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.

GEY 5630 ECONOMICS AND AGING (4)
PR: CI. 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.

GEY 5642 PERSPECTIVES ON DEATH AND DYING (4)
PR: CI. An examination of man's attempt to understand the meaning of death, and of his ways of meeting the personal and social crises which death presents. Study of the various psychological, medical, legal, and religious problems caused by dying and death, and of how individuals and groups have responded in the past and present. Emphasis on challenging and assisting the student to develop an objective and creative view of death and loss as it relates to the end of human life.

GEY 5645 MID-LIFE DEVELOPMENT (4)
PR: CI. The life space of middle age is explored through an examination of the physical, social, and psychological forces which influence this period of the human life span.

GEY 5901 DIRECTED READINGS (1-3)
PR: CI. A reading program with topics in gerontology conducted under the supervision of a faculty member.

GEY 6325 SOCIAL POLICY AND PLANNING FOR GERONTOLOGISTS (4)
PR: CI. This course is intended to enable graduates to be more knowledgeable and hence more effective practitioners in the processes of social policy development and social planning. It is designed to provide an empirical and analytical base for understanding the major issues and trends involved in existing and proposed programs and services in the field of aging at local, state, and federal levels of service planning and provision.

GEY 6390 INTERPERSONAL RELATIONS PRACTICUM (4)
PR: CI. A practicum involving students in group and individual settings in interaction with older persons. Content will include implications from interviewing, counseling, and current concepts of personality in the aged.

GEY 6391 PRACTICUM IN DEATH AND LOSS (4)
PR: GEY 5642 and GEY 6642. This course is offered for students who have a particular interest in gaining a deeper insight into the area of death and dying. The student will interact with dying patients and bereaved families in local nursing homes and hospitals. Laboratory and class discussions. Not restricted to majors. (S/U only.)

GEY 6450 SOCIAL RESEARCH METHODS APPLIED TO GERONTOLOGY (4)
PR: CI. 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.

GEY 6460 ADMINISTRATIVE APPLICATIONS OF DEMOGRAPHY (4)
PR: CI. 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.

GEY 6500 INSTITUTIONAL ADMINISTRATION (4)
PR: CI. 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.

GEY 6510 HUMAN RELATIONS IN ORGANIZATIONS (4)
PR: CI. 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.

GEY 6643 THE CONCEPT OF GRIEF AND LOSS (4)
PR: GEY 5642. Deals with the concepts of grief and loss, with particular emphasis on the loss of a significant other. Will provide
the opportunity for the individual to explore his own orientation toward death and dying.

**GEY 6907 INDEPENDENT STUDY** (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

**GEY 6911 PROJECTS IN AGING I** (1-6)
PR: CI. In-depth study of special topics with the objective of identifying problems for research and developing research proposals.

**GEY 6912 PROJECTS IN AGING II** (1-6)
PR: GEY 6911 and CI. A continuation of GEY 6911.

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**AMERICAN STUDIES**

Chairperson: H. M. Robertson; Professors: D. R. Harkness, H. M. Robertson; Associate Professors: R. J. Forrey, W. T. Morgan; Assistant Professor: C. E. Conway; Associate Professors: J. M. Belohlawek, R. M. Figg, F. J. Horrigan, E. M. Silbert; Assistant Professor: P. H. Waterman; Lecturer: C. Obermeyer.

**UNDERGRADUATE COURSES**

**AMS 2363 ISSUES IN AMERICAN CIVILIZATION** (2)
Through lecture and demonstration an examination of such topics as natural environment and the quality of life, Architecture and American society, leisure and technology, jazz music, the role of higher education in America, the American success myth and the status of the arts in America.

**AMS 3001 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 3201 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 3210 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 3230 AMERICA DURING THE TWENTIES AND THIRTIES** (5)
Heritage of the nineteen twenties and thirties: selected interdisciplinary materials are used to examine the relationships among regionalism, nationalism and internationalism during the twenties and thirties. Emphasis is placed on the measure of cultural nationalism attained by the United States during this period. Elective for non-majors.

**AMS 3302 ARCHITECTURE AND THE AMERICAN ENVIRONMENT** (4)
By means of slides, lectures and discussion the course examines 350 years of American architectural history. Architectural styles, aesthetics and the relation between a building and its social environment are stressed.

**AMS 3303 THE AMERICANIZATION OF ENGLISH** (4)
An overview of American attitudes toward the English language from colonization to the present. Among the topics discussed are: the American mania for correctness, the influence of the school marm, place and proper names and language prudery.

**AMS 3930 SELECTED TOPICS IN AMERICAN STUDIES** (1-5)
Offerings include The American Success Myth, Cultural Darwinism in America, America Through Foreign Eyes, Contemporary Topics in American Studies, Nineteenth and Twentieth Century American Communes.

**AMS 4910 INDIVIDUAL RESEARCH** (1-5)
The content of the course will be governed by student demand and instructor's interest. Instructor's approval required prior to registration.

**AMS 4930 SELECTED TOPICS IN AMERICAN STUDIES** (1-5)
Offerings include American Painting: its social implications, Technology in the Twentieth Century America, American Environmental Problems, Popular Culture in America.

**AMS 4935 SENIOR SEMINAR IN AMERICAN STUDIES** (4)
PR: Senior in American Studies or CI.

**AMS 4936 SENIOR SEMINAR IN AMERICAN STUDIES** (4)
PR: AMS 4935.

**AMS 4937 SENIOR SEMINAR IN AMERICAN STUDIES** (4)
PR: AMS 4935, AMS 4936.

**GRADUATE COURSES**

**AMS 6155 OUTSTANDING AMERICAN ACHIEVEMENTS** (4)
PR: Graduate standing. Open to non-majors. Representative works (from the arts, sciences, social sciences) reflecting the development of civilization in the U.S. from colonial times to the present.

**AMS 6254 U.S.A.: A DECADE IN DEPTH** (4)
PR: Graduate standing. Open to non-majors. An example would be The Thirties: Inter-related Aspects of American Life from the Stock Market Crash to Pearl Harbor. Other decades would serve in subsequent offerings to weave the interdisciplinary pattern of American life within a discrete period.

**AMS 6805 MAJOR IDEAS INFLUENCING AMERICAN CIVILIZATION** (4)
PR: Graduate standing. Open to non-majors. Examination of such concepts as individualism, freedom and liberalism as embodied in literature, politics, religion, architecture, economics, science and technology.

**AMS 6901 DIRECTED READINGS IN AMERICAN STUDIES** (1-5)
PR: Graduate standing. Open to non-majors. Guided reading designed to expand a student's knowledge in a particular area of interest. May be repeated up to six credit hours.

**AMS 6915 DIRECTED RESEARCH** (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

**AMS 6934 SPECIAL TOPICS IN AMERICAN STUDIES** (2-5)
PR: Graduate standing. Open to non-majors. Variable titles offered periodically on topics of special interest to American Studies students. May be repeated up to eight credit hours.

**AMS 6971 THESIS: MASTER'S** (var.)
Repeatable. (S/U only.)

**GEY 6930,6931,6932,6933 SEMINAR IN SOCIAL GERONTOLOGY** (2,2,2,2)
PR: CI. 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. (S/U only.)

**GEY 6940 FIELD PLACEMENT** (12)
PR: CI. 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. (S/U only.)
ANTHROPOLOGY

UNDERGRADUATE COURSES

ANT 2000 INTRODUCTION TO ANTHROPOLOGY
A general survey of physical anthropology, archaeology, linguistics and cultural anthropology.

ANT 3005 THE ANTHROPOLOGICAL PERSPECTIVE
Anthropological concepts relevant to contemporary life. Designed for non-anthropology majors. May not be counted for credit toward an anthropology major. This course is also available on WUSF/TV, Channel 16 by the Y.O.U. Program.

ANT 3100 ARCHAEOLOGY
PR: ANT 2000 or Cl. The comparative study of past cultures and societies.

ANT 3410 CULTURAL ANTHROPOLOGY
PR: ANT 2000 or Cl. The comparative study of cultures and societies.

ANT 3515 PHYSICAL ANTHROPOLOGY
PR: ANT 2000 or Cl. The comparative study of human physical variations and origins.

ANT 4034 HISTORY OF ANTHROPOLOGICAL THEORY
PR: ANT 3100, ANT 3410, ANT 3515, LIN 3010 or Cl. Survey and analysis of the development of theory and method.

ANT 4084 METHODS IN ANTHROPOLOGY
PR: Cl. Study and application of a selected field or laboratory method in anthropology. Prerequisites 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; (5) Others as specified.

ANT 4193 SELECTED TOPICS IN ARCHAEOLOGY
PR: ANT 2000, ANT 3100 or Cl. A detailed study of current issues such as contemporary problems in archaeology, North American archaeology, or historical archaeology. May be repeated as topics vary.

ANT 4211 REGIONAL ANTHROPOLOGY
PR: ANT 2000, ANT 3410 or Cl. A survey of cultures and societies in a limited area or region. May be repeated as subjects vary: (1) Indians of the North America; (2) Cultures of Africa; (3) Cultures of the Pacific; (4) Cultures of Mesoamerica; (5) Cultures of the Middle East; (6) Specified areas such as Asia, Southeastern U.S., or Florida depending on current interest and staff.

ANT 4493 SELECTED TOPICS IN CULTURAL ANTHROPOLOGY
PR: ANT 2000, ANT 3410 or Cl. A detailed study of current issues such as urban anthropology, applied anthropology, or medical anthropology. May be repeated as topics vary.

ANT 4593 SELECTED TOPICS IN PHYSICAL ANTHROPOLOGY
PR: ANT 2000, ANT 3515 or Cl. A detailed study of current issues such as primatology, human races, or culture and human biology. May be repeated as topics vary.

ANT 4674 SELECTED TOPICS IN LINGUISTIC ANTHROPOLOGY
PR: ANT 2000, LIN 3010 or Cl. A detailed study of current issues such as culture and cognition, communicative ethnography, or ethnographic semantics, or paralinguistic phenomena. May be repeated as topics vary.

ANT 4901 DIRECTED READING
PR: Cl. Individual guidance in concentrated reading on a selected topic in anthropology.

ANT 4907 INDIVIDUAL RESEARCH
PR: Cl. Individual guidance in a selected research project.

ANT 4935 SENIOR SEMINAR IN ANTHROPOLOGY
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 on and come to a better understanding of the nature of anthropology.

GRADUATE COURSES

ANT 5084 DIRECTED READING
PR: Cl. Individual guidance in concentrated reading on a selected topic in anthropology.

ANT 5915 INDIVIDUAL RESEARCH
PR: Cl. Individual guidance in a selected research project.

ANT 5937 SEMINAR IN ANTHROPOLOGY
PR: Cl. Topics to be chosen by students and instructor.

ANT 6186 SEMINAR IN ARCHAEOLOGY
PR: Graduate standing. One of four core courses required of all students. A critical survey of archaeology emphasizing contributions to applied anthropology. Open to non-majors.

ANT 6196 METHODS IN PUBLIC ARCHAEOLOGY
PR: Three of the core courses, or Cl. Field techniques, methods of collection, analysis, and interpretation of data. May be repeated up to 8 credit hours as topics vary. Open to non-majors. Lec-lab, field trips.

ANT 6197 SELECTED TOPICS IN PUBLIC ARCHAEOLOGY
PR: Three of the core courses, or Cl. Current topical issues in public archaeology. May be repeated up to 8 credit hours as topics vary. Open to non-majors.

ANT 6198 REGIONAL PROBLEMS IN PUBLIC ARCHAEOLOGY
PR: Three of the core courses, or Cl. Contemporary problems in archaeology in the context of a specific region. May be repeated up to 8 credit hours as topics vary. Open to non-majors.

ANT 6446 METHODS IN URBAN ANTHROPOLOGY
PR: Three of the core courses, or Cl. Field techniques, methods of collection, analysis, and interpretation of data. May be repeated up to 8 credit hours as topics vary. Open to non-majors. Lec-lab, field trips.

ANT 6447 SELECTED TOPICS IN URBAN ANTHROPOLOGY
PR: Three of the core courses, or Cl. Current topical issues in urban anthropology. May be repeated up to 8 credit hours as topics vary. Open to non-majors.

ANT 6448 REGIONAL PROBLEMS IN URBAN ANTHROPOLOGY
PR: Three of the core courses, or Cl. Contemporary problems in urban anthropology in the context of a specific region. May be repeated up to 8 credit hours as topics vary. Open to non-majors.
ANT 6463 REGIONAL PROBLEMS IN MEDICAL ANTHROPOLOGY
PR: Three of the core courses, or CI. Contemporary problems in medical anthropology in the context of a specific region. May be repeated up to 8 credit hours as topics vary. Open to non-majors.

ANT 6469 SELECTED TOPICS IN MEDICAL ANTHROPOLOGY
PR: Three of the core courses, or CI. Current topical issues in medical anthropology. May be repeated up to 8 credit hours as topics vary. Open to non-majors.

ANT 6490 SEMINAR IN CULTURAL ANTHROPOLOGY
PR: Graduate standing. One of four core courses required of all students. A critical survey of cultural anthropology emphasizing contributions to applied anthropology. Open to non-majors.

ANT 6588 SEMINAR IN PHYSICAL ANTHROPOLOGY
PR: Graduate standing. One of four core courses required of all students. A critical survey of physical anthropology emphasizing contributions to applied anthropology. Open to non-majors.

ART


UNDERGRADUATE COURSES

ARH 3000 INTRODUCTION TO ART
An expanded introductory treatment of basic concepts. For art majors and non-majors.

ARH 4100 PREHISTORIC AND ANCIENT ART
A comprehensive study of Paleolithic, Neolithic, Egyptian, Assyrian and Mesopotamian painting, sculpture and architecture.

ARH 4170 GREEK AND ROMAN ART
A comprehensive study of Aegean, Mycenaean, Etruscan, Greek and Roman painting, sculpture and architecture.

ARH 4200 MEDIEVAL ART
A comprehensive study of early Christian, Byzantine and Medieval painting, sculpture, architecture, and manuscript illumination.

ARH 4301 RENAISSANCE ART
A comprehensive study of Renaissance and Mannerist painting, sculpture and architecture in Italy and Northern Europe.

ARH 4350 BAROQUE AND ROCOCO ART
A comprehensive study of the painting, sculpture and architecture in France, Italy, Spain and the Netherlands in the seventeenth and early eighteenth centuries.

ARH 4430 NINETEENTH CENTURY ART
A comprehensive study of nineteenth century painting, sculpture and architecture in France and England.

ARH 4450 TWENTIETH CENTURY ART
A comprehensive study of painting, sculpture and architecture from Cezanne to the present in Europe and the United States. Required of all art majors.

ARH 4530 ORIENTAL ART
An introduction to the arts of China, Japan and other Far Eastern countries.

ARH 4743 INTRODUCTION TO THE PERSONAL FILM
PR: ART 3630C. Comparison of philosophical and technical distinctions between the personal film and theatrical or commercial release.

ARH 4746 ANATOMY OF THE COLLABORATIVE FILM
PR: ART 4631C. Analysis of aesthetic and other selected aspects of film produced through collaborative efforts. May be repeated.

ARH 4790 SELECTED TOPICS IN THE HISTORY OF FILM
In-depth investigation of a selected period, development, or school in the history of film as art. May be repeated.

ARH 4796 CRITICAL STUDIES IN ART HISTORY
PR: CI. Specialized intensive studies in art history. Specific subject matter varies. To be announced at each course offering. May be repeated for different topics only.

ARH 4937 SEMINAR IN THE HISTORY OF ART HISTORY
PR: Four courses in Art History at the 4000 level, CI. An examination of the origins of Art History as a discipline and the changing nature of Art History from Vasari to the present.

ART 2202C VISUAL CONCEPTS I
Studio problems supplemented by reading and discussion. Consideration of spatial organization of the two-dimensional surface.

ART 2203C VISUAL CONCEPTS II
Studio programs supplemented by reading and discussion. Consideration of three-dimensional organization of space and mass.

ART 2205C VISUAL CONCEPTS III

ART 3110C CERAMICS I
PR: Visual Concepts II and Introduction to Art. Intermediate problems in ceramics with emphasis on the exploration of methods and media and the development of individual concepts.

ART 3301C DRAWING I
PR: Visual Concepts I and III and Introduction to Art. Drawing as a means of formal organization. Introduction to intermediate drawing methods and media.

ART 3400C GRAPHICS I

ART 3510C PAINTING I
PR: Visual Concepts I and III, Introduction to Art, and Drawing I. Intermediate problems in painting with an emphasis on the
exploration of methods and media and the development of individual concepts.

ART 3600C PHOTOGRAPHY I (4)
PR: Visual Concepts I and III and Introduction to Art. Intermediate problems in photography with emphasis on the exploration of materials and media and the development of individual concepts.

ART 3630C CINEMATOGRAPHY I (4)
PR: Visual Concepts I and III and Introduction to Art. Intermediate problems in cinematography with emphasis on the exploration of materials and media and the development of individual concepts.

ART 3701C SCULPTURE I (4)
PR: Visual Concepts II and Introduction to Art. Intermediate problems in sculpture with emphasis on the exploration of materials and media and the development of individual concepts.

ART 3935 STUDIO TECHNIQUES: SELECTED PROJECTS (2)
PR: Visual Concepts I, II, and III, Introduction to Art and Cl. Concentration in specialized technical data and process. May be repeated for credit for different topics only.

ART 4111C CERAMICS II (4)
PR: ART 3100C. Continued problems in ceramics. May be repeated.

ART 4232C DRAWING II (4)
PR: ART 3301C. Continued problems in drawing. May be repeated.

ART 4421C LITHOGRAPHY II (4)
PR: ART 3400C. Continued problems in lithography. May be repeated.

ART 4431C SILKSCREEN II (4)
PR: ART 3400C. Continued problems in silkscreen. May be repeated.

ART 4471C INTAGLIO II (4)
PR: ART 3400C. Continued problems in intaglio. May be repeated.

ART 4520C PAINTING II (4)
PR: ART 3510C. Continued problems in painting. May be repeated.

ART 4601C PHOTOGRAPHY II (4)
PR: ART 3600C. Continued problems in photography. May be repeated.

ART 4631C CINEMATOGRAPHY II (4)
PR: ART 3630C. Continued problems in cinematography. May be repeated.

ART 4633C SOUND TECHNIQUES (4)
PR: ART 3630C. The recording and editing of sound for film. Collaboration with other departments, particularly Music and Theatre, is encouraged. To be taken concurrently with ART 4631C or ART 5642C whenever possible.

ART 4702C SCULPTURE II (4)
PR: ART 3701C. Continued problems in sculpture. May be repeated.

ART 4900 DIRECTED READING (1-6)
PR: CI and CC. A course of reading and study in an area of special concern governed by student demand, instructor interest and/or departmental requirements. Selection of study area and materials for the course must be agreed upon and appropriate credit must be assigned prior to registration. A contract with all necessary signatures is required for registration. May be repeated for credit for different study areas only.

ART 4905 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.

ART 4930 IDEA SEMINAR (2)
PR: Introduction to Art. Readings, discussion. Subjects will change each quarter, determined by mutual student and faculty interests. May be repeated.

ART 4935 ART SENIOR SEMINAR (3)
PR: Senior Status. To aid majors to understand, appraise, and perfect their own art and technique through critical and aesthetic judgments of their colleagues. Discussion and critical evaluation.

GRADUATE COURSES
Admission to all 5000 level studio courses by Consent of Instructor

ARH 6055 ART HISTORY (4)
PR: Cl. May be repeated.

ART 5125C CERAMICS (4)
PR: ART 4111C. Advanced problems in the various ceramic techniques, including throw and glaze calculation. May be repeated.

ART 5340C DRAWING (4)
PR: ART 4320C. Advanced problems in various drawing techniques. Emphasis on individual creative expression. May be repeated.

ART 5422C LITHOGRAPHY (4)
PR: ART 4421C. Advanced problems in various lithographic techniques. Emphasis on individual creative expression. May be repeated.

ART 5432C SILKSCREEN (4)
PR: ART 4431C. Advanced problems in the various silkscreen techniques. Emphasis on individual creative expression. May be repeated.

ART 5473C INTAGLIO (4)
PR: ART 4471C. Investigations into more complex intaglio processes including photoengraving and color printing procedures. Emphasis on personal conceptual development in graphic media. May be repeated.

ART 5532C PAINTING (4)
PR: ART 4520C. Advanced problems in the various painting techniques. Emphasis on individual creative expression. May be repeated.

ART 5604C PHOTOGRAPHY (4)
PR: CI. Advanced work in photography and related media leading to development of personal/expressive statements. May be repeated.

ART 5642C CINEMATOGRAPHY (4)
PR: ART 4631C. Advanced studio work using black and white, color and sound as technical and aesthetic factors in visual, artistic productions. May be repeated.

ART 5730C SCULPTURE (4)
PR: ART 4702C. Advanced problems in the various techniques of sculpture. Emphasis on individual creative expression. May be repeated.

ART 5910 RESEARCH (1-6)
PR: CC. May be repeated.

ART 5936 STUDIO TECHNIQUES: SELECTED PROJECTS (2)
PR: Visual Concepts I, II, and III, Introduction to Art, the topic-technique-related 3000-4000 level studio sequence and Cl. Concentration in specialized technical data and process. May be repeated for credit for different topics only.

ART 6126C CERAMICS (4)
PR: CI. May be repeated.

ART 6341C DRAWING (4)
PR: CI. May be repeated.

ART 6423C LITHOGRAPHY (4)
PR: CI. May be repeated.

ART 6450C SILKSCREEN (4)
PR: CI. May be repeated.

ART 6473C INTAGLIO (4)
PR: CI. May be repeated.
ART 6580C PAINTING
PR: Cl. May be repeated. (4)

ART 6620C PHOTOGRAPHY
PR: Cl. May be repeated. (4)

ART 6645C CINEMATOGRAPHY
PR: Cl. May be repeated. (4)

ART 6731C SCULPTURE
PR: Cl. May be repeated. (4)

ART 6907 INDEPENDENT STUDY
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.) (var.)

ART 6911 DIRECTED RESEARCH
PR: GR. Master's level. Repeatable. (S/U only.) (var.)

ART 6936 GRADUATE SEMINAR
PR: Cl. Advanced course in theoretical and conceptual foundations of the visual arts. The specific structure and content to be determined by the instructor. Must be repeated for a minimum of four hours. (2)

ART 6937 GRADUATE INSTRUCTION METHODS
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of five credits per student. (S/U only.) (1-5)

ART 6940 SELECTED TOPICS IN ART
PR: Graduate Standing and Cl. A variable credit depending upon the scope and magnitude of the work agreed to by the student and the responsible member of the faculty. May be repeated. (1-6)

ART 6956 GRADUATE STUDIO THESIS DOCUMENTATION
PR: Cl. An advanced seminar focused on the problems of documenting in verbal form the development of a body of work in the visual arts. (2)

ART 6972 THESIS: MASTER'S
Repeatable. (S/U only.) (var.)

ASTRONOMY


UNDERGRADUATE COURSES

ASI 4165 ANALYTICAL TECHNIQUES IN ASTRONOMY
PR: Calculus and analytic geometry, AST 3017, AST 3018, AST 3019. Newton's and Kepler's laws, two body problem, elementary perturbation theory, rigid body dynamics, tides, numerical analysis, planetary interiors and atmospheres, solar system cosmogony. (4)

AST 2005 DESCRIPTIVE ASTRONOMY I
History of astronomy, celestial phenomena, timekeeping, astronomical instruments, properties of light, contents and elementary dynamics of the solar system. Descriptive approach with a minimum of mathematics. No credit for astronomy majors. (5)

AST 2006 DESCRIPTIVE ASTRONOMY II
Distances, fundamental properties and evolution of stars; the sun as a star, unusual stars (exploding stars, pulsating stars, etc.); the nature of the Galaxy and other galaxies, cosmology. Descriptive approach with a minimum of mathematics. No credit for astronomy majors. (5)

AST 2032C ILLUSTRATIVE ASTRONOMY
Constellations, use of small telescopes, etc., apparent motions of celestial objects, comets and meteors, seasons and weather. Current events in the space program. Planetarium and open sky demonstrations. No credit for astronomy majors. Lec.-Lab. (4)

AST 3017 INTRODUCTORY ASTRONOMY I
CR: AST 3025L, MAC 2243 or MAC 3411 or Cl. Aspects of sky, coordinate systems, timekeeping, elementary mechanics of planetary motion, nature and properties of light, eclipses, instrumentation. A quantitative first course for science and math majors. (4)

AST 3018 INTRODUCTORY ASTRONOMY II
CR: MAC 2243 or MAC 3411. Determination of star positions, distances and motions; solar system, qualitative spectroscopy and spectral classification of stars; binary stars and clusters, variable stars, photometry, telescopes and instrumentation. (4)

AST 3019 INTRODUCTORY ASTRONOMY III
CR: MAC 2243 or MAC 3411 or Cl. Introduction to basic astrophysics and stellar structure and evolution; interstellar medium, nebulae and pulsars; nature and dynamics of the Milky Way and other galaxies, quasars and cosmology. A quantitative introduction to stellar and galactic astronomy for science and math majors. (4)

AST 3025L ASTRONOMICAL LABORATORY I
CR: AST 3017, required of majors, open to non-majors. Exercises in connection with AST 3017. Use of small telescopes, introduction the use of small calculators. (1)

AST 3026L ASTRONOMICAL LABORATORY II
Required of majors. Introduction to astronomical instruments and observing practice, and actual observations at the telescope. Use of auxiliary instruments and reduction of observations. (2)

AST 3033 CONTEMPORARY THINKING IN ASTRONOMY
PR: Junior or senior standing or Cl. Current concepts of astronomy and science of general interest; background facts; artificial satellites, space probes; surface conditions of planets and evolution of the star; cosmology. No credit for astronomy majors or mathematics majors. (5)

AST 3043 HISTORY OF THE SCIENCE OF ASTRONOMY
To familiarize seriously interested students with the history of Astronomy and the influence of this discipline on the development of human knowledge. (5)

AST 3652 NAVIGATION
PR: Some knowledge of geometry, algebra and trigonometry. Timekeeping, use of sextant, constellations, navigation with minimum equipment, some spherical astronomy. (3)

AST 4214 STELLAR ASTROPHYSICS
PR: AST 3018 or Cl, MAC 3412. The physical characteristics of stars, their measurement, and their distribution. Analysis of stellar radiation. Double stars, associations, clusters, galaxies. (5)

AST 4622 GEOMETRY AND KINEMATICS OF THE UNIVERSE
PR: Cl. Astronomical coordinate systems and their mutual relationships, time. (4)

AST 4905 INDEPENDENT STUDY
PR: Cl. Specialized independent study determined by the student's needs and interests. The written contract required by the College of Natural Sciences specifies the regulations governing independent study. May be repeated. (S/U only.) (1-4)

AST 4910 UNDERGRADUATE RESEARCH
PR: Senior or advanced junior standing and Cl. Participation in professional research with a view to publication of results. May be repeated. (S/U only.) (1-6)

AST 4933 ASTRONOMY SEMINAR
PR: Senior or advanced junior standing. May be repeated twice. (S/U only.) (1)
GRADUATE COURSES

ASI 5205 INTRODUCTION TO RADIO ASTRONOMY (4)

ASI 6125 PHOTOGRAPHY (4)
PR: AST 3018 or CI, MAC 3414. Theoretical, observational, and instrumental concepts required in astronomical photography.

AST 5231 STELLAR CONSTITUTION AND EVOLUTION (4)

AST 5274 BINARY STARS (4)
PR: AST 3018 or CI, MAC 3411 or CI. Principles used to find the properties of astrometric, eclipsing, spectroscopic and visual binaries.

AST 5506 INTRODUCTION TO CELESTIAL MECHANICS (5)
PR: AST 3018 or CI, MAC 3411 and some knowledge of differential equations, or CI. The two-body problem, artificial satellites, elements of perturbation theory.

AST 5932 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.

AST 6241 STELLAR ATMOSPHERES (4)
PR: AST 4214 and MAA 4212 or CI. Basic observational data. Thermodynamics of the gaseous state. Elements or spectroscopy. The transfer equation (continuum and lines). The problem of calculation of atmospheres.

AST 6507 CELESTIAL MECHANICS (6)
PR: AST 5506 or CI. Planetary theory, lunar theory, Hamiltonian systems, canonical variables, restricted three-body problem, artificial satellite theory, equilibrium and resonance. Certain topics will be emphasized according to the needs of the students.

AST 6605 POSITIONAL ASTRONOMY (6)
PR: AST 4622 or CI. The accurate determination of relative and absolute star positions, and related problems.

AST 6907 INDEPENDENT STUDY (var.)
Independent study in which students must have a contract with an instructor. Repeatable. (S/U only.)

AST 6915 DIRECTED RESEARCH (var.)
PR: GR. Master’s level. Repeatable. (S/U only.)

AST 6916 GRADUATE RESEARCH METHODS (1-5)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

AST 6931 SELECTED TOPICS IN ASTRONOMY (1-6)
PR: CI.

AST 6935 GRADUATE SEMINAR (2)
PR: CI. May be repeated. (S/U only.)

AST 6945 GRADUATE INSTRUCTION METHODS (1-5)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

AST 6971 THESIS: MASTER’S (var.)
Repeatable. (S/U only.)

BIOLOGY


Biology

UNDERGRADUATE COURSES

APB 2130 ENVIRONMENT (4)
The application of basic principles of ecology to relevant problems and topics relating to man's environmental interactions through consideration of scientific and popular literature. For non-majors.

APB 2140 FOODS AND DRUGS (4)
The application of basic biological principles to relevant problems and topics in nutrition and drugs through the consideration of scientific and popular literature. For non-majors.

APB 2160 GENES AND PEOPLE (4)
The application of basic biological principles of human heredity to relevant problems and topics through the consideration of scientific and popular literature. For non-majors.

APB 2250 SEX, REPRODUCTION AND POPULATION (4)
The application of basic biological principles from subject areas to relevant problems and topics through the consideration of scientific and popular literature. For non-majors. Qtr. I-IV.

APB 3110 MAN, MICROBE AND MOLECULE (4)
Origin of life, control of diseases, environmental quality and the use of microorganisms as tools in searching for molecular explanations of living phenomena. For non-majors.

APB 3123 MAN'S BIOLOGICAL ENVIRONMENT (4)

BOT 4663 INTRODUCTION TO TROPICAL BIOLOGY (5)

BSC 2010C FUNDAMENTALS OF BIOLOGY I (4)
A brief overview of living organisms, respiration, photosynthesis, cell structure, and specialization. Lec.-lab. Qtr. I, II.

BSC 2011C FUNDAMENTALS OF BIOLOGY II (4)
Cell division, genetics, reproduction and development, physiology. Lec.-lab. Qtr. II, III.

BSC 2012 FUNDAMENTALS OF BIOLOGY III (4)
Neurophysiology, behavior patterns, genetics, and evolution; ecology. Lec.-dis. Qtr. I, III.

BSC 2933 TOPICS IN BIOLOGY (4)
Lectures, individual reading, movies, classroom discussion, and evaluation of selected biological topics, reflecting biological principles. For non-majors.

BSC 4905 INDEPENDENT STUDY (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. The written contract required by the College of Natural Sciences specifies the regulations governing
independent study. May be repeated. (S/U only.)

BSC 4910 UNDERGRADUATE RESEARCH (1-6)
PR: CI. Individual investigation with faculty supervision. (S/U only.)

BSC 4930 SEMINAR IN BIOLOGY (1)
PR: CI. Senior or advanced junior standing. May be repeated once. (S/U only.)

BSC 4933 SELECTED TOPICS IN BIOLOGY (1-4)
PR: CI.

PCB 2670 EVOLUTION (4)
The application of basic principles of evolution with an emphasis upon man through the consideration of scientific and popular literature. For non-majors.

PCB 3063 GENERAL GENETICS (4)

PCB 3183C HISTOLOGICAL TECHNIQUES (5)

PCB 4023C CELL BIOLOGY I (5)
PR: CHM 3211, CHM 3211L and PCB 3063. A discussion of the concept and significance of the cell to biology; biological molecules and metabolic processes within the cell; cellular energy conversion systems; and control of cellular metabolism. Qtr. I, II.

PCB 4024C CELL BIOLOGY II (5)
PR: PCB 4023C. A continuation of Cell Biology I. The structure and function of cells and their organelles; irritability and contraction; cell differentiation, growth and integration of cellular activity. Qtr. II, III.

PCB 4043C PRINCIPLES OF ECOLOGY (4)

PCB 4064 EXPERIMENTAL GENETICS (4)
PR: PCB 3063 or CI. Experimental analysis of genetic systems. Lec.-lab. 2 hour lec.; 2-3 hour labs.

PCB 4674 ORGANIC EVOLUTION (4)
PR: PCB 3063 or CI. An introduction to modern evolutionary theory. Lecture on population genetics, adaptations, speciation theory, phylogeny, human evolution and related areas.

**GRADUATE COURSES**

BSC 5931 SELECTED TOPICS IN BIOLOGY (1-4)
PR: CI. Each topic is a course in directed study under supervision of a faculty member.

BSC 6907 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

BSC 6910 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

BSC 6912 GRADUATE RESEARCH METHODS (1-5)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

BSC 6932 SELECTED TOPICS IN BIOLOGY (1-6)
PR: CI.

BSC 6935 GRADUATE SEMINAR IN BIOLOGY (1)
PR: CI. (S/U only.)

BSC 6945 GRADUATE INSTRUCTION METHODS (1-5)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

BSC 7912 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

BSC 7980 DISSERTATION: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

PCB 5115C CYTOLOGY (4)

PCB 5235C PRINCIPLES OF IMMUNOLOGY (4)
PR: PCB 4023C or CI. Course will emphasize the biological principles involved in the vertebrate immune response. It will present the homeostatic, defense, and detrimental aspects of the immune system in terms of basic cellular and molecular mechanisms. Techniques will be described to familiarize the student with the types of immunological tools available to the cellular and molecular biologist.

PCB 5525C MOLECULAR GENETICS (4)
PR: PCB 3063. 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.

PCB 5615 EVOLUTIONARY GENETICS (4)
PR: PCB 3063 or CI. Examination of factors such as mutation, migration, natural selection, and genetic drift which modify the genetic structure of populations.

PCB 5835C NEUROPHYSIOLOGY (4)
PR: PCB 4743C. A comparative analysis of the physiochemical basis and evolution of nervous systems and sensory mechanisms. Lec.-lab.

PCB 6176C ULTRASTRUCTURE TECHNIQUES IN ELECTRON MICROSCOPY (6)

PCB 6356 TROPICAL ECOLOGY (4)
PR: PCB 4043C. Graduate Standing or CI. A discussion of a series of related ecological topics to illustrate the features peculiar to the tropics.

PCB 6426C POPULATION BIOLOGY (4)
PR: PCB 5615 and PCB 6456C or CI. Introduction to the theory of population dynamics with emphasis on the genetic and ecological components of population growth, natural selection, and competition between species. Lec.

PCB 6456C BIOMETRY (4)
PR: MAC 2242, MAC 2243, MAC 2244 or CI. An introduction to statistical procedures for research in the biological sciences. Experimental design, analysis of data, and presentation of results are emphasized.

PCB 6566C CHROMOSOME STRUCTURE AND CHEMISTRY (4)
PR: PCB 5115C. Introduction to the molecular organization of the Eukaryotic chromosome.

**Biology-Botany**

**UNDERGRADUATE COURSES**

APB 3103 PLANTS AND MAN (4)
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. For non-majors.
BOT 3010  INTRODUCTION TO BOTANY  (5)  
PR: BSC 2010C, BSC 2011C, BSC 2012 or equivalent. Knowledge of basic biological principles will be assumed. A presentation of the fundamentals of plant life; structure and function of flowering plants; history of agriculture, plants and men; plant distribution and ecology; survey of major plant groups, algae, fungi, bryophytes, ferns, gymnosperms and flowering plants.

BOT 3143C  FIELD BOTANY  (3)  

BOT 3713C  SYSTEMATIC BOTANY  (5)  
PR: BOT 3010. Identification and classification of the more interesting vascular plants of Florida; angiosperm evolution; principles of taxonomy. Conducted largely in the field.

BOT 3823C  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 4223C  PLANT ANATOMY  (5)  
PR: BOT 3010. Comparative studies of tissue and organ systems of fossil and present-day vascular plants. Functional and phylogenetic aspects stressed. Lec.-lab.

BOT 4333  MORPHOLOGY OF VASCULAR PLANTS  (5)  
PR: BOT 3010. An intensive survey of the morphology, evolution and taxonomy of the various groups of vascular plants, both living and extinct. The course will focus primarily on lower groups such as the fern and gymnosperms but will conclude with an analysis of the origins and general features of the Angiosperms.

BOT 4434C  MYCOLOGY  (5)  
PR: BOT 3010 or CI. A survey of the fungi with emphasis on their taxonomy, morphology, physiology and economic importance. Lec.-lab.

BOT 4503  PLANT PHYSIOLOGY  (5)  
PR: PCB 4023C; CR: PCB 4024C. Fundamental activities of plants; absorption, translocation, transpiration, metabolism, growth, and related phenomena. Lec.-lab.

BOT 4933  SEMINAR IN BOTANY  (1)  
PR: Senior or advanced junior standing and CI. May be repeated once. (S/U only.)

GRADUATE COURSES

BOT 5185C*  MARINE BOTANY  (5)  
PR: BOT 3010, PCB 4043C, 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 5405C*  PHYCOLOGY  (5)  
PR: BOT 3010 or CI. 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 5495  PHYSIOLOGY OF THE FUNGI  (3)  
PR: BOT 4434C or CI. The biochemical, physiological, and hormonal basis involved in morphogenesis and cellular control in fungi. Lec.

BOT 5565C  PHYSIOLOGY OF PLANT GROWTH AND DEVELOPMENT  (3)  

BOT 5605*  PLANT ECOLOGY  (4)  
PR: BOT 3010, PCB 4043C 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 5725C  TAXONOMY OF TROPICAL PLANTS  (4)  
PR: BOT 3133 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 5938  SELECTED TOPICS IN BOTANY  (1-4)  
PR: CI. Each topic is a course in direct study under supervision of a faculty member.

BOT 6516  PLANT METABOLISM LECTURE  (3)  
PR: BOT 4503, CHM 3210 or CI. A study of plant metabolism with emphasis on the biosynthetic pathways and their regulation.

BOT 6516L  PLANT METABOLISM LABORATORY  (4)  
PR: BOT 4503, CHM 3210 or CI. An intensive exposure to the methods used in experimenting with plant material.

BOT 6666  BIOLOGY OF TROPICAL PLANTS  (3)  
PR: BOT 4663. Special topics in the systematics, morphology, physiology, genetics, and ecology of tropical plants with consideration of habitat diversity that leads to rich florae. Lec.

BOT 6666L*  LABORATORY IN TROPICAL PLANTS  (2)  
PR: Must be taken concurrently with BOT 6666. 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 6716C  BIOSYSTEMATICS  (4)  
PR: BOT 3713C or equivalent. Application of cytology, ecology, genetics, biochemistry, and morphological analyses to the study of evolution and classification of species of higher plants. Lec.

BOT 6916  INDEPENDENT STUDY  (var.)  
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

BOT 6971  THESIS: MASTER'S  (var.)  
Repeatable. (S/U only.)

Biology-Microbiology

UNDERGRADUATE COURSES

APB 4053C  APPLIED BACTERIOLOGY  (5)  
PR: MCB 3010C. A study of the applications of microbiology to industry, agriculture, medicine, and sanitary engineering. Lec.-lab.

MCB 3010C  INTRODUCTION TO MICROBIOLOGY  (5)  
PR: BSC 2010C, BSC 2011C, BSC 2012; CHM 2045, CHM 2046, CHM 2047; one quarter of organic chemistry and a course in genetics is recommended. Introduction to the biology of microorganisms: structure, physiology, and ecology of bacteria, algae, viruses, protozoa and lower fungi. The laboratory involves preparation of culture media, staining, pure culture methodology, isolation of microbes from nature, enumeration techniques, resistance to infectious disease.

MCB 4030L  LABORATORY IN EXPERIMENTAL MICROBIOLOGY  (3)  
PR: MCB 3010C, CI; CR: MCB 4404. Course will consist of individually performed exercises to teach major techniques in quantitative, experimental microbiology with emphasis on biochemical and physiological examination of bacteria and viruses, their chemical composition, enzymatic, molecular and physical properties.

MCB 4115  DETERMINATIVE BACTERIOLOGY  (4)  

*Students will be required to pay travel expenses for field trips.
tion; detailed examinations of bacteria important to man in agriculture, in industry and as pathogens. Qtr. II.

**MCB 4163L LABORATORY METHODS IN DIAGNOSTIC MICROBIOLOGY**

PR: MCB 4115 or Cl. Laboratory procedures necessary to identify pathogenic and commonly encountered bacteria, fungi, and other parasites will be individually performed. These procedures will include determinations of morphology, physiological reactions, and immunological responses as appropriate.

**MCB 4404 MICROBIAL PHYSIOLOGY**

PR: MCB 3010C, PCB 4023C or Cl. A study of physiological and metabolic phenomena pertinent to the growth, development, regulation, inhibition and death of microorganisms and to the chemical alterations they catalyze.

**MCB 4585C VIROLOGY**

PR: MCB 3020L and Cl. 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.

**MCB 4934 SEMINAR IN MICROBIOLOGY**

PR: Senior or advanced junior standing and Cl. May be repeated. (S/U only.)

**GRADUATE COURSES**

**APB 5575C MEDICAL MYCOLOGY**

PR: MCB 3010C or Cl. 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.

**MCB 5115C ADVANCED BACTERIOLOGY**

PR: MCB 3010C. Ultrastructure, growth, metabolism, genetics and ecology of the bacteria and related procaryotes.

**MCB 5206 PATHOGENIC MICROBIOLOGY**

PR: MCB 3010C. A comprehensive survey of pathogenic microbes responsible for disease in man and other animals. These pathogens will be studied with respect to their morphology, cultivation, mechanisms of pathogenicity, infection, laboratory diagnosis, and epidemiology.

**MCB 5605 MICROBIAL ECOLOGY**

PR: MCB 3010C, Cl. A study of the theory and methodology of the quantification of microbial processes in natural habitats with special emphasis on aquatic and terrestrial systems.

**MCB 5606 LABORATORY METHODS IN MICROBIAL ECOLOGY**

CR: MCB 5605 or Cl. A study of the application of laboratory methods of microbiology to assess microbiological activities in natural systems in both qualitative and quantitative terms.

**MCB 5936 SELECTED TOPICS IN MICROBIOLOGY**

PR: Cl. Each topic is a course in directed study under supervision of a faculty member.

**MCB 6459 ADVANCED TOPICS IN CHEMICAL MICROBIOLOGY**

PR: MCB 4404, Biochemistry or Cl. An in-depth study of metabolic and physiological phenomena associated with microorganisms, especially bacteria, including: growth, regulation, unique metabolic traits, morphogenesis, cell division, cell death and survival mechanisms.

**MCB 6919 INDEPENDENT STUDY**

Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

**MCB 6971 THESIS: MASTER'S**

Repeatable. (S/U only.)

**PCB 6236 ADVANCED IMMUNOLOGY**

PR: PCB 4023 or Cl. Discussion of the basic immune reaction, nature of antigenicity; basic immunological techniques and their use in biological research and the medical sciences.

**PCB 6606 BACTERIAL GENETICS**

PR: MCB 4404, PCB 3063 or Cl. 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.

### Biology-Zoology

**UNDERGRADUATE COURSES**

**ENY 4004 INTRODUCTION TO ENTOMOLOGY**

PR: BSC 2010C, BSC 2011C. An introduction to general aspects of insect morphology, development, and classification. The identification of local forms will be emphasized. Lec.-lab., Qtr. III, IV.

**PCB 3700 HUMAN PHYSIOLOGY**

Lectures and discussions on the mechanisms of function of the human body. For non-majors credit only.

**PCB 4184C HISTOLOGY**

PR: PCB 4253C and/or ZOO 3713C. Comparative approach to the study of tissues and the relation of their structure and function. Lec.-lab.

**PCB 4253C DEVELOPMENTAL BIOLOGY**

PR: PCB 4023C, PCB 4024C. Structural and functional events involved in differentiation and morphogenesis. Lec.-lab., Qtr. I, III.

**PCB 4743C ANIMAL PHYSIOLOGY**

PR: PCB 4023C; CR: PCB 4024C. Advanced presentation of mechanisms employed by animals to interact with their environment and to maintain their organization.

**ZOO 3203C INTRODUCTORY INVERTEBRATE ZOOLOGY**

PR: BSC 2010C, BSC 2011C, BSC 2012. An introduction to the major invertebrate groups, with emphasis on local forms. Field work will be required. Lec.-lab.

**ZOO 3713C COMPARATIVE VERTEBRATE ANATOMY**

PR: BSC 2010C, BSC 2011C. Anatomy of selected vertebrate types emphasizing evolutionary trends. Lec.-lab.

**ZOO 4383C VERTEBRATE ZOOLOGY**


**ZOO 4503C ANIMAL SOCIAL BEHAVIOR**

PR: Cl. An introduction to comparative animal behavior (Ethology), with emphasis on communication, social use of space, and behavioral evolution.

**ZOO 4583C PRIMATE SOCIAL BEHAVIOR**


**ZOO 4893 WILDLIFE AND FISH MANAGEMENT**

PR: BSC 2010C, BSC 2011C, BSC 2012, PCB 4043C. 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.

**ZOO 4932 SEMINAR IN ZOOLOGY**

PR: Upper level. May be repeated once. (S/U only.)

### GRADUATE COURSES

**ENY 5501 AQUATIC ENTOMOLOGY**

PR: ENY 4004. Taxonomy, development, and ecology of aquatic insects with emphasis on local forms. Lec.-lab., Qtr. II (odd numbered years).
PCB 5306C LIMNOLOGY (5)
PR: CI. An introduction to the physical, chemical, and biological nature of fresh-water environments. Lec.-lab. Qtr. III.

PCB 5325C TERRESTRIAL ANIMAL ECOLOGY (4)
PR: PCB 4043C. Field and laboratory investigations of the basic principles of ecology as applied to terrestrial animals. Lec.-lab.

PCB 5725C COMPARATIVE PHYSIOLOGY (5)
PR: PCB 4023C, PCB 4024C. The evolution of physiological mechanisms. Lec.-lab. Qtr. I.

PCB 6376C PHYSIOLOGICAL ECOLOGY (5)
PR: CI. Effect of environmental factors on animal function at the cellular and organ system level with emphasis on control and mechanism. Lec.-lab.

PCB 6756 COMPARATIVE METABOLISM (3)
PR: PCB 4023C, PCB 4024C, CHM 3210, CHM 3210L, CHM 3211, CHM 3211L, BCH 3033, or their equivalents. Some knowledge of Animal Phylogeny will be assumed. A presentation of various metabolic pathways found in invertebrate animals including specializations related to parasitism and facultative anaerobiosis.

PCB 6776C PHYSIOLOGY OF MARINE ANIMALS (5)
PR: PCB 4023C, PCB 4024C. A study of the physiological mechanisms of animals in the marine environment. Lec.-lab.

PCB 6816C COMPARATIVE ENDOCRINOLOGY (5)
PR: PCB 5725C or CI. An analysis of the similarities and differences between the hormonal mechanisms of mammals, other vertebrates, and invertebrates. Lec.-lab.

ZOO 5235C PARASITOLOGY (5)
PR: BSC 2010C, BSC 2011C, BSC 2012. Fundamentals of animal parasitology and parasitism; the biology of selected animal parasites, including those of major importance to man. Lec.-lab. Qtr. II.

ZOO 5285C BIOLOGY OF ECHINODERMS (5)
PR: PCB 4024C, ZOO 3203C. A study of the anatomy, physiology and ecology of echinoderms. Lec.-lab., Qtr. I (even numbered years).

ZOO 5415C BIOLOGY OF THE AMPHIBIA (5)
PR: ZOO 3713C or ZOO 4303C and CI. Major aspects of amphibian biology emphasizing fossil history, evolutionary morphology, sensory physiology, life history and reproductive behavior. Lec.-lab. Field trips Qtr. III (even numbered years).

ZOO 5425C BIOLOGY OF THE REPTILIA (5)
PR: ZOO 3713C or ZOO 4303C and CI. Major aspects of reptilian biology emphasizing fossil history, evolutionary morphology, sensory physiology, life history, and reproductive behavior. Lec.-lab. Field trip Qtr. III (odd numbered years).

ZOO 5455C ICTHYOLOGY (5)
PR: ZOO 3713C or ZOO 4303C or CI. Systematics of fishes, including major classification, comparative anatomy, embryology, and geographical distribution. Lec.-lab. (Also offered under Marine Science.)

ZOO 5475C ORNITHOLOGY (5)
PR: ZOO 3713C or ZOO 4303C or CI. The biology of birds. Field trips emphasize local avifauna. Lec.-lab. Qtr. III.

ZOO 5485C MAMMALOLOGY (5)
PR: ZOO 3713C or ZOO 4303C and CI. The biology of mammals, including systematics, ecology, natural history, and geographical distribution. Lec.-lab.

ZOO 5555C MARINE ANIMAL ECOLOGY (5)
PR: PCB 4043C and ZOO 3203C. Investigation of energy flow, biogeochemical cycles, and community structure in marine environments. Lec.-lab.

ZOO 581SC ZOOGEOGRAPHY (3)

ZOO 5926 SELECTED TOPICS IN ZOOLOGY (1-4)
PR: CI. Each topic is a program in directed study under supervision of a faculty member.

ZOO 6506C ADVANCED ANIMAL BEHAVIOR (4)
PR: ZOO 4503C and CI. Recent advances in comparative animal behavior (ethology). Lec.-lab.

ZOO 6616C EXPERIMENTAL EMBRYOLOGY (4)
PR: PCB 4023C, PCB 4024C, PCB 4253C and CI. Lectures, laboratories, readings and discussions relating to contemporary advances in the area of biochemistry of development. Experimental techniques will be studied.

ZOO 6626C INVERTEBRATE REPRODUCTION AND DEVELOPMENT (5)
PR: ZOO 3203C 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 6907 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

ZOO 6971 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)

BUSINESS ADMINISTRATION

Accounting

UNDERGRADUATE COURSES
ACC 2001 ELEMENTARY ACCOUNTING I (3)
Study of basic accounting principles including the recording and reporting of financial activity. The preparation and interpretation of financial statements.

ACC 2021 ELEMENTARY ACCOUNTING II (3)

ACC 3101 INTERMEDIATE ACCOUNTING I (4)
PR: ACC 3001 or CR in ACC 3301. Measurement theory and methodology underlying income measurement and reporting of financial position. The study of cash, time value analysis, receivables, and inventories.

ACC 3121 INTERMEDIATE ACCOUNTING II (4)
PR: ACC 3101. Continuation of theory and principles underlying financial statements, current and long term liabilities, plant and equipment, investments, intangible, leases and pensions, and owners' equity.

ACC 3141 INTERMEDIATE ACCOUNTING III (4)
PR: ACC 3121. Required for Accounting majors. Continuation of theory and principles underlying financial statements, earnings per share, income tax allocation, price-level changes, accounting changes, statements from incomplete records, statements of change in financial position, and contemporary accounting issues.

ACC 3301 ACCOUNTING FOR MANAGEMENT CONTROL (3)
PR: ACC 2021. Study of accounting from user's point of view. Includes measurement theory, use of financial statements, and
accounting measurement in planning and control.

ACC 4201 ADVANCED ACCOUNTING (3)
PR: ACC 3121; MAC 2242 or College Algebra. Partnerships, governmental accounting, and price-level changes.

ACC 4221 CONSOLIDATED FINANCIAL STATEMENTS (4)
PR: ACC 3121. Accounting for business combinations, preparation of consolidated financial statements, home office and branch operations, reporting by multinational companies and segments of a business enterprise.

ACC 4401 COST ACCOUNTING AND CONTROL I (4)
PR: GEB 3121, FIN 3403. Deals with relevant costs for decision making; standards and job order costing, flexible budgeting, direct and absorption costing, regression analysis, and decision models.

ACC 4421 COST ACCOUNTING AND CONTROL II (4)
PR: ACC 4401. A continuation of ACC 4401. The study of cost allocation, capital budgeting, inventory planning and control, joint products, process costing, performance measurement, and transfer pricing.

ACC 4501 FEDERAL TAXES (4)
PR: ACC 2201. An introduction to the federal income tax structure. Use of tax services and the concept of taxable income primarily applicable to individuals.

ACC 4521 FEDERAL TAXES (4)
PR: ACC 4501. Continued study of the federal income tax structure. Special topics and the concept of taxable income as it applies primarily to business enterprises.

ACC 4601 AUDITING (4)
PR: ACC 3121 and GEB 3121. Principles and procedures of internal and public auditing. The ethics, responsibilities, standards, and reports of professional auditing.

ACC 4730 ACCOUNTING INFORMATION SYSTEMS (4)
PR: ACC 3121, COC 3201. General systems theory, total systems concept, internal control problems, and computer based accounting systems.

ACC 4801 SELECTED TOPICS IN ACCOUNTING (1-5)
PR: CI. The course content will depend on student demand and instructor's interest.

ACC 4905 INDEPENDENT STUDY (1-4)
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated up to 8 credit hours. (S/U only.)

ACC 4914 INDEPENDENT RESEARCH (1-5)
PR: CI. Individual study contract with instructor and department chairperson required. The research project will be mutually determined by the student and instructor. May be repeated up to 10 hours.

GRADUATE COURSES

ACC 5031 ACCOUNTING CONCEPTS AND METHODOLOGY I (3)
A study of basic accounting principles including the recording of transactions and the preparation and interpretation of financial statements. May not be taken for credit by business administration graduate students.

ACC 5041 ACCOUNTING CONCEPTS AND METHODOLOGY II (3)
PR: ACC 5031. A continuation of ACC 5031. 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. May not be taken by business administration graduate students.

ACC 5805 CONTEMPORARY ACCOUNTING THOUGHT (4)
PR: Intermediate Accounting III or equivalent. An indepth coverage of selected topics in accounting. Emphasis is placed on current significant developments that have taken place in the profession which the student should have for a well-rounded background in accounting but have not been exposed to in previous courses. Available to majors and non-majors.

ACC 5935 SELECTED TOPICS IN ACCOUNTING (1-5)
PR: CI. To allow advanced undergraduate students and graduate students to research and study contemporary and emerging topics in the field. May be repeated up to 10 credit hours.

ACC 6412 MANAGEMENT ACCOUNTING AND CONTROL (4)
PR: Financial Accounting for Managers. 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; (3) inventory valuation and income determination. Not available for credit for graduate students in the Master of Accountancy program.

ACC 6451 MANAGEMENT COST ANALYSIS AND CONTROL (3)
PR: 24 quarter hours of 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 6511 FEDERAL TAX RESEARCH AND PLANNING (3)
PR: ACC 4501 or CI. A study of the development of tax law and its implication in business decisions. Tax planning and tax research are emphasized.

ACC 6691 ETHICS AND RESPONSIBILITIES IN PROFESSIONAL ACCOUNTANCY (3)
PR: ACC 4601 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 6745 SYSTEMS THEORY AND QUANTITATIVE APPLICATIONS (3)
PR: ACC 4730 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 6805 CONTEMPORARY ACCOUNTING THOUGHT (3)
PR: ACC 6811 or CI. Concentrated study of current problems areas in the field of accountancy.

ACC 6811 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 6905 INDEPENDENT STUDY (var.)
Independent Study in which student must have a contract with an instructor. Repeatable. (S/U only.)

ACC 6910 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

ACC 6930 SELECTED TOPICS IN ACCOUNTING (1-6)
PR: CC. The course content will depend on student demand and instructor's interest. May be repeated up to 6 hours.
Economics


UNDERGRADUATE COURSES

ECO 1000 CONTEMPORARY ECONOMIC PROBLEMS
An introduction to economics in the context of contemporary social issues. The problem of economic scarcity, the role of ethical value in economics, economic processes and the economic analysis of social issues.

ECO 2013 ECONOMIC PRINCIPLES II; MACROECONOMICS
An introduction to the modern theory of income determination with emphasis upon the application of monetary and fiscal policy oriented toward the accomplishment of the macro-economic objectives of full employment, economic growth, and balance of payments stability.

ECO 2023 ECONOMIC PRINCIPLES II; MICROECONOMICS
The fundamental economic concept of scarcity, alternative courses of action and the problem of choice. How an economy decides what to produce, how to produce and how to reward participants in the economy. Attention is focused on factors affecting consumer wants and on the behavior of price in different types of markets.

ECO 3101 INTERMEDIATE PRICE THEORY
PR: ECO 2013, ECO 2023. Advanced analysis of supply and demand as related to competition and monopoly; application of economic theory to product pricing and resource pricing.

ECO 3203 INTERMEDIATE INCOME AND MONETARY ANALYSIS
PR: ECO 2021, ECO 2023. An advanced exposition of the neo-Keynesian analysis explaining the determination of income, employment, prices, and the interest rate. Emphasis is placed upon the interaction of aggregate demand, as determined by consumption, investment, money, and the government budget, and aggregate supply.

ECO 3431 BUSINESS FLUCTUATION AND ECONOMIC FORECASTING

ECO 3622 AMERICAN ECONOMIC HISTORY
The growth and evolution of American economic institutions from Colonial times to the present.

ECO 3703 INTERNATIONAL ECONOMICS

ECO 4211 MONETARY THEORY
PR: ECO 3101, ECO 3203. An examination of the impact of the financial sector upon real economic magnitudes. The course approaches its subject matter through the theory of portfolio and capital adjustments with emphasis upon the contributions of Pigou, Fisher, Keynes, Patinkin, Friedman and Tobin.

ECO 4264 THEORY OF ECONOMIC DYNAMICS
PR: ECO 3203. An examination of macroeconomic processes as they occur through time. The determination and characteristics of long run growth paths based upon both Keynesian and Neoclassical models are discussed and business cycles are then treated as short run deviations from these growth paths. Empirical studies, forecasting, and policy issues are also considered.

ECO 4303 HISTORY OF ECONOMIC THOUGHT
PR: ECO 2013, ECO 2023, ECO 3101, or Cl. The development of the economic schools (Scholasticism, Mercantilism, Physiocratic, Classicism, Utopia Socialism, Anarchism, Marxism, Historicism, Marginalism, Neo-Classicism, Institutionalism, and Keynesianism) in connection with their philosophical and political convictions in relation to their times.

ECO 4323 MARXIST POLITICAL ECONOMY
PR: ECO 2013 and ECO 2023 or Cl. An examination of the Marxist tradition and other "left" perspectives in economics. Application of Marxist economic theory to problems of advanced capitalist and socialist societies.

ECO 4401 INTRODUCTION TO MATHEMATICAL ECONOMICS
PR: ECO 2013, ECO 2023 and GEB 3121, MAC 2243 or Cl. Economic processes expressed as equations and economic systems as mathematical models. Investigation of their static and dynamics properties by mathematical analysis and computer simulation.

ECO 4402 SELECTED TOPICS IN QUANTITATIVE ECONOMICS
PR: GEB 3121, MAC 2243 or Cl. Analysis of relevant problems of social policy by application of economic criteria and econometric method. Survey of contemporary research.

ECO 4504 PUBLIC FINANCE
PR: ECO 3101. An examination of the public sector and its contribution to economic welfare. Government expenditures and revenues are examined in relation to their impact on resource allocation, income distribution, stabilization, and economic growth.

ECO 4723 INTERNATIONAL COMMERCIAL POLICIES
PR: ECO 3703. An advanced analysis of balance of payments equilibrating mechanisms and of international commercial policy.

ECO 4905 INDEPENDENT STUDY
PR: Cl. Specialized independent study determined by the student's needs and interests. May be repeated up to 8 credit hours. (S/U only.)

ECO 4914 INDEPENDENT RESEARCH
PR: Cl. Individual study contract with instructor and department chairperson required. The research project will be mutually determined by the student and instructor. May be repeated up to 10 hours.

ECO 4935 SELECTED TOPICS IN ECONOMICS
PR: Senior standing and Cl. Topics to be selected by the instructor or instructors on pertinent economic issues.

ECP 3203 LABOR ECONOMICS
PR: Cl. 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.

ECP 3423 ECONOMICS OF PUBLIC UTILITIES

ECP 3433 ECONOMICS OF TRANSPORTATION
PR: Cl. Functions of transportation agencies, rate structure of transportation companies, problems of state and federal regulations and coordination of transportation facilities.

ECP 3613 ECONOMICS OF THE URBAN ENVIRONMENT
PR: Cl. Economic analysis of the phenomena of cities as well as urban social problems including poverty, discrimination, housing, transportation, pollution, crime and fiscal considerations.
ECP 3703 MANAGERIAL ECONOMICS (5)

ECP 4003 BUSINESS-GOVERNMENT RELATIONSHIPS (4)
Analysis of the three public policy approaches; competitive, regulatory, and ownership; evaluation of each in terms of ability to bring about economically desirable price-cost relationships, reductions in cost, invention and innovation and an optimal allocation of resources.

ECP 4232 COLLECTIVE BARGAINING AND PUBLIC POLICY (5)
PR: Labor Economics or CI. The administration of labor management agreements, etc. The impact of the government role in collective bargaining and labor relations will be examined in light of current labor laws and judicial interpretations.

ECS 4003 COMPARATIVE ECONOMIC SYSTEMS (4)
Analysis of the major types of economies in industrially developed countries: competitive capitalism (e.g.: West Germany), regu­lated capitalism (e.g.: France), "command" communism (e.g.: the Soviet Union) and "worker-controlled" communism (e.g.: Yugoslavia). Each is subject to economic evaluation with particular reference to their ability to meet changing consumer demands and technological innovations.

ECS 4013 THEORY OF ECONOMIC DEVELOPMENT (4)
PR: ECO 3203 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.

GEB 2111 BUSINESS AND ECONOMIC STATISTICS I (3)
PR: MAC 2242. College Algebra or equivalent. Description of sample data; calculation of probabilities; frequency functions of random variables; the binomial and normal distributions; sampling theory and estimation; tests of hypotheses; elements of Bayesian decision theory.

GEB 3121 BUSINESS AND ECONOMIC STATISTICS II (5)
PR: MAC 2242. College Algebra or equivalent and GEB 2111. The theory and use of statistical inference for decision and prediction. Point and interval estimation; criteria for choosing estimators and decision rules; hypotheses tests and prob values; analysis of variance; correlation and regression.

GRADUATE COURSES

ECO 5111 MICROECONOMICS (3)
An accelerated introduction to the price system as a mechanism for allocating scarce resources. Models are developed to explain the workings of both product and resource markets. This course is intended for students with no previous courses in economics and no credit towards degrees will be received in the graduate programs of the College of Business Administration.

ECO 5204 MACROECONOMICS (3)
PR: ECO 5111. An accelerated introduction to the understanding of the post-Keynesian system through the development of a theoretical supply and demand model and the application of this model to the fiscal and monetary possibilities inherent within it. This course is intended for students with no previous study in economics and no credit towards degrees will be received in the graduate programs of the College of Business Administration.

ECO 5404 ECONOMIC PROGRAMMING AND CONTROL (5)

ECO 5424 ECONOMETRICS (5)
PR: ECO 3101, ECO 3203, GEB 3121, or CI. Theory and use of multiple regression to explain, forecast, and influence economic behavior. Applications to demand, cost, and production functions. Model specification. Ordinary least squares and instrument variables methods. Analysis of errors. BMD and TSP computer programs. Design and conduct of individual empirical research projects.

ECO 6115 MICROECONOMICS (3)
PR: ECO 6116. An intensive study of microeconomics examining the behavior of consumers and producers. Topics covered include the general concept of scarcity and conceptual models in the areas of demand, production, cost, and the firm and market organization. Advanced reading in theoretical and applied microeconomics will be emphasized.

ECO 6206 AGGREGATE ECONOMICS (3)
PR: ECO 6207. An analysis of the macroeconomic interrelations­ships determining the level of income, employment, prices, and interest rates over time and the impact of government policy upon these variables.

ECO 6216 MONETARY THEORY (5)
PR: ECO 6116, ECO 6207. Advanced discussion of the impact of the financial sector upon real economic magnitudes. The course emphasizes theoretical and empirical contributions found in the current literature as an extension of earlier work done in the field on monetary theory.

ECO 6305 HISTORY OF ECONOMIC THOUGHT (5)
PR: ECO 6116. An intense analysis of the main currents of modern economic thought during the last one hundred years.

ECO 6414 MANAGERIAL STATISTICS (3)

ECO 6435 APPLIED FORECASTING (3)

ECO 6436 ADVANCED BUSINESS FLUCTUATION AND ECONOMIC FORECASTING (3)
PR: ECO 6207, STA 6136. May be waived by instructor. Applications of statistical techniques to forecasting aggregate business activity, GNP and GNP components. Critical analysis of forecasting techniques and applications of forecasting methods to business decisions.

ECO 6506 PUBLIC FINANCE I (4)
PR: ECO 2013, ECO 2023. 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 and income distribution.

ECO 6507 PUBLIC FINANCE II (4)
PR: ECO 6506. Topics in public economics including cost functions for public goods, redistributive techniques, fiscal federalism, major issues in government expenditures, environmental policies, stabilization, growth and debt policy.

ECO 6906 INDEPENDENT STUDY (Var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

ECO 6916 RESEARCH METHODOLOGY (3)
FIN 2105 INTRODUCTION TO INVESTMENTS
(4)
Emphasizes the operations of the security markets in the U.S. and the risks and returns of alternative investment media. Designed for non-business administration students. Not available for credit to upper level students who have been admitted to the College of Business Administration.

FIN 3233 MONEY AND BANKING
(4)
PR: ECO 2013. 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 3403 PRINCIPLES OF FINANCE
(5)
PR: ACC 3301 and ECO 2023. The study of the processes, the decision structures, and the institutional arrangements concerned with the utilization and acquisition of funds by a firm. The course will include the management of the asset structure and the liability structure of the firm under both certain and risky situations and considering the problems of time and the decision makers' preferences. The financial decision process will include and recognize the international as well as domestic aspects of financial management.

FIN 3604 INTERNATIONAL FINANCE
(5)
PR: ECO 2013 or CL. Factors affecting international business; assessment of risk; international managerial finance; institutions and instruments of international business finance.

FIN 4303 FINANCIAL INSTITUTIONS
(4)
PR: FIN 3233. A study of financial institutions and their roles in the capital market in the savings allocation, investment, and financial decision making process.

FIN 4414 ADVANCED CORPORATION FINANCE
(4)
PR: FIN 3403. An examination of the financial policies of corporations, with special reference to dividend policy, financial structure, capital expenditures, acquisitions, mergers, and reorganization.

FIN 4443 FINANCIAL POLICIES AND STRATEGIES
(3)
PR: FIN 4414. Senior seminar for majors in finance. Quantitative and qualitative analysis of financial policies based on independent readings and empirical research.

FIN 4504 PRINCIPLES OF INVESTMENTS
(4)
PR: ECO 2013 and FIN 3403. Survey of the risks and returns of investment media in relation to the investment objectives 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 4524 PORTFOLIO MANAGEMENT
(3)
PR: FIN 4504. Study of portfolio policies and strategies of individual and institutional investors. This course utilizes both quantitative and case study approaches to problem solving.

FIN 4834 FEDERAL RESERVE SYSTEM AND MONETARY POLICY
(4)
PR: ECO 3203 or FIN 3233. An analysis of the Federal Reserve System, with special emphasis on the formulation and administration of monetary policy and on monetary theory.

FIN 4905 INDEPENDENT STUDY
(1-4)
PR: CL. Specialized independent study determined by the student's needs and interests. May be repeated up to eight credit hours. (S/U only.)

FIN 4915 INDEPENDENT RESEARCH
(1-5)
PR: CL. Individual study contract with instructor and department chairperson. The research project will be mutually determined by the student and instructor. May be repeated up to 10 hours.

FIN 4934 SELECTED TOPICS IN FINANCE
(1-5)
PR: CL. Topics to be selected by instructor and department chairperson on pertinent Finance issues.

REE 3040 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.

REE 4204 REAL ESTATE FINANCE (4)
PR: RMI 4110. A comprehensive analysis of the institutional and legal framework of real estate financing together with an introduction to the financing techniques which are traditionally utilized to finance real estate. Includes methods of raising debt and equity funds. Analysis of real property for financing purposes is stressed in a decision-making context and how that decision affects the real estate investment. The course is not restricted to Finance majors.

REE 4310 REAL ESTATE INVESTMENT ANALYSIS (4)
PR: FIN 3403, RMI 3040. A comprehensive study of the determinants of the market and financial feasibility of the real estate investment decision. The development of market and site analyses, theories of urban development patterns, and the role of taxation will be studied along with the application of analytical techniques for decision making. The course is not restricted to Finance majors.

RMI 3010 PRINCIPLES OF INSURANCE (5)
Analysis of insurable risks of both business and individuals. An examination of the characteristics 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.

RMI 4110 LIFE, HEALTH, & DISABILITY INSURANCE (5)
PR: GEB 3121, RMI 3010. The course will analyze the use of life, health, and disability insurance contracts as a method of dealing with the risks of death, sickness, and disability. It will also include an analysis of cost determination of the various types of coverage.

RMI 4113 CASUALTY INSURANCE (4)
PR: RMI 3010. A discussion/lecture course dealing with recognition of personal and business casualty risks, coverages which may be used in dealing with these risks, and understanding the underwriting, marketing, and social problems associated with these coverages. Topics include workmen's compensation, public liability, auto liability, suretyship and crime insurances. Not limited to finance majors.

RMI 4210 PROPERTY INSURANCE (4)
PR: RMI 3010. A discussion/lecture course dealing with recognition of personal and business property risks, coverages which may be used in dealing with these risks, and understanding the underwriting, marketing, and social problems associated with these coverages. Topics include commercial and residential fire insurance, inland marine and transportation coverages, and multi-peril contracts. Not limited to Finance majors.

FIN 6246 ADVANCED MONEY AND CAPITAL MARKETS (3)
PR: Macroeconomic Analysis or equivalent. The study of the role of financial markets in the economy. The course will investigate and analyze the effects and relationship between financial theory, financial institutions, and financial markets and their interactions and impacts on the economy. It includes the study of flow of funds, interest rate determination, and the pricing of capital assets.

FIN 6446 FINANCIAL POLICY (3)
PR: Financial Management. A case study approach to financial policy and strategy with an emphasis on major financial decisions in the area of external financing, mergers, acquisitions, recapitalization, and reorganization.

FIN 6605 INTERNATIONAL FINANCIAL MANAGEMENT (4)
PR: Financial Management or equivalent. The course provides a foundation for the understanding and appreciation of financial management of international business. The subject areas covered relate to: international finance, multinational business finance, and financial market theory.

FIN 6718 GOVERNMENTAL FINANCIAL PLANNING AND BUDGETING (5)
PR: Basic understanding of accounting and CI. A thorough investigation of planning, budgeting, and control for government, including: Budgeting procedures and methods for services and capital improvements (e.g., zero base budgeting); estimating local revenues and expenditures; methods of financing capital facilities; debt financing and administration; measures of efficiency and effectiveness; and, management of cash.

FIN 6804 THEORY OF FINANCE (3)
PR: Financial Management or CI. A systematic and rigorous course in the theory of finance. Topics will include the theory of choice and the allocation of financial resources, the theory of optimal investment decisions, and the theory of risk and uncertainty in financial decisions. It will also cover the theoretical concepts underlying financing decisions and the cost of capital.

FIN 6816 INVESTMENTS (3)
PR: Financial Management. 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.

FIN 6906 INDEPENDENT STUDY (var.)
Independent study in which students must have a contract with an instructor. Repeatable. (S/U only.)

FIN 6915 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

FIN 6934 SELECTED TOPICS IN FINANCE (1-6)
PR: Graduate standing and CI. A variable credit course depending upon the scope and magnitude of the work required. Includes special lecture series.

Foundations Courses in Business

GRADUATE COURSES

GEB 6705 FINANCIAL ACCOUNTING FOR MANAGERS (4)
PR: Graduate standing. Study of (1) accounting concepts and standards applicable to presentation of financial information to interested users, (2) structure, uses and limitations of financial statements and (3) measurement systems related to income determination and asset valuation. Discussion of internal and external influences on accounting decisions.

GEB 6716 MICROECONOMIC ANALYSIS (4)
PR: Graduate standing. To present theories of economic behavior in our modern market system and an appreciation of the role of economic organizations in achieving private and societal goals. More specifically, consumer behavior and demand analysis for business decisions, theories of production and cost, and the significance of market prices are developed. Special problems faced by business and not-for-profit organizations under different conditions and market structures are treated at length.

GEB 6717 MACROECONOMIC ANALYSIS (4)
PR: GEB 6716. A study of the influence of aggregate demand and supply in the determination of output, employment, prices, wages, and interest rates. Also a treatment of inflation, growth, fluctuations, and the influences of world markets and the macroeconomic policies of government.

GEB 6725 FINANCIAL MANAGEMENT (4)
PR: GEB 6705 or its equivalent. The study of processes, the decision structures, and the institutional arrangements concerned with the utilization and acquisition of funds by a firm. The course will include the management of the asset structure and the liability structure of the firm under both certain and risky situations and considering the problems of time and the decision makers' preferences. The financial decision processes will include and
recognize the international as well as domestic aspects of financial management.

GEB 6745 MARKETING MANAGEMENT (4) PR: GEB 6716. A study of the problems and decisions confronting marketing managers, including an analysis of the social, technical, economic, legal, and political environment; and the development of strategic marketing plans. Includes topics on consumer and buyer behavior, market segmentation, marketing information systems, product selection and development, pricing policies, distribution, advertising and sales force decisions. Lec.-dis.

GEB 6756 STATISTICAL METHODS FOR MANAGEMENT (4) PR: Graduate standing; college algebra. A study of probability and statistics as applied to administrative problems of choice, estimation and prediction under conditions of uncertainty. Topics include: Basic probability concepts, measures of central tendency and dispersion, statistical decision theory, probability distributions, sampling and interval estimation, classical hypothesis testing, chi square tests, correlation, regression, and analysis of variance. Lec.-dis.

GEB 6757 QUANTITATIVE METHODS FOR OPERATIONS MANAGEMENT (4) PR: Graduate standing, college algebra. The study and application of management science techniques to business operations. Techniques include differential calculus, linear algebra, linear programming, queuing theory and simulation as applied to problems in resource allocation, scheduling, inventory control, and facility location. Lec.-dis.

GEB 6775 INFORMATION SYSTEMS FOR MANAGEMENT (4) PR: Statistical Methods for Management. A study of (1) the analysis and application of management information systems; (2) the impact of computers on decision making and organizational structure; and (3) the utilization of computer languages, statistical packages and other program libraries for problem solving and research analysis. Interface with the computer will be an integral part of the course.

MAN 6065 THE MANAGEMENT PROCESS (4) PR: Graduate standing. An examination of the theory and practice of management, including the study of goals and means, the functions of management, and the administrative process in general. A review of the beginning of modern management and the analysis of basic concepts of management will also be included.

MAN 6715 SOCIAL, LEGAL AND POLITICAL ENVIRONMENT OF BUSINESS (3) PR: Graduate standing. A study of the influence of social, cultural, legal and political environment on institutional behavior, including the changing nature of the business system, the public policy process, corporate power, legitimacy and managerial autonomy, and organizational reactions to environmental forces.

General Business Administration

UNDERGRADUATE COURSES

BUL 2111 LAW AND THE INDIVIDUAL (5) A study of the nature, functions, sources, formulation, and administration of law with the special emphasis on the practical aspects of criminal, tort, estate, divorce, property, business, constitutional, and other areas of law. Not available for credit to students who have been admitted to the College of Business.


BUL 3122 BUSINESS LAW II (5) PR: BUL 3112. Legal problems in marketing of goods, nature of property, sales of personal property, securing of credit granted, nature and use of negotiable instruments.


COC 3201 COMPUTERS IN BUSINESS I (3) An introductory interdisciplinary examination of the impact of computers on all areas of business decision-making. Problems are reduced to schematic logic, programmed, and tested using the computer. Computer hardware, software, history, and terminology are introduced.

COC 3211 BUSINESS COMMUNICATIONS (4) Analysis and application of the principles of organizational behavior in letters, memorandums, and reports. Identification and use of inference and assumption, role-playing, and conventions which affect interpersonal and organizational communications.

COC 3612 COMPUTERS IN BUSINESS II (5) PR: COC 3201. An advanced interdisciplinary examination of the impact of computer systems in the business enterprise. Concepts of data collection, information theory, business systems analysis, free maintenance, and update systems are developed.

COC 4901 INDEPENDENT STUDY (1-4) PR: CI. Specialized independent study determined by the students’ needs and interests. May be repeated up to eight credit hours. (S/U only.)

COC 4911 INDEPENDENT RESEARCH (1-5) PR: CI. Individual study contract with instructor and department chairperson required. The research project will be mutually determined by the student and instructor. May be repeated up to 10 hours.

COC 4935 SELECTED TOPICS IN BUSINESS ADMINISTRATION (1-6) The content and organization of this course will vary according to the current interests of the faculty and needs of students.

MAN 4720 SENIOR SEMINAR IN ADMINISTRATION (3) PR: Senior standing. 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.

GRADUATE COURSES

GEB 6905 INDEPENDENT STUDY (var.) Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

GEB 6915 DIRECTED RESEARCH (var.) PR: GR. Master’s level. Repeatable. (S/U only.)

GEB 6971 THESIS: MASTER’S (var.) Repeatable. (S/U only.)

MAN 5006 ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT COUNSELING (2-4) Small business management consulting in an on-going firm. Field application of various aspects of business administration in analyzing strengths and weaknesses, development of recommendations for improvement, and initiation of steps to assist business principal in evaluation and implementation. Emphasis on developing management consulting skills and recognizing implications of small business owner-manager’s capabilities and attitudes for success in implementing recommendations.

MAN 5925 CBA WORKSHOP (1-6) Professional applications workshop in various areas of finance, marketing, economics, accounting, management. May be repeated when subjects differ.

MAN 6721 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.
QMB 6656 QUANTITATIVE METHODS II (3)
PR: College Algebra, GEB 3121, or equivalents. Probability and sampling, Bayesian decision theory, and the design of experiments, as applied to administrative problems.

Management


UNDERGRADUATE COURSES

MAN 3010 PRINCIPLES OF MANAGEMENT (5)
Study of the fundamentals of management. It treats topics in organizational theory, organizational behavior and interpersonal communications which are relevant to effective management performance.

MAN 3150 ORGANIZATIONAL BEHAVIOR ANALYSIS (4)
The course covers the behavior and research literature relevant to organizational functioning. Topics include hierarchy and authority, the informal organization, structural variation in organizations, leadership and supervision, motivation, and communication and control processes. The course requires participation in elementary exercises in the management laboratory.

MAN 3301 PERSONNEL MANAGEMENT (3)
A study of the major functions in personnel including manpower planning, recruiting, selection, performance evaluation, wage and salary administration, training and development. Focus is on the integration of government and organizational manpower programs.

MAN 3401 INDUSTRIAL RELATIONS (4)
A conceptualization of the administrative problems arising from unionization. Emphasis on the relationships between management and employee representatives in private and public employment, and on the historical and legal framework of industrial relations.

MAN 3810 INTRODUCTION TO MANAGEMENT SCIENCE (4)
A survey of management science techniques and their application to problem solving and decision making.

MAN 4120L MANAGERIAL BEHAVIORAL LABORATORY (3)
PR: Organizational Analysis or Cl. The development of first hand understanding of the personal, interpersonal, and inter-group factors involved in social interaction. A general knowledge of the literature in the field of organizational behavior and social psychology is assumed. Emphasis is on experiential exercises in a laboratory setting.

MAN 4125 LABORATORY IN THE RESOLUTION OF GROUP CONFLICT (3)
An application of conflict resolution theory to a variety of social and organizational settings, including ethnic and inter-racial conflict. The principles acquired are then applied to the resolution of conflict in industry. This course assumes a general understanding of interpersonal and group behavior. Three hours laboratory under instructor supervision.

MAN 4201 ADVANCED ORGANIZATIONAL BEHAVIOR ANALYSIS (3)
PR: Organizational Analysis or Cl. Methods of analyzing complex organizational functioning and performance are studied using selected behavioral models. This course assumes a familiarity with the literature in the field of organizational behavior and its general implications for management.

MAN 4210 CHANGING ORGANIZATIONS (3)
PR: Organizational Analysis or Cl. Theory and research related to social-organizational change and resistance to change is considered along with its implications for the design of conditions and their differential effects on organizational climate. The unifying concept is the role of the Change Agent.

MAN 4410 LABOR RELATIONS LAW (3)
A survey of the various legal constraints applicable to labor-management relations. Includes practice in use of library resources for discovering statutes, cases or administrative rulings. This course assumes a general understanding of the organizations of management and union, the role of each in collective bargaining, and traditional methods for resolving industrial conflict. One and one-half hours lecture, one and one half hours case analysis and research.

MAN 4430 SEMINAR IN NEGOTIATION AND ADMINISTRATION OF LABOR AGREEMENTS (3)
An application of industrial relations theory to cases provided by the instructor. Includes exercises in contract negotiation, administration, grievance settlement, and arbitration. This course assumes a general understanding of the organizations of management and union, the role of each in collective bargaining, and traditional methods of resolving industrial conflict. Three hours laboratory under supervisor of instructor.

MAN 4504 OPERATIONS MANAGEMENT: A SYSTEMS APPROACH (3)
PR: Management Science or Cl. A systems approach to the study of effective operations management tools and concepts. Computerized approaches to problem solving are introduced and an emphasis is placed on interpretation of output for decision making purposes. A knowledge of the basic tools and techniques of management science is required.

MAN 4802 ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT (4)
PR: ACC 2001, ACC 2002, MAR 3023; or Cl. Study of the factors involved in starting and managing a small to medium-size business. Emphasis on conduct of pre-business feasibility study, selection of business field and organization structure, and successful management of marketing, personnel, production, accounting, finance, and related areas.

MAN 4804 SMALL BUSINESS MANAGEMENT COUNSELING (4)
PR: MAN 4802 or Cl. Field application of various aspects of business administration in analyzing strengths and weakness of an on-going small business. Development of recommendations for improvement and initiation of steps to assist business principal in evaluation and implementation. Emphasis on developing management counseling skills and recognizing implications of small business owner-manager's capabilities and attitudes for success in implementing recommendations.

MAN 4905 INDEPENDENT STUDY (1-4)
PR: Cl. Specialized independent study determined by the student's needs and interests. May be repeated up to 8 credit hours. (S/U only.)

MAN 4930 SELECTED TOPICS IN MANAGEMENT (1-5)
PR: Cl. Topics to be selected by instructor and department chairperson for pertinent Management issues.

MAN 4931 INDEPENDENT RESEARCH (1-5)
PR: Cl. Individual study contract with instructor and department chairperson required. The research project will be mutually determined by the student and instructor. May be repeated up to 10 hours.

MAN 4933 INTEGRATIVE SEMINAR IN MANAGEMENT (3)
PR: One of the following groups: MAN 3150, MAN 3401, MAN 3810 and two additional upper level Management courses, and senior standing; or Cl. A capstone course intended to integrate the concepts, generalizations, principles, and skills learned separately.
in previous, more specialized courses in Management and Administration. Emphasis, decision-making, action planning, and implementation.

QMB 4600 MANAGEMENT SCIENCE
APPLICATIONS
PR: Management Science or CI. A study of the application of management science models to typical organizational problems. Emphasis is on (1) problem formulation (2) data collection and (3) interpretation and implementation of solutions. A laboratory using decision science problems of organizations is a major part of this course. A knowledge of the basic tools and techniques of management science is required.

QMB 4654 MANAGEMENT SCIENCE MODELS
PR: Management Science or CI. A study of the theoretical basis of various management science models. These include linear, integer, dynamic, quadratic, and geometric programming; plus, gradient methods and branch and bound. A knowledge of the basic tools and techniques of management science is required.

QMB 4703 SIMULATION AND MODELING TECHNIQUES
A study of manual and computer simulation techniques and their application to problem solving in management (behavioral and quantitative). Knowledge of a computer language and the basic tools and techniques of management science is advised.

GRADUATE COURSES

MAN 5714 URBAN MANAGEMENT
The applicability of business management theories and practices to problem solving in the public sector. A formal theory of organization is used to compare and contrast private and public sector decision environments.

MAN 6055 MANPOWER MANAGEMENT
A study of the major factors involved in the development of an effective manpower management strategy; including manpower planning, selection, organization and job design, performance of evaluation, career advancement, employer benefits, rights and compensation. Emphasis is on an open-system view recognizing the need to operate within the complex external legal and societal environment while reducing internal conflict.

MAN 6061 PLANNING, CONTROL AND HUMANISM IN MANAGEMENT
A study of an increasing dilemma which is central to the role of all those in supervisory or managerial roles—the conflict between the need to exercise increasingly efficient controls through behavior, planning and budgets and the need for more humanistic management. The dilemma will be considered in a framework of stages of organizational development showing how stages occur in a particular order, how control is managed at each stage and how the conflict between control and humanism decreases with progression. Methods for accomplishing more rapid organizational progression through stages will be presented.

MAN 6107 MANAGERIAL BEHAVIOR
A laboratory approach to the understanding of patterns of interpersonal and inter-group behavior which are significant for the managerial role. Topics include perception expectation, motivation, defenses, conformity—deviation, status, anxiety, behavior control, self development, leadership styles, efficient utilization of time, and a critical analysis of current procedures used for manager development.

MAN 6135 MANAGEMENT OF COMMUNICATIONS
The analysis, organization and presentation of verbal and written communications and reports. Students will select and define a problem area, construct an annotated bibliography in that area, develop a research design for collection and analysis of appropriate data, and write a report on the proposed program in a form acceptable to the organizational and academic community. This work should represent a first step in selecting and developing a thesis (MAN 6971).

MAN 6157 MANAGEMENT OF PROFESSIONALS
PR: The Management Process or CI. Organizational behavior of professional employees (e.g., engineers, nurses, accountants, scientists, teachers, etc.) is investigated through available theories and concepts. Concentration is placed on the manager's role, especially that of matching organizational demands with individual talents and expectations.

MAN 6206 ORGANIZATIONAL THEORY AND ITS IMPLICATIONS FOR THE MANAGER
(1-3)
The course covers the major theories of organization and a comparative analysis of the differential options these theories provide for managerial strategy. It deals with the design of managerial environments for accomplishing different goals, the research literature in this field, and the implication of this research for prediction and design of environmental change.

MAN 6219 THE MANAGEMENT OF ORGANIZATIONAL CHANGE
(1-3)An experiential learning course utilizing real data from profit and not-for-profit organizations. The course is designed to provide students with direct experience in the systematic planning, implementation and control of change. By actually collecting and analyzing real data each student develops an operationally viable model for the changes inevitable in any ongoing organization.

MAN 6405 LABOR RELATIONS LAW
(3)A survey of the various legal constraints applicable to the employer-employee relationship. Included are such areas as collective bargaining, civil rights, and fair labor standards. (Also offered under Economics.)

MAN 6409 MANAGEMENT OF CONFLICT
(3)A survey of the literature on social conflict with emphasis on the causes of conflict within and between various types of organizations. The course will examine and evaluate traditional, as well as innovative methods for conflict resolution. Particular attention is given to conflict and its resolution as perceived through the collective bargaining process.

MAN 6569 THE MANAGEMENT OF OPERATIONS
(3)A study of the development of systematic planning and control systems at the operational level in organizations. Topics include, but are not limited to: quality control, materials management, cost control, work measurement and work flow, inventory management, production control, and project management and control.

MAN 6726 THE PRACTICE OF MANAGEMENT
(1-4)The course offers the student the opportunity to focus on an overall organization and to gain an understanding of the interaction between various components which the manager must integrate—the economic, financial, social, political, and technological. The aim is to provide students with experience in integrative skills through organizational design, planning and control, communication and leadership. To be taken during the last two quarters of study; preferably the final quarter.

MAN 6851 SIMULATION OF ADMINISTRATIVE SYSTEMS
(3)A study of manual and computer simulation techniques and their application to administrative problem solving. The course emphasizes: model design and construction; data collection and analysis; model testing and implementation problems. A computer language, such as GPSS or SIM-SCRIPT, is used for model construction.

MAN 6905 INDEPENDENT STUDY
(var.)Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

MAN 6911 DIRECTED RESEARCH
PR: GR. Master's level. Repeatable. (S/U only.)

MAN 6930 SELECTED TOPICS
(1-6)This course is designed to be taken either: in a tutorial format under the general guidance of a faculty member on some facet of management not regularly offered in a regular course; or, in conjunction with any regularly scheduled graduate course where a more in-depth study of the subject is mutually deemed to be
beneficial to the student's program. Topics would include, but not be limited to: management of health care, managing governmental systems, managing educational systems, entrepreneurial management, managing not-for-profit organizations, managing motivation and decision. May be retaken for credit providing topic selected is different.

MAN 6971 THESIS: MASTER'S (var.) Repeatable. (S/U only.)

QMB 6651 QUANTITATIVE ANALYSIS OF MANAGEMENT DECISIONS (1-3)
A study of the development and application of Operations Research tools for administrative problem solving. Using a decision science lab and case approach, the course emphasizes: systematic data collection for problem analysis; identification of appropriate tools for various types of problems; implementation difficulties; and, analysis and interpretation of results.

QMB 6691 COMPUTERS AND MANAGEMENT: THE EXECUTIVE VIEWPOINT (1-3)
A study of the use and impact of computers in modern organizations. The course emphasizes: current practices and future trends; the extended use of computers for broader planning and decision making systems; the development of Data Based Management Systems and MIS; and, the behavioral problems associated with computerization. Students desiring "hands-on" computer experience may register for an additional special topics course to be taken concurrently with this course.

Marketing

UNDERGRADUATE COURSES

MAR 3023 BASIC MARKETING (5)
PR: ACC 2001, ECO 2023; CR: ECO 2013 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.

MAR 3153 RETAILING MANAGEMENT (3)
PR: MAR 3023. A comprehensive analysis of the retailing structure, institutions and environment. Includes pertinent management theories and practices in organizing, planning and controlling retail operations.

MAR 3303 PRINCIPLES OF ADVERTISING AND SALES PROMOTION (3)
PR: MAR 3023. 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.

MAR 3403 PRINCIPLES OF SALESMANSHIP AND SALES MANAGEMENT (3)
PR: MAR 3023. 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.

MAR 3503 CONSUMER BEHAVIOR (3)
PR: MAR 3023; CR: MAR 3613 or CI. An investigation and application of the behavioral factors affecting consumer demand. Consideration given to industrial, governmental, and ultimate consumers.

MAR 3603 MARKETING MODELS AND MARKETING SYSTEMS (3)
PR: COC 3201, GEB 3121, MAR 4203. An investigation of the utility of formal, logical, mathematical, and other quantitative methods and models as these might be applied to marketing management.

MAR 3613 MARKETING RESEARCH (4)
PR: GEB 3121, MAR 3023. A study of research methods and techniques applicable to problem solving in marketing. Attention is also given to definition of information needs, determining the value of information, interpreting and reporting information for use in marketing decision making.

MAR 4203 MARKETING INSTITUTIONS AND CHANNELS (4)
PR: MAR 3023. A detailed study of marketing channels as a functional area of marketing management responsibility and as a part of marketing strategy. Attention is given to wholesaling and retailing and their structural, dynamic interrelationships including distribution logistics.

MAR 4213 MARKETING LOGISTICS (3)
PR: COC 3201, GEB 3121, MAR 4203 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.

MAR 4243 INTERNATIONAL MARKETING (3)
PR: MAR 3023. 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.

MAR 4343 MANAGEMENT OF ADVERTISING AND SALES PROMOTION (3)
PR: MAR 3303, MAR 3503 or CI. Discussion and analysis of cases bearing on managerial aspects of advertising and sales promotion including research, budget determination, strategy, tactics, and evaluation of results.

MAR 4353 PUBLIC RELATIONS AND THE MARKETING PROCESS (3)
PR: MAR 3023, MAR 3503 or CI. Principles, practices, and problems in public relations as an integrated part of and supplement to marketing management responsibilities and decisions.

MAR 4453 INDUSTRIAL MARKETING (3)
PR: MAR 3403, MAR 4203 or CI. Problems of marketing industrial goods. Characteristics of markets, channels, industrial buying, promotional practices, research and marketing policies.

MAR 4504 SEMINAR IN APPLIED STUDIES IN MARKETING (3)
PR: MAR 3503 and three Marketing courses at the 4000 level and CI. In-depth discussion, formulation, application, and evaluation of advanced research techniques and practices as currently applied to facilitate marketing decisions.

MAR 4713 MARKETING MANAGEMENT PROBLEMS (4)
PR: MAR 3503, MAR 3613, and three other Marketing 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.

MAR 4903 INDEPENDENT RESEARCH (1-5)
PR: CI. Individual study contract with instructor and department chairperson required. The research project will be mutually determined by the student and instructor. May be repeated up to 10 hours.

MAR 4905 INDEPENDENT STUDY (1-4)
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated up to 8 credit hours. (S/U only.)

MAR 4933 SELECTED TOPICS IN MARKETING (1-5)
PR: CI. Topics to be selected by instructor and department chairperson.
GRADUATE COURSES
MAR 6216 MARKETING CHANNELS AND PHYSICAL DISTRIBUTION MANAGEMENT (3)
PR: MAR 6506, MAR 6708 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.

MAR 6346 SEMINAR IN PROMOTIONAL POLICY AND STRATEGY (3)
PR: MAR 6506 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.

MAR 6506 BEHAVIORAL CONCEPTS IN MARKETING DECISION MAKING (3)
PR: MAR 6706 or CI. The application and techniques of the behavioral sciences to the understanding and improvement of the marketing process and decision making concerning consumer behavior.

MAR 6616 MARKETING RESEARCH AND INFORMATION SYSTEMS (3)
PR: MAR 6708, QMB 6603, QMB 6656 or CI. A study of the marketing research process, methods, and techniques and the need and applicability of information systems.

MAR 6706 ADVANCED MARKETING PROBLEMS (3)
PR: MAR 3023, or MAR 5055 or equivalent; MAR 6708; ECO 2013, ECO 2023 or ECO 5111, ECO 5204 or equivalent or CI. A study of important current issues in which marketing affects our lives; e.g., environment, drugs, cancer, warfare, etc.

CHEMISTRY


UNDERGRADUATE COURSES
BCH 3033 INTRODUCTORY BIOCHEMISTRY (4)
PR: CHM 3211. Introduction to the chemistry and intermediary metabolism of biologically important substances. Lec. Qtr. I, II, III, IV.

BCH 3033L BASIC BIOCHEMISTRY LABORATORY (3)
PR: BCH 3033. Practical work in determination and characterization of important biomolecules. Lec.-lab.

CHM 1015 FOUNDATIONS OF UNIVERSITY CHEMISTRY (5)
A survey of modern chemistry designed particularly for those with a poor preparation in algebra and/or chemistry as a preliminary to CHM 2045. Lec. Qtr. I, III, IV.

CHM 2020 CURRENT ISSUES IN CHEMISTRY (4)
A survey of the important current issues in which chemistry affects our lives; e.g., environment, drugs, cancer, warfare, etc. No credit for chemistry majors.

CHM 2030C ENVIRONMENTAL CHEMISTRY LABORATORY (4)
PR: CHM 2046 or equivalent. Fundamental techniques used in environmental chemistry, including basic manipulations and equipment. Lec.-lab.

CHM 2045 GENERAL CHEMISTRY I* (3)
CHM 2045 students are expected to have performed well in the placement exam* or to have satisfactorily completed CHM 1015. Fundamentals of chemistry; mass and energy relationships in study of the marketing problems of the firm approached from a management point of view. Emphasis is placed upon the development of the students’ ability to analyze marketing situations, identify problems, determine solutions, implement corrective action, and plan marketing strategy.

CHM 2045L GENERAL CHEMISTRY I LABORATORY (1)
PR: CHM 2045. Laboratory portion of General Chemistry I. Introduction to laboratory techniques; study of properties of elements and compounds; synthesis and analysis of natural and commercial materials. May not be taken concurrently with CHM 2045. Qtr. I, III, IV.

CHM 2046 GENERAL CHEMISTRY II (3)
PR: CHM 2045 or equivalent. Continuation of General Chemistry. Lec.-dis. Qtr. I, II, III, IV.

CHM 2046L GENERAL CHEMISTRY II LABORATORY (1)
PR: CHM 2045L, CHM 2046. Laboratory portion of General Chemistry II. Continuation of chemistry laboratory. May not be taken concurrently with CHM 2046. Qtr. I, II, III, IV.

CHM 2047 GENERAL CHEMISTRY III (3)
PR: CHM 2046 or equivalent. Continuation of General Chemistry. Lec.-dis. Qtr. I, II, III, IV.

CHM 2047L GENERAL CHEMISTRY III LABORATORY (1)
PR: CHM 2046L, CHM 2047. Laboratory portion of General Chemistry III. Continuation of chemistry laboratory. May not be taken concurrently with CHM 2047. Qtr. I, II, III, IV.

CHM 2055C ACCELERATED GENERAL CHEMISTRY I* (5)
This course is designed for the beginning student who has a superior background in science and mathematics. The laboratory is project oriented. Entrance is by examination. CHM 2055C-CHM 2055C is equivalent to CHM 2045-CHM 2046-CHM 2047 and CHM 2045L-CHM 2046L-CHM 2047L. Lec.-lab.-dis. Qtr. I.

*Placement examination for admission to CHM 2045 and CHM 2055C offered the first day of registration each quarter, during the summer FOCUS program, and is available during weeks of scheduled classes. Students should consult registration schedules or Chemistry office for time and place.
CHM 2056C  ACCELERATED GENERAL
CHEMISTRY II                     (5)
PR: CHM 2055. Continuation of Accelerated General Chemistry.
Lec.-lab.-dis. Qtr. II.

CHM 3021  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. No credit for Chemistry majors. Qtr. I, IV. This course is offered only on WUSF-TV Channel 16 by the Y.O.U. Program.

CHM 3120C  ELEMENTARY ANALYTICAL
CHEMISTRY                     (5)
PR: CHM 2047, CHM 2047L or CHM 2056C. Fundamentals of gravimetric, volumetric, spectrophotometric analysis. Lec.-lab. Qtr. I, II, III, IV.

CHM 3210, 3210L  ORGANIC CHEMISTRY I       (3:2)
PR: CHM 2047, CHM 2047L or CHM 2056C. Fundamental principles of organic chemistry and laboratory. Lecture and laboratory may not be taken concurrently. Qtr. I, II, III, IV.

CHM 3211, 3211L  ORGANIC CHEMISTRY II       (3:2)
PR: CHM 3210, CHM 3210L or equivalent. Continuation of Organic Chemistry and laboratory. Lecture and laboratory may not be taken concurrently. Qtr. II, III, IV.

CHM 3212, 3212L  ORGANIC CHEMISTRY III       (3:2)
PR: CHM 3211, CHM 3211L or equivalent. Continuation of Organic Chemistry and laboratory. Lecture and laboratory may not be taken concurrently. Qtr. I, III, IV.

CHM 3400  ELEMENTARY PHYSICAL CHEMISTRY       (3)
PR: CHM 2047, CHM 2047L or CHM 2056C, MAC 2243, PHY 2052, PHY 2052L. Introduction to equilibrium properties of macroscopic system. Properties of solutions.

CHM 3401  ELEMENTARY PHYSICAL CHEMISTRY II       (3)
PR: CHM 3400. Kinetic behavior of systems, macromolecular solutions, and colloidal dispersions, nuclear chemistry and spectroscopy.

CHM 3402C  ELEMENTARY PHYSICAL CHEMISTRY
LABORATORY                              (2)
CR: CHM 3400 and/or CHM 3401. A physical chemistry laboratory with emphasis on modern techniques and instruments. Lec.-lab.

CHM 3610C  INTERMEDIATE INORGANIC
CHEMISTRY                     (5)
PR: CHM 2047, CHM 2047L or CHM 2056C. Fundamental principles of inorganic chemistry. Lec.-lab. Qtr. II, IV.

CHM 4070  HISTORICAL PERSPECTIVES
IN CHEMISTRY                           (4)
PR: CHM 2047; or senior standing, and CI. A study in depth of the historical and philosophical aspects of outstanding chemical discoveries and theories. Lec.-dis. Qtr. II.

CHM 4130C  METHODS OF CHEMICAL
INVESTIGATION I. ANALYTICAL-PHYSICAL     (4)
PR: CHM 3120C, CHM 3212, CHM 3212L. CR: CHM 4410. Theory and applications of instrumental methods in chemical research with emphasis on electrochemical techniques. Lec.-lab. Qtr. I, II.

CHM 4131C  METHODS OF CHEMICAL INVESTIGATION
II. ANALYTICAL-PHYSICAL              (4)
PR: CHM 4130C. Continuation of CHM 4130C. Emphasis on spectroscopic techniques. Lec.-lab. Qtr. II, III.

CHM 4132C  METHODS OF CHEMICAL
INVESTIGATION III. CHEMICAL SYSTEMS    (3)
PR: CHM 4131C. Continuation of CHM 4131C. Emphasis on studies of chemical systems using a variety of techniques. Lec.-lab. Qtr. III, IV.

CHM 4300  BASIC BIO-ORGANIC CHEMISTRY      (4)
PR: CHM 3212 (or CHM 3211 and CI). Nature, structure elucidation, synthesis and (in selected cases) organic chemical mechanisms of biochemical involvement of the major classes of organic compounds found in living systems. Lec. only.

CHM 4410  PHYSICAL CHEMISTRY I         (4)
PR: CHM 3120C and MAC 3413. CR: PHY 2052C or PHY 3042. Thermodynamics, the states of matter, solutions. Lec. Qtr. I, II.

CHM 4411  PHYSICAL CHEMISTRY II        (4)
PR: CHM 4410. Introduction to quantum mechanics and molecular spectroscopy. Lec. Qtr. II, III.

CHM 4412  PHYSICAL CHEMISTRY III        (4)

CHM 4413C  METHODS
OF INORGANIC CHEMISTRY       (3:2)
PR: CHM 4131C. Continuation of CHM 4131C. Emphasis on spectroscopic methods of inorganic compounds. Lec. Qtr. I, III.

CHM 4405  INDEPENDENT STUDY           (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. The written contract required by the College of Natural Sciences specifies the regulations governing independent study. May be repeated. (S/U only.)

CHM 4931  CHEMISTRY SEMINAR       (1)
PR: Senior standing. Discussions of selected significant chemical topics of recent interest. (S/U only.) Qtr. II, III.

CHM 4932  SELECTED TOPICS IN CHEMISTRY       (1-6)
PR: CI. The course content will depend on the interest of faculty members and student demand.

CHM 4970  UNDERGRADUATE RESEARCH       (1-6)
PR: CI. (S/U only.) Qtr. I-IV.

CHS 4100C  RADIOCHEMISTRY       (4)
PR: CHM 3120. Theory and applications of natural and induced radioactivity. Emphasis on the production, properties, measurement, and uses of radioactive tracers. Lec.-lab. Qtr. I, II.

CHS 4300  FUNDAMENTALS OF CLINICAL
CHEMISTRY                           (4)
PR: BCH 3033. Theoretical and practical aspects of the analysis of various body fluids, with emphasis on the medical significance. Clinical chemistry majors must take CHS 4301L concurrently. Lec. Qtr. I, III.

CHS 4301L  CLINICAL LABORATORY        (2)
PR: BCH 3033 and CI, CHM 3120C. Laboratory experience in some of the most important clinical determinations. CHS 4300 must be taken concurrently. Lec.-lab. Qtr. I, III.

CHS 4302  CLINICAL CHEMISTRY PRACTICE (3-12)
PR: CI. Laboratory practice in clinical chemistry laboratories in the Tampa Bay area. Qtr. I-IV. (S/U only.)

CHS 4310C  INSTRUMENTAL ANALYSIS      (4)
PR: CHM 4412 or CI. Theory and practice of instrumental methods. Clinical Chemistry applications may be elected in the laboratory. Lec.-lab. Qtr. II, III.

GRADUATE COURSES

BCH 5065  BIOCHEMISTRY CORE COURSE       (4)
PR: Either CHM 3212, CHM 3212L and CHM 3400 or CHM 4410 or graduate standing. A one-quarter survey course in biochemistry for graduate students in chemistry, biology, and other appropriate fields and for particularly well-qualified undergraduates. Lec. Qtr. III.

BCH 5105L  TECHNIQUES IN BIOCHEMISTRY       (2)
PR: BCH 5065 or BCH 6066. Biochemistry laboratory with emphasis on modern techniques for use in biochemical research. Qtr. III.

BCH 6066  GENERAL BIOCHEMISTRY I         (4)
PR: BCH 5065 or CI. First quarter of a rigorous three-quarter general biochemistry course for chemistry and biology graduate students who primary interests are in this field. Lec. Qtr. I.
BCH 6067 GENERAL BIOCHEMISTRY II (4)
PR: BCH 6066. Continuation of General Biochemistry I. Lec. Qtr. II.

BCH 6068 GENERAL BIOCHEMISTRY III (4)
PR: BCH 6067. Continuation of General Biochemistry II. Lec. Qtr. III.

BCH 6506 ADVANCED BIOCHEMISTRY I. ENZYMES (4)
PR: BCH 6068 or Cl. A study of biochemical systems with emphasis on enzymes. Lec.

BCH 6068 GENERAL BIOCHEMISTRY III (4)
PR: BCH 6067. Continuation of General Biochemistry II. Lec. Qtr. III.

BCH 6506 ADVANCED BIOCHEMISTRY I. ENZYMES (4)
PR: BCH 6068 or Cl. A study of biochemical systems with emphasis on enzymes. Lec.

BCH 6706 ADVANCED BIOCHEMISTRY II, BIOORGANIC MECHANISMS (4)
PR: BCH 6068 or Cl. A study of biochemical systems with emphasis on mechanisms of biological reaction. Lec. Qtr. III.

BCH 6746 ADVANCED BIOCHEMISTRY III, BIOPHYSICAL CHEMISTRY (4)
PR: BCH 6068 or Cl. A study of biochemical systems with emphasis on physical methods of experimentation and interpretation. Lec.

CHM 5225 INTERMEDIATE ORGANIC CHEMISTRY (4)
PR: CHM 3212, CHM 3212L or equivalent. A study of stereochemistry, spectroscopy, theories of bonding, acid-base chemistry, and their application to the understanding of organic reactions. Lec.

CHM 5425 APPLICATIONS IN PHYSICAL CHEMISTRY (4)
PR: CHM 4412. Applications of chemical theory to chemical systems with emphasis on chemical kinetics and molecular spectroscopy. Lec.

CHM 5430 CHEMICAL THERMODYNAMICS (4)
PR: CHM 4412 or Cl. The applications of thermodynamic theory to the study of chemical systems with emphasis on the energetics of reactions and chemical equilibria. Lec.

CHM 5621 PRINCIPLES OF INORGANIC CHEMISTRY (4)
PR: CHM 4411 or Cl. Chemical forces, reactivity, periodicity, and literature in inorganic chemistry; basic core course. Lec. Qtr. I.

CHM 5931 SELECTED TOPICS IN CHEMISTRY (1-6)
PR: Cl. The following courses are representative of those that are taught under this title: Natural Products, Stericchemistry, Reactive Intermediates, Photochemistry, Instrumental Electr. Advanced Lab Techniques, Heterocyclic Chemistry, etc.

CHM 6150 ADVANCED ANALYTICAL CHEMISTRY (4)
PR: Cl. A study of complete analytical process, including sample handling, separations, the analysis step, and statistical interpretation of data. Emphasis placed on separations and statistics. Lec. Qtr. II.

CHM 6153 ELECTROCHEMISTRY (4)
PR: Cl. Introduction to the theory of ionic solutions and electrode processes. Theory and applications and electrochemical measurements. Lec. Qtr. III.

CHM 6250 ADVANCED ORGANIC CHEMISTRY III. SYNTHESIS (4)

CHM 6260 ADVANCED ORGANIC CHEMISTRY II, PHYSICAL-ORGANIC (4)

CHM 6280 ADVANCED ORGANIC CHEMISTRY I. NATURAL PRODUCTS (4)
PR: CHM 5225 or Cl. A study of any of the following topics: terpenes, steroids, vitamins, alkaloids, porphyrins, purine, and antibiotics. Qtr. III.

CHM 6380 ADVANCED ORGANIC CHEMISTRY IV (4)
PR: CHM 5225. The emphasis will vary from year to year.

CHM 6440 CHEMICAL KINETICS (4)
PR: Cl. Theory and methods for the study of reaction rates and the elucidation of reaction mechanisms. Lec. Qtr. II.

CHM 6460 STATISTICAL THERMODYNAMICS (4)
PR: Cl. Application of statistical mechanics to thermodynamics, the relation of molecular structure to thermodynamic properties. Lec.

CHM 6480 QUANTUM CHEMISTRY (4)
PR: Cl. Introduction to elementary quantum mechanism. Atomic structure and spectra. Lec.

CHM 6625 CHEMISTRY OF THE LESS FAMILIAR ELEMENTS (4)
PR: Cl. An integrated treatment of the conceptual and factual aspects of the traditionally less familiar elements, including noble-gas elements, unfamiliar non-metals, alkali and alkaline-earth metals and the transition elements. Lec. Qtr. III.

CHM 6650 STRUCTURAL INORGANIC CHEMISTRY (4)
PR: CHM 5621 or Cl. 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. Lec. Qtr. II.

CHM 6907 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

CHM 6935 GRADUATE SEMINARS IN CHEMISTRY (1)
PR: Admission to graduate program in chemistry. Required every quarter (when offered) for all students enrolled in chemistry graduate program. Requires participation in and attendance at the weekly departmental seminar. Must be repeated. (S/U only.)

CHM 6936 CHEMISTRY COLLOQUIUM (1)
PR: Admission to graduate program in Chemistry. Frequent (usually weekly) small-group analysis of current developments. May be repeated up to a cumulative total of 10 hours. (S/U only.)

CHM 6938 SELECTED TOPICS IN CHEMISTRY (1-6)
PR: Cl. 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 6939 CURRENT TOPICS IN CHEMISTRY (1)
PR: Admission to graduate program in chemistry. Required every quarter (when offered) for all students enrolled in chemistry graduate program. Requires participation in and contribution to weekly lecture series in a particular division (analytical, biochemistry, inorganic, organic or physical). Up to 4 credit hours. CHM 6939 may be used to satisfy the 6000 level structured course requirement. Must be repeated. (S/U only.)

CHM 6946 GRADUATE INSTRUCTION METHODS (1-5)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)
COMMUNICATION


UNDERGRADUATE COURSES

COM 3003 DIMENSIONS OF COMMUNICATION (4) An introductory survey of the various perspectives for the study of human communication. An exploration of the assumptions, constructs, and explanatory paradigms associated with the study of communication in its symbolic, aesthetic, historical, critical, and pragmatic dimensions.

COM 3122 INTERVIEW COMMUNICATION (4) A study of communication theory relative to interview situations with emphasis on the employment interview, appraisal interview, and persuasive interview.

COM 3131 TECHNICAL COMMUNICATION (4) Investigation and application of methodology and effective technical communication for effective oral presentation of technical reports.

COM 4110 SPEECH COMMUNICATION FOR BUSINESS AND THE PROFESSIONS (4) Identification of Speech Communication situations specific to business and the professions. Analysis of variables related to communication objectives and preparation of oral presentations in form of informational reports, conference management, persuasive communications, interviews, and public hearings.

COM 4120 INTRODUCTION TO COMMUNICATION THEORY IN ORGANIZATIONS (4) A study of communication variables and systems affecting organizational effectiveness.

COM 4942 COMMUNICATION INTERN SEMINAR (4) PR: Communication major and minimum of 40 hours in major. The Communication Intern Seminar provides students with an opportunity to put into practice concepts and skills acquired in their study of communication. Weekly seminar sessions augment intern experience. Application for seminar must be submitted one quarter prior to seminar offering.

ESL 1243 SPEECH COMMUNICATION FOR FOREIGN STUDENTS I (4) 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 conjunction with ESL 1422—English for Foreign Students.

ESL 1244 SPEECH COMMUNICATION FOR FOREIGN STUDENTS II (4) PR: ESL 1243 or CI. Intensive study and drill in American English pronunciation and listening comprehension. Emphasis on diction and speaking skills.

LIN 2200 SPEECH IMPROVEMENT AND PHONETICS (4) 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.

LIN 3010 INTRODUCTION TO LINGUISTICS (4) Introduction to the basic principles of linguistic science; phonological and grammatical analysis and description; language change and genetic relationships. (Note: One section of LIN 3010 is for Anthropology majors and requires ANT 2000 as a PR.)

LIN 3801 LANGUAGE AND MEANING (4) A survey introduction for non-specialists to the basic principles of semantics and the way language conveys ideas. This course is also available on WUSF-TV Channel 16 by the Y.O.U. Program.

LIN 4040 DESCRIPTIVE LINGUISTICS (4) PR: LIN 3010, LIN 4370 or CI. Introduction to the basic techniques of formalizing linguistic descriptions through elementary phonological, morphological, and syntactic data solution-problems drawn from a variety of languages. Both taxonomic and generative analysis and descriptions will be developed and compared.

LIN 4377 LANGUAGE TYPES OF THE WORLD (4) 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 4600 LANGUAGE AND SOCIETY (4) PR: LIN 3010 or LIN 4370. 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 4701 PSYCHOLINGUISTICS (4) PR: LIN 3010 or LIN 4370. The nature of linguistic structure and its correlates in behavior and perception. Examination of the hypotheses of Whorf, Chomsky, and others.

LIN 4903 DIRECTED READING (3-5) PR: CI. Readings in special topics. Must be arranged prior to registration.

LIN 4930 SELECTED TOPICS (3-5) PR: CI. Course content depends upon student's needs and instructor's interest and may range over the entire field of linguistics.

ORI 2008 ORAL INTERPRETATION AS COMMUNICATION ART (4) A survey of the theories in the oral interpretation of literature, as it correlates with the field of communication. No credit toward the Communication major.

ORI 2020 ORAL INTERPRETATION REPERTORY (4) Problems in choice of materials, audience situations, adaptation. Aesthetic, psychological, educational sociological aspects of program planning. Collection, adaptation, rehearsal, presentation of literature. Does not count as credit toward the Communication major. May be repeated up to 8 credit hours.
ORI 3000 FUNDAMENTALS OF ORAL READING
(4)
Designed to develop proficiency in the understanding and oral communication of literary and other written materials.

ORI 3920 ISSUES AND INTERPRETATION
(2)
The study of literature through analysis of printed textual materials and of the visual-aural textual performance of them. May be repeated.

ORI 3950 ORAL INTERPRETATION PERFORMANCE
(2)
PR: ORI 3000 or CI. The study, rehearsal, and performance of literature for Readers Theatre and Chamber Theatre productions. May be repeated (maximum total 6 hours).

ORI 4120 ORAL INTERPRETATION OF POETRY
(4)
PR: ORI 3000 or CI. Critical appreciation of lyric and narrative poetry and communication of that appreciation to audience. Study of poetic theory and prosodic techniques.

ORI 4140 ORAL INTERPRETATION OF DRAMATIC LITERATURE
(4)
PR: ORI 3000 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.

ORI 4230 ORAL INTERPRETATION OF BIBLICAL LITERATURE
(4)
PR: ORI 3000 or CI. A critical interpretation and oral presentation of selected Books of the Old Testaments.

ORI 4310 INTRODUCTION TO READERS' THEATRE
(4)
PR: ORI 3000 or CI. Designed to introduce the student to and give him experience in various forms of groups approaches to oral interpretation.

SPC 2023 FUNDAMENTALS OF SPEECH COMMUNICATION
(5)
The nature and basic principles of speech; emphasis on improving speaking and listening skills common to all forms or oral communications through a variety of experiences in public discourse.

SPC 3140 INTRODUCTION TO SPEECH SCIENCE
(4)
PR: LIN 2200 or CI. Communication models are analyzed. Emphasis on quantifiable parameters of effective speaking.

SPC 3210 COMMUNICATION THEORY
(4)
PR: Junior standing or CI. The study of source, message, and receiver variables in human communications; communication settings; descriptive and predictive models of communication; speech communication as a process.

SPC 3301 INTERPERSONAL COMMUNICATION
(4)
PR: Junior standing or CI. A study of interpersonal communication in informally structured settings with emphasis on the understanding, description, and analysis of human communication.

SPC 3410 PARLIAMENTARY PROCEDURES
(3)
Principles of parliamentary procedure and practice in conducting and participating in meetings governed by parliamentary rules.

SPC 3441 GROUP COMMUNICATION
(4)
PR: Junior standing or CI. A survey of theory and experimental research in group communication. Group discussions and communication exercises to increase awareness of the dynamics of human communication in small group settings.

SPC 3513 ARGUMENTATION AND DEBATE
(4)
PR: Junior standing or CI. Study of principles of argumentation as applied in oral discourse, analysis of evidence and modes of reasoning. Practice in debate preparation and delivery.

SPC 3594 FORENSICS
(2)
Study, library research, practice in forensics. Application of the principles of rhetoric to the current debate and discussion topics. May be repeated (maximum of 6 hours).

SPC 3601 PUBLIC SPEAKING
(4)
Study of selected public addresses as aids in speaking extemporaneously and from manuscript. The relationship between public speaking and public policy formulation.

SPC 3633 RHETORIC OF CONFRONTATION
(4)
PR: Junior standing or CI. The study of rhetorical strategies and tactics of agitation and control in confrontation situations.

SPC 3641 NAZI PROPAGANDA
(4)
Study of communication behavior in the Nazi movement in Germany and America: Emphasis on communication concepts, principal communicators (Hitler, Goebbels, Streicher, and Rockwell) and use of media.

SPC 3651 CURRENT ISSUES AND RHETORIC
(2)
Analysis of significant current speakers and issues. May be repeated.

SPC 3653 POPULAR FORMS OF PUBLIC COMMUNICATION
(4)
PR: Junior standing or CI. Analysis of public communication with emphasis on various presentation forms.

SPC 3900 DIRECTED READINGS
(1-5)
PR: Junior standing and CI.

SPC 3905 UNDERGRADUATE RESEARCH
(1-5)
PR: Junior standing and CI. Individual investigations and faculty supervision.

SPC 3930 SELECTED TOPICS
(1-5)
PR: Junior standing and CI.

SPC 4640 THE RHETORIC OF AMERICAN DEMAGOGUES
(4)
An analysis of the communication of such 20th Century American political leaders as: Bilbo, Agnew, McCarthy, Wallace, Nixon, and Malcolm X.

SPC 4681 HISTORY AND CRITICISM OF PUBLIC ADDRESS
(4)
PR: SPC 3601 or CI. The principles of rhetorical criticism applied to selected great speeches of Western Civilization.

SPC 4900 DIRECTED READINGS
(1-5)
PR: Senior standing and CI.

SPC 4905 UNDERGRADUATE RESEARCH
(1-5)
PR: Senior standing and CI. Individual investigations with faculty supervision.

SPC 4906 INDEPENDENT STUDY
(1-5)
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated for credit. (S/U only.)

SPC 4930 SELECTED TOPICS
(1-5)
PR: Senior standing and CI.

SPC 4932 SENIOR SEMINAR IN SPEECH COMMUNICATION
(4)
PR: Senior standing, Speech Communication major. Exploration of selected topics of current significance to the several areas of speech communication through group discussion and research.

GRADUATE COURSES

COM 6001 INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION
(4)
Required of all M.A. candidates. An introduction to the aims and methodologies of the graduate discipline of communication: its relationship to the adjacent arts and sciences; bibliographical resources; methods of research; and a brief survey of the historical development of the field with emphasis upon current issues in theory, research, and practice.

COM 6121 COMMUNICATION THEORY IN ORGANIZATIONS
(4)
A study of communication theory and behavior within organizational settings: role of communication, communication climates, communication networks, leadership.
Native informants are brought on campus to replicate LIN 6233 ADVANCED LIN 6377 THE LIN 6146 COMPARATIVE LIN 6128 HISTORICAL UN 6110 LIN 5714 LANGUAGE AND LIN 5245 EXPERIMENTAL PHONETICS PR: LIN 2200 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.

Development of phonetic skills of discrimination and reproduction of speech sounds.

LIN 5714 LANGUAGE AND SPEECH FOR CHILDREN PR: LIN 2200 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.

LIN 6110 DIRECTED RESEARCH PR: GR. Master's level. Repeatable. (S/U only.)

LIN 6117 HISTORY OF LINGUISTIC THOUGHT 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 6128 HISTORICAL LINGUISTICS An advanced survey of the principles and methodology of historical linguistics.

LIN 6130 TOPICS IN THEORETICAL LINGUISTICS Offerings will include current issues in any area of linguistic theory.

LIN 6146 COMPARATIVE LINGUISTICS The principles and methodology of comparative linguistics, focusing upon a major Indo-European subfamily, such as Romance, Germanic, or Balto-Slavic.

LIN 6233 ADVANCED PHONETICS PR: LIN 5231 or equivalent. Intensified training in close phonetic transcription. Work on dialects, intonation, distinctive feature theory and acoustic phonetics.

LIN 6240 PHONOLOGICAL DESCRIPTION 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 6377 THE STRUCTURE OF A SPECIFIC LANGUAGE A linguistic examination of the phonological, morphological, and syntactic structures of both common and uncommon languages, such as Arabic, German, Mikasuki, Seneca, Swahili, and Russian, etc. No prior knowledge of uncommonly-taught or unwritten languages is presumed on the part of the student (e.g., Mikasuki Seneca, Swahili). However, when the course focuses upon a regularly-taught major world language (e.g., French, German, Russian, Spanish, etc.), an elementary knowledge of that language will be presumed on the part of the student. May be repeated up to ten credit hours with change in content/title.

LIN 6380 SYNTAX DESCRIPTION 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 6405 CONTRASTIVE ANALYSIS PR: LIN 4377. A systematic comparison and contrast of the phonological, morphological, and syntactic characteristics of contemporary American English with corresponding structures in a selected number of foreign languages which the ESL teacher is likely to encounter both in the U.S. and abroad. Typical languages or language groups include Spanish (Romance), Semitic (Arabic & Hebrew), Chinese, Japanese, and others. No knowledge of these languages on the part of the student is presumed. Emphasis upon practical pedagogical strategies for overcoming potential sources of interference for the ESL learner without regard to theoretical considerations.

LIN 6407 APPLIED LINGUISTICS 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 6425 FORMAL STYLISTICS Studies in the relationship between the development of language and literary criticism; developments in modern linguistic theory and their application to problems of aesthetics, literary structure, and style.

LIN 6435 FIELD METHODS PR: LIN 4040 and LIN 5231. 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 6601 SOCIOLINGUISTICS Detailed analysis of the phenomenon of language variation with emphasis upon the research methodology of socio-linguistics and the implications of its finding for current linguistic theory.

LIN 6715 LANGUAGE ACQUISITION PR: LIN 3010, LIN 4370 or CI. A survey of current research and theory in the processes of normal language acquisition and development.

LIN 6810 SEMIOTICS PR: CI. Introduction to kinesics and paralinguistics: the linguistic structure of gesture, proxemics, and other significant areas of non-verbal communication and signaling behavior.

LIN 6820 STUDIES IN SEMANTICS 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 6908 INDEPENDENT STUDY Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

LIN 6932 SELECTED TOPICS Content will depend upon instructor's interests and student's needs. Such topics as computational and mathematical linguistics, biolinguistics, dialectology and linguistic geography, and pidgins and creoles may be treated, as well as the study of the structures of languages not ordinarily taught.

LIN 6940 GRADUATE INSTRUCTION METHODS Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per students. (S/U only.)

LIN 6971 THESIS: MASTER'S Repeatable. (S/U only.)

ORI 5145 ORAL INTERPRETATION OF DRAMATIC LITERATURE II PR: ORI 4140. A study of selected pre-modern dramas with special emphasis on problems of interpretation for oral performance.
COMMUNICOLOGY

ORI 5210 ORAL INTERPRETATION OF CHILDREN'S LITERATURE (4)
PR: ORI 3000 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.

ORI 6146 ORAL INTERPRETATION OF THE PLAYS OF SHAKESPEARE (4)
PR: ORI 3000 or CI. A study of selected plays of Shakespeare from the point of view of the oral interpreter.

ORI 6350 LITERARY ADAPTATION FOR ORAL INTERPRETATION (4)
Composition and adaptation of literary materials for oral presentation. An investigation of approaches to various genres: poetry, fiction, and non-fiction.

ORI 6410 HISTORY AND THEORIES OF ORAL INTERPRETATION (4)
A study of the history, critical writings, uses, and developments of the art of oral interpretation, with analysis of the principles and practices.

PHI 6226 LANGUAGE AND NATURE (4)
A study of the development of language as an instrument for ordering human consciousness in terms of European ideas of Nature, with special emphasis upon the dialectic, relational, and popular modalities of conceptual representation.

PHI 6228 LANGUAGE AND LIMIT (4)
Introduction to the principles of the logic of natural languages including semantic analysis of logical relations between selected syntactic structures (active/passive, raising, case relations, etc.); logical dominance in semantic structure; applications of logic to questions of linguistic meta-theory.

SED 6943 GRADUATE INSTRUCTION METHODS (1-5)
Special course to be used primarily for the training of graduate assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

SPE 5151 SPEECH BEHAVIOR AND PROCESS (4)
PR: Upperclass standing. Study of the theories of the simple and complex acoustical phenomenon of speech; intensive analysis of the stimulus-feedback variable of speech.

SPE 5903 DIRECTED READINGS (1-5)
PR: Senior or graduate standing and CI.

SPE 5912 RESEARCH (1-5)
PR: Senior or graduate standing and CI.

SPE 5933 SELECTED TOPICS (1-5)
PR: Senior or graduate standing and CI.

SPE 6149 COMMUNICATION: ANALYSIS AND MEASUREMENT (4)
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 6190 SEMINAR IN SPEECH SCIENCE (4)
PR: LIN 5245. 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.

SPC 6231 RHETORICAL THEORY (4)
Historical development of rhetorical theory from Plato to contemporary theorists with emphasis upon the evolution of trends and concepts in rhetorical theory.

SPC 6442 THEORY AND RESEARCH IN SMALL GROUP COMMUNICATION (4)
PR: SPC 3441. Study of contemporary theories and research relating to communication in small group settings.

SPC 6515 THEORIES OF ARGUMENT (4)
An examination of argumentative theory through the medium of selected reading in the works of major theorists past and present. In addition, selected examples from the argumentative persuasion of each historical period will be examined and analyzed for the purpose of correlating theory with practice.

SPC 6545 PERSUASION (4)
PR: SPC 3513. Study of contemporary theories and research in persuasion.

SPC 6610 HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS (4)
Criticism of selected speeches and speakers of American public address, studied against a background of political, social, and intellectual issues.

SPC 6682 THEORIES OF RHETORICAL CRITICISM (4)
The study of theoretical perspectives in rhetorical criticism. The application of criticism to selected rhetorical situations.

SPC 6903 DIRECTED READINGS (1-5)
PR: GR. Master's level. Repeatable. (S/U only.)

SPC 6934 SELECTED TOPICS IN SPEECH (1-5)
PR: SPC 6971 THESIS: MASTER'S (var.) Repeatable. (S/U only.)

TSL 6371 METHODS OF TEACHING ENGLISH AS A SECOND LANGUAGE I (4)
PR: Graduate standing. Required of all candidates for the M.A. degree in TESL. Analysis of the methods of teaching English pronunciation and structure to speakers of other languages. Content will include theories of second language acquisition, phonological contrastive analysis, and a survey of various types of programs in ESL, EFL, ESP, and Bilingual Education in terms of teaching materials and curricula.

TSL 6372 METHODS OF TEACHING ENGLISH AS A SECOND LANGUAGE II (4)
PR: TSL 6371. Required of all candidates for the M.A. degree in TESL. Content includes discussion of the problems and methods employed in teaching reading comprehension, conversation, composition, and listening comprehension; the second part of the course deals with testing English as a Second Language.

TSL 6945 INTERNSHIP (1-9)
PR: TSL 6371 and TSL 6372. Required of all candidates for the M.A. degree in TESL. Supervised teaching of English as a second language to nonnative speakers at appropriate levels and settings. May be repeated up to 9 credit hours. (S/U only.)


COMMUNICOLOGY

UNDERGRADUATE COURSES

LIN 3260 APPLIED PHONOLOGY (6)
An examination of phoneme systems and distinctive features of their allophonic variants with particular emphasis upon those superfixes and suprasegmental modifiers necessary to the understanding and recording of early developmental and deviant speech patterns.
SPA 2001 SURVEY OF COMMUNICATION DISORDERS (3)
A general survey course concerning the nature and prevention of disorders of communication.

SPA 3020 INTRODUCTION TO SPEECH PATHOLOGY (6)
The scope of speech pathology as a profession and field of study. An introduction to speech and language disorders (articulation, stuttering, voice, aphasia, etc.): etiologies, major treatment approaches, and research findings.

SPA 3080 INTRODUCTION TO RESEARCH PROCEDURES IN COMMUNICATION (4)
Perspective on research in speech pathology and audiology. Introduction to multivariate design considerations as they apply to research, speech and hearing laboratory and clinical settings. Analysis of basic hypothesis testing.

SPA 3101 ANATOMY OF THE SPEECH AND HEARING MECHANISM (6)
The neurological and anatomical basis of communication disorders. Comparisons of normal and pathological organic structures and their functional dynamics. Separate sections concentrating on normal and abnormal aural physiology are scheduled for those students with a primary emphasis in audiology.

SPA 3110 INTRODUCTION TO AUDIOLOGY (6)
The scope of audiology as a profession and field of study. An introduction to the study of hearing impairments: classifications, etiologies, major treatment approaches, and research findings.

SPA 4050 INTRODUCTION TO SPEECH PATHOLOGY AND AUDIOLOGY PRACTICUM (1-12)
Observation and participation in speech pathology and audiology practicum in the University clinical laboratory.

SPA 4333 BASIC MANUAL COMMUNICATION (3)
An introduction to the American Sign Language (ASL) as used among the adult deaf community. Discussion of ASL and its linguistic features as well as an introduction to other manual communication systems and philosophy with demonstrations. Students will acquire the skill to read receptively at least 600 signs and to use those signs expressively. Demonstrations of sign production will be provided with practice periods and an opportunity for interaction with the local deaf community will be afforded to the student.

SPA 4363 NATURE AND NEEDS OF THE HEARING IMPAIRED (6)
A study of the effects of auditory disorders upon the organization and expression of behavioral patterns as they relate to motivation, adjustment and personality.

SPA 4930 DIRECTED READINGS (4)
PR: CI. A reading program of topics in speech pathology and/or audiology, conducted under the supervision of a faculty member. May be repeated three times.

GRADUATE COURSES

SPA 5002 THE SCIENCE OF COMMUNICATION DISORDERS (6)
PR: SPA 3020 or SPA 3110 or CI. The application of behavioral and learning principles to the study of the normal development of speech, language and hearing and to the management of disorders.

SPA 5131 SPEECH PATHOLOGY INSTRUMENTATION (6)
PR: CI. Calibration, usage and specific applications of specialized instruments available in dealing with speech and language disorders. Includes: recording, sonograph, audiofeedback, video equipment, behavior measuring devices.

SPA 5132 AUDIOLOGY INSTRUMENTATION (6)
PR: CI. Calibration, usage and specific applications of specialized instruments available in dealing with the identification and measurement of hearing disorders. Includes: sound level recorders, audiometers, and the electrophysiological measurement devices.

SPA 5201 COMMUNICATION DISORDERS: ARTICULATION (4)
PR: CI. An examination of normal and deviant articulatory acquisition and behavior. Presentation of major theoretical orientations and the therapeutic principles based upon them.

SPA 5210 COMMUNICATION DISORDERS: VOICE (4)
PR: CI. A comprehensive study of the medical and physical aspects of voice disorders. Primary emphasis is on therapeutic management.

SPA 5222 COMMUNICATION DISORDERS: STUTTERING (4)
PR: CI. A comprehensive study of the diagnosis and modification of stuttering based on a two-factor model. Other major theories are considered and evaluated.

SPA 5303 AUDIOLOGY: HEARING SCIENCE (6)
PR: Admittance to the Program or CI. Introduction to psychoacoustical phenomenon as it relates to the measurement of hearing. Overview of principles and methods of identification audiometry with emphasis on neonatal, preschool, and school age populations. Procedures for determining pure tone thresholds including the application of masking techniques. Fundamental concepts related to hearing aids and their benefits. Management of hearing impaired individuals including counseling.

SPA 5312 AUDIOLOGY: SPEECH AUDIOMETRY (6)
PR: SPA 5303 or CI. Advanced study of psychoacoustical phenomenon as it relates to the measurement of hearing. Instruction emphasizing principles and methods of determining hearing acuity through the use of speech stimuli. Management of clients from pertinent case histories through post-evaluation recommendations. Thorough consideration of hearing aids with special attention on techniques of selecting and fitting aids in clinical setting.

SPA 5402 COMMUNICATION DISORDERS: LANGUAGE (4)
PR: CI. Examination of research and clinical literature presenting major theoretical orientations pertaining to the etiology, evaluations, and treatment of those factors that hinder or interrupt normal language acquisition or function.

SPA 5550 METHODS FOR ORAL COMMUNICATION DISORDERS (6)
PR: SPA 5552 or CI. An in-depth analysis of classic and contemporary methods employed in the management of communicatively impaired individuals. Experimental approaches are reviewed through current medical, psychological, speech, language and hearing journals.

SPA 5552 EVALUATION OF ORAL COMMUNICATION DISORDERS (6)
PR: Admittance to the Program or CI. The administration, evaluation, and reporting of diagnostic tests and procedures used in the assessment of speech and language disorders.

SPA 5557 SPEECH PATHOLOGY AND AUDIOLOGY PRACTICUM (1-12)
PR: CI. Participation in speech pathology and audiology practicum in the University clinical laboratory and selected field settings.

SPA 5600 MANAGEMENT OF COMMUNICATION DISORDERS (4)
PR: CI. The planning of programs for individuals with speech, language, and hearing impairments. Includes administration of programs in public schools, clinics, and private practice.

SPA 5910 SUPERVISED RESEARCH (1-12)
PR: CI. Individualized programs of student research approved and supervised by a faculty member.

SPA 5930 SELECTED TOPICS (4)
PR: CI. A reading program of topics in speech pathology and/or
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>SPA 6205</td>
<td>DIALECT AS A COMMUNICATION DISORDER</td>
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<tr>
<td>PR: CI</td>
<td>Research and clinical literature on dialect as a</td>
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<td>communication disorder</td>
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<tr>
<td>SPA 6231</td>
<td>CEREBRAL PALSY</td>
<td>(4)</td>
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<tr>
<td>PR: CI</td>
<td>A study of the medical, physical, occupational,</td>
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<td>speech, language, and hearing problems of the</td>
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<td>cerebral palsied. Therapy techniques are</td>
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<td>reviewed and evaluated</td>
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<td>SPA 6245</td>
<td>CLEFT PALATE</td>
<td>(4)</td>
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<tr>
<td>PR: CI</td>
<td>An in-depth study of speech, language and hearing</td>
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<td>problems associated with cleft lip and cleft</td>
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<td>palate. Consideration is given to a</td>
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<td>multidisciplinary approach to therapy and</td>
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<td>rehabilitation.</td>
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<td>SPA 6305</td>
<td>CHILD AUDIOLGY</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 5312</td>
<td>Etiologies and manifestations of hearing loss</td>
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<td>within a pediatric population. Survey of</td>
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<td>procedures used in early identification</td>
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<td>and quantified measurement of hearing loss in</td>
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<td>young and non-communicative children.</td>
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<td>SPA 6307</td>
<td>SPECIAL AUDITORY TESTS</td>
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<tr>
<td>PR: SPA 5312</td>
<td>History, development, rationale and techniques</td>
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<td>for administering hearing tests to determine</td>
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<td>site of lesion, including those requiring</td>
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<td>special instrumentation. The detection and</td>
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<td>clinical management of pseudohypacusis</td>
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<td>including the use of objective audiometry.</td>
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<td>SPA 6322</td>
<td>TECHNIQUES OF AUDITORY TRAINING AND</td>
<td>(6)</td>
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<td>SPEECHREADING</td>
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<td>PR: CI</td>
<td>A careful analysis of the visual and auditory</td>
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<td>sense modalities as input systems used to</td>
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<td>facilitate communication in the hearing</td>
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<td>impaired. Particular attention is given to</td>
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<td>theories and models which explain the</td>
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<td>interrelationship of the two modalities.</td>
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<td>Methods and techniques employed in the</td>
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<td>habilitation of both modalities for the</td>
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<td>hearing impaired will be completely</td>
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<td>delineated.</td>
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<tr>
<td>SPA 6332</td>
<td>COMMUNICATIVE SKILLS FOR THE</td>
<td>(6)</td>
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<td></td>
<td>HEARING IMPAIRED</td>
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<tr>
<td>PR: SPA 3020</td>
<td>Application and evaluation of techniques for</td>
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<td>teaching symbolic functioning to children with</td>
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<td>hearing impairments. Consideration of</td>
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<td>developmental and remedial aspects of</td>
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<td></td>
<td>reading.</td>
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<tr>
<td>SPA 6335</td>
<td>ADVANCED MANUAL COMMUNICATION AND</td>
<td>(3)</td>
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<tr>
<td></td>
<td>BASIC INTERPRETING</td>
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<tr>
<td>PR: SPA 4333</td>
<td>A continuation of basic course which expands</td>
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<td></td>
<td>students signing skills and presents a</td>
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<td>thorough exposition of sign systems aimed at</td>
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<td></td>
<td>signing in an English language context —</td>
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<td>Seeing Essential English (SEE 1), Signing</td>
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<td>Exact English (SEE 2), Linguistics of Visual</td>
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<td>English (LVE), and Signed English. Those</td>
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<td>systems will be compared and contrasted</td>
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<td>with demonstrations. Interpreting for deaf</td>
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<td>individuals will be introduced. The introduction</td>
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<td>will include a discussion of the Interpreter's</td>
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<td>Code of Ethics and interpreting in different</td>
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<td>situations. Opportunity for practice of skills.</td>
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<td>May be repeated once.</td>
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<td>SPA 6345</td>
<td>HEARING DISORDERS</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 6307</td>
<td>The compilation and interpretation of hearing</td>
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<td>test data for diagnosing hearing impairment.</td>
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<td>Investigation of medical and surgical techniques</td>
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<td>for the treatment of hearing loss, coordinating</td>
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<td>information for planning the treatment and</td>
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<td>rehabilitation of the hearing impaired,</td>
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<td>including the involvement of other</td>
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<td>professionals.</td>
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<td>SPA 6354</td>
<td>HEARING CONSERVATION</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 5312</td>
<td>A comprehensive study of all aspects of</td>
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<td>hearing conservation, especially those relating</td>
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<td>to the detection and prevention of hearing loss</td>
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<td>in both children and adult populations. Special</td>
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<td>attention is given to problems encountered</td>
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<td>by industry.</td>
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<td>SPA 6410</td>
<td>APHASIA</td>
<td>(4)</td>
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<tr>
<td>PR: CI</td>
<td>A consideration of the neurological and</td>
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<td>psychological aspects of aphasia as they relate</td>
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<td>to communication disorders. Specific language</td>
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<td>therapy approaches are discussed and evaluated.</td>
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<tr>
<td>SPA 6423</td>
<td>LANGUAGE FOR THE HEARING IMPAIRED</td>
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<tr>
<td>PR: SPA 3020, SPA 3110, SPA 4363 or CI.</td>
<td>Techniques and materials of teaching language</td>
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<td>to children with auditory disorders. Evaluation</td>
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<td>and analysis of contemporary methods.</td>
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<tr>
<td>SPA 6505</td>
<td>PRACTICUM</td>
<td>(1-12)</td>
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<tr>
<td>PR: CI</td>
<td>Participation in speech pathology and audiology</td>
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<td>practicum in the University clinical laboratory</td>
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<td>and selected field settings.</td>
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<tr>
<td>SPA 6825</td>
<td>RESEARCH PROCEDURES IN SPEECH PATHOLOGY AND</td>
<td>(4)</td>
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<td></td>
<td>AUDIOLOGY</td>
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<tr>
<td>PR: CI</td>
<td>Advanced research and experimental design</td>
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<td>techniques employed in clinical and laboratory</td>
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<td>settings in speech pathology and audiology.</td>
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<td>Introduction to research technologies: review of</td>
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<td>stylistic considerations in research writing.</td>
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<td>SPA 6906</td>
<td>INDEPENDENT STUDY</td>
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<td>Independent study in which students must have</td>
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<td>a contract with an instructor. Repeatable.</td>
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<td>(S/U only.)</td>
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<tr>
<td>SPA 6910</td>
<td>DIRECTED RESEARCH</td>
<td>(var.)</td>
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<tr>
<td>PR: GR</td>
<td>Master's level. Repeatable. (S/U only.)</td>
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<tr>
<td>SPA 6930</td>
<td>SELECTED TOPICS</td>
<td>(4)</td>
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<tr>
<td>PR: CI</td>
<td>A reading program of topics in speech pathology</td>
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<td></td>
<td>and audiology conducted under the supervision</td>
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<td>of a faculty member. May be repeated three</td>
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<tr>
<td>SPA 6971</td>
<td>THESIS: MASTER'S</td>
<td>(var.)</td>
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<td>Repeatable. (S/U only.)</td>
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**COOPERATIVE EDUCATION**

**UNDERGRADUATE COURSES**

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<td>COE 1940</td>
<td>COOPERATIVE EDUCATION, 1ST TRAINING PERIOD</td>
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<tr>
<td>PR:</td>
<td>45 hours of academic credit, acceptance in</td>
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<td>Cooperative Education Program. (S/U only.)</td>
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<td>COE 1941</td>
<td>COOPERATIVE EDUCATION, 2ND TRAINING PERIOD</td>
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<td>PR: COE 1940</td>
<td>(S/U only.)</td>
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<td>COE 1942</td>
<td>COOPERATIVE EDUCATION, 3RD TRAINING PERIOD</td>
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<td>PR: COE 1941</td>
<td>(S/U only.)</td>
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<td>COOPERATIVE EDUCATION, 4TH TRAINING PERIOD</td>
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<td>PR: COE 1942</td>
<td>(S/U only.)</td>
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<td>COE 1944</td>
<td>COOPERATIVE EDUCATION, 5TH TRAINING PERIOD</td>
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<td>COE 1946</td>
<td>COOPERATIVE EDUCATION, 7TH TRAINING PERIOD</td>
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<td>PR: COE 1945</td>
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<td>COE 1947</td>
<td>COOPERATIVE EDUCATION, 8TH TRAINING PERIOD</td>
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<td>PR: COE 1946</td>
<td>(S/U only.)</td>
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UNDERGRADUATE COURSES

CCJ 2030 MAN, CRIME, AND SOCIETY
Designed to give the undergraduate non-major a non-technical survey of the American criminal justice system. The nature of crime, law enforcement, and the court system, and correctional practices and institutions will be covered. Not for major credit.

CCJ 3020 SURVEY OF CRIMINAL JUSTICE SYSTEM
PR: PSY 2012, SOC 2000, or equivalent or CI. An introduction to the major institutions associated with criminal justice, their structure, personnel, objectives, resources, and operation. Course content also includes developing an understanding of criminal law, terminology and procedure. This course is designed to provide a broad overview of the activities, language, concepts and career opportunities of the entire Criminal Justice System. The course may include an exploratory project, encouraging the student to use his or her own initiative to explore, observe and interview in one or more local institutions of criminal justice.

CCJ 3280 LEGAL FOUNDATIONS OF CRIMINAL JUSTICE
PR: CCJ 3020, POS 2041 or CI. Content of this course examines the effects upon the criminal justice system of the freedoms of habeas corpus, bills of attainder and ex post facto. Thereupon, the course follows the accused through the paths of criminal justice from arrest, to pretrial procedures, to the court and ultimately through corrections.

CCJ 3610 CHARACTERISTICS OF THE OFFENDER
PR: Junior standing plus CCJ 3620 or CI. A four-course series focusing on those individuals being processed through the criminal justice system. Each course will examine the characteristics of a special offender group (e.g., adult, juvenile, victimless), its impact on the system, and the system's potential to change this class of offender behavior patterns. (May be taken with different subject matter up to 16 hours.)

CCJ 3620 NATURE OF CRIME
PR: CCJ 3020. This course is designed to provide a basic understanding of the complex factors related to crime in America. Focus will be centered on reviewing the basic issues, scope, and costs stemming from criminal activities.

CCJ 4110 THEORY AND PRACTICE OF LAW ENFORCEMENT
PR: Junior standing plus CCJ 3280 or CI. Designed to provide an in-depth summary of current philosophies and techniques used in the field of law enforcement with special attention given to the roles of law enforcement officers. Attention will be given to the new experimental programs and techniques.

CCJ 4130 THE LAW ENFORCEMENT OFFICER AND THE COMMUNITY
PR: Junior standing plus CCJ 4110 or CI. This course examines the area of human relations as it applies to police functions within the community. Topics of prejudice and discrimination are emphasized.

CCJ 4330 THE PROBATION AND PAROLE PROCESS
PR: Junior standing plus CCJ 4360 or CI. The concepts of probation and parole will be thoroughly explored and related to actual and potential treatment situations.
CCJ 4934 SEMINAR IN CRIMINAL JUSTICE (3-5)
PR: Senior standing and CI. The seminar (multicourse series, variable topics) will consider the various changes occurring in the field of criminal justice with added emphasis placed on the responsibilities of careers in the field. (May be taken with different subject matter up to 12 hours.)

CCJ 4940 INTERNSHIP FOR CRIMINAL JUSTICE MAJORS (3-12)
PR: Senior standing. The internship will consist of placement with one or more of the agencies comprising the criminal justice system. This course will enable the students to gain meaningful field experience related to their future careers. Each three-hour block of credit will require a minimum of ten hours of work per week within the host agency in addition to any written work or reading assignments. See requirements for the B.A. degree in Criminal Justice for the number of hours required. (S/U only.)

GRADUATE COURSES

CCJ 6135 URBAN POLICE PROBLEMS (3)
This course addresses itself to the major problems confronting urban police departments. Areas of concentration will be racial tensions, police corruption, politicization, etc. May be repeated up to 9 hours.

CCJ 6285 LAW AND CRIMINAL JUSTICE (4)
An exposition of historical and contemporary legal principles, procedures and issues as reflected in Constitutional provisions, statutes and case law.

CCJ 6345 CORRECTIONAL TREATMENT METHODS (3)
Designed to acquaint the beginning graduate student with general conditions, skills and techniques required in order to provide satisfactory treatment for both adult and juvenile offenders. Emphasis will be placed on familiarizing the student with those factors and conditions which facilitate treatment and the goals of treatment in a community correctional setting. In addition, several specific and widely used treatment approaches will be extensively covered and practiced during this course. May be repeated up to 9 hours.

CCJ 6405 POLICE ADMINISTRATION (3)
This course is designed to cover the major elements of urban police administration including personnel selection and promotion, program development, and management techniques. May be repeated up to 9 hours.

CCJ 6455 COMMUNITY CORRECTIONAL ADMINISTRATION (3)
This course consists of an analysis of the complex issues and controversies related to the development and management of modern community-based corrections programs. May be repeated up to 9 hours.

CCJ 6466 RESOURCE DEVELOPMENT AND ACQUISITION (3)
Required for Planning and Evaluation tract students, optional for others, this course will survey organizations which provide financial assistance to Criminal Justice agencies. In all cases, an analysis of criteria, limitations and availability will be made. Practical experience in proposal planning and submission will be provided.

CCJ 6475 SYSTEMS ANALYSIS IN CRIMINAL JUSTICE (3)
Time will be spent on the design and analysis of both existing and student created systems, with emphasis on the role of system analysis as it applies to management information systems, computer based systems. In addition, attention will be directed to retrieval strategies, reducing work loads, simplification, formatting, form design and control, data organization costs. May be repeated up to 6 hours.

CCJ 6605 THEORIES OF DEVIANCY (4)
An introduction and comparison of major historical and contemporary theories as they relate to the explanation of criminal behavior. Attention will be given to developing, on the part of the student, a frame-of-reference by which he can organize and understand the empirical factors operating in the Criminal Justice System.

CCJ 6705 INTRODUCTION TO RESEARCH AND EVALUATION IN CRIMINAL JUSTICE (4)
PR: CCJ 4700 or equivalent. An introduction to research, evaluation, statistics, data management, and management information procedures. Emphasis will be given to the role of each of these topics as monitors and change agents in criminal justice, particularly in police management and corrections. CCJ 6705 must be completed at least one quarter prior to beginning work on the thesis (CCJ 6971).

CCJ 6709 RESEARCH AND EVALUATION METHODS (3)
A detailed coverage of statistical research and evaluation techniques utilized for research and reporting practices in Criminal Justice. Data management, field experimentation and research methodology will be included as they apply. May be repeated up to 6 hours.

CCJ 6725 CORRECTIONAL PLANNING (3)
This course will provide the student with an in-depth examination of urban correctional planning processes. Topics included will deal with the development of personnel, budgets, and facility plans and their implementation. May be repeated up to 9 hours.

CCJ 6726 URBAN POLICE PLANNING (3)
This course will examine contemporary law enforcement planning and will focus on techniques and skills required to forecast future needs of police agencies in rapidly expanding metropolitan areas. May be repeated up to 9 hours.

CCJ 6910 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. A maximum of five hours may be counted toward the minimum number of hours required by the department for the master's degree. (S/U only.)

CCJ 6920 PRO SEMINAR IN CRIMINAL JUSTICE (1-10)
One hour is required for all students. This variable topic listing is a forum primarily for the presentation and discussion of ethical and research ideas by faculty, guests, and students to aid students in linking theory and research, in understanding contemporary, problem oriented research and in developing thesis subjects. Any issue of professional concern may be treated. May be repeated up to five hours. At least one hour should be taken during the first quarter in the program.

CCJ 6930 SEMINAR IN URBAN LAW ENFORCEMENT (3)
Designed to provide an in-depth review of contemporary issues and problems as they relate to urban police administration. May be repeated up to 9 hours.

CCJ 6933 SEMINAR IN COMMUNITY CORRECTIONS (3)
This course will provide a mechanism by which staff and students can focus on the latest events, issues, and problems confronting community corrections programming. May be repeated up to 6 hours.

CCJ 6935 TOPICS IN CRIMINAL JUSTICE (3-6)
PR: Graduate standing in the Criminal Justice Program. The field of criminal justice is characterized by a wide variety of issues and controversies that are of topical concern. This seminar provides a forum for analyzing and discussing these topics as their importance and the accumulation of data warrants. Classics in the criminal justice literature may be included among the topics for treatment in this course. May be repeated with different subject matter.

CCJ 6946 GRADUATE PRACTICUM IN CRIMINAL JUSTICE* (1-4)
* Practicum is required of all students who are not selected for or who choose not to participate in the alternative one-year internship. To be completed during the second year in the program.
selected by the student in consultation with his committee. This placement will enable the student to gain high level field experience related to their chosen career field. A minimum of 24 graduate hours in Criminal Justice must be completed prior to enrollment. (S/U only.)

CCJ 6947 CRIMINAL JUSTICE INTERNSHIP* (12)
The internship will place the student in a criminal justice position commensurate with his skills so that he may be able to blend theory with experience. Placement, which will be full-time for one year, will be worked out between the agency, the student, and the student's committee. All graduate academic course work must be completed prior to enrollment. (S/U only.)

CCJ 6971 THESIS: MASTER'S (var.)
PR: CCJ 6705. Repeatable. A maximum of nine hours may be counted toward the minimum number of hours required for the Master's degree. (S/U only.)

DANCE

Chairperson: N. B. Cole (Interim); Professor: W. G. Hug; Associate Professors: N. B. Cole, C. Robinson; Assistant Professors: R. J. Sias, M. Starbuck; Lecturer: G. Schreiner.

UNDERGRADUATE COURSES

DAA 2160 BEGINNING MODERN (3)
PR: Admission by audition. Study of basic principles of modern dance technique. Practical work in beginning exercises and movement phrases, utilizing changing rhythms and dynamics. May be repeated.

DAA 2200 BEGINNING BALLET (3)
PR: Admission by audition. Basic positions and fundamental barre exercises. Stress on correct alignment of the body and the application of simple step combinations in centre work. The use of ballet vocabulary (French terms). Material is covered almost totally as practical work in class with a few outside projects. Concert and performance attendance required. May be repeated.

DAA 2700 CHOREOGRAPHY I (3)
Study and execution of basic principles of improvising. Preparation of studies in theme and variations, breath phrases and metric phrases. May be repeated.

DAA 3161 INTERMEDIATE MODERN (4)
PR: Admission by audition. Continuation of DAA 2160. 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.

DAA 3201 INTERMEDIATE BALLET (4)
PR: Admission by audition. Continuation of DAA 2200. Intensification of barre exercises for the development of strength and form. Centre exercises to develop quickness of mind/body coordination. Most of the ballet steps are introduced. Application of phrasing and quality of movement. Adagio, pirouettes, and allegro are specifically stressed. Material covered as practical work in class with a few outside projects, concerts, and performances. Rehearsal hours to be arranged. May be repeated.

DAA 3220 BALLET VARIATIONS (1-3)
PR: DAA 3201. This course introduces fundamental exercises for the development of pointe technique. Material covered may also be pas de deux, character, and variations. Must be repeated for a total of 6 hours by majors in ballet concentration. May be repeated.

DAA 3502 JAZZ DANCE (2)
PR: DAA 3161 or DAA 3201 or CI. A technique class with an emphasis on highly stylized, percussive movement on a strong rhythmic base. Required is the performance of a short dance sequence encompassing these skills. May be repeated.

DAA 3701 CHOREOGRAPHY II (3)
PR: DAA 2700 or CI. Preparation of studies in rhythm, dynamics, form and motivation, culminating in a solo. May be repeated.

DAA 4162 ADVANCED MODERN (5)
PR: Admission by audition. Continuation of DAA 3161 on an advanced level. Work in improvisation and individual invention creating an awareness of many possibilities of movement. Intensive work on the growth of personal performance styles as a means of 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. Must be repeated for a minimum of 20 hours by the student concentrating in Modern Dance. May be repeated.

DAA 4202 ADVANCED BALLET (5)
PR: Admission by audition. Continuation of DAA 3201. Perfecting the execution of barre work including body alignment, quality of movement, strength, form, quickness of mind and alertness. Intensification of centre work. More stress on aesthetic quality of movement and phrasing. Perfecting the execution of classical ballet technique and a continuing awareness of performing projection and audience communication for those with professional performing career in mind. Complete background and knowledge of the classical ballet techniques required. Students expected to be proficient in pointe work. Material covered as practical work in class with a few outside projects, concerts, and performances. Rehearsal hours to be arranged. Must be repeated for a minimum of 20 hours by the student concentrating in Ballet. May be repeated.

DAA 4702 CHOREOGRAPHY III (3)
PR: DAA 3701 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. Lec.-lab., reading. May be repeated.

DAA 4703 CHOREOGRAPHY IV (3)
PR: DAA 4702. The student will prepare studies based on free form, minimal art, and chance methods. Lec.-lab., reading. May be repeated.

DAN 3100 INTRODUCTION TO DANCE (3)
For non-dance majors, a study of the art of dance. Lecture and activities including Modern, Ballet, Jazz, Ethnic and Tap. DAN 3100 may be used for University General Distribution Requirement by the non-major, and may be used to satisfy part of the 9 hour in-College Requirement for Fine Arts Majors in Art, Music and Theatre.

DAN 3110 WORLD HISTORY OF DANCE (3)
Study of the development of dance from its inception through the Middle Ages. Reading, lecture.

DAN 3710 REPERTORY (1)
The development and performance of solo and/or group dances. Open to all University students by audition. May be repeated.

DAN 3603 MUSIC FOR DANCE (3)
Development of practical music skills in relation to dance. Emphasis on rhythm and the relationship of music forms to dance. May be repeated up to 6 credit hours.

DAN 4120 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.

DAN 4151 HISTORY OF 20TH CENTURY BALLET (3)

DAN 4170 DANCE SENIOR SEMINAR (3)
PR: Senior or CC. To aid majors to understand, appraise and perfect their own art and technique through critical and aesthetic judgements of their colleagues.
Course of study and credits must be assigned prior to registration. May be repeated.

**EDUCATION**

- **ARE 4112 ART MEDIA FOR CHILDREN**
  - An in-depth study of arts and craft media for children. Emphasis will be placed on innovative use of new materials.

- **ARE 4260 SEMINAR IN ART EDUCATION ADMINISTRATION**
  - PR: Admission to College of Education and ARE 4304. The concepts and areas of skill essential to successful practice in art education management. To include understanding of how art programs are funded, art facility planning, art curriculum development, art exhibition techniques, public relations promotion and supply and equipment requirements.

- **ARE 4411 EXPERIMENTAL FILMMAKING FOR CHILDREN**
  - A study of basic experimental film techniques and laboratory experiences with children in the schools, community centers, and non-school arts programs.

- **ARE 4440 ART TEACHING STRATEGIES AND MEDIA WORKSHOP II**
  - PR: Admission to College of Education and ARE 3044. Media and the learning process as a means of self-expression will be explored. Media experience in sound exploration, visual exploration through photographic arts, cinematography and video-television systems. Exploration of local business and industrial technology for developing experimental media forms. Designing of teaching strategies for creative media experiences as well as media in criticism to include application at elementary and secondary levels.

- **ARE 4443 CRAFTS WORKSHOP IN ART EDUCATION**
  - PR: Admission to College of Education and ARE 3044. The study of processes and media involved in the expression of individual ideas through crafts. Emphasis placed on crafts in a contemporary society with skills in metals, weaving, fibers, and ceramics and their application in a public school curriculum.

- **ARE 4600 URBAN ENVIRONMENT ARTS WORKSHOP**
  - PR: Admission to College of Education and ARE 3044. Identification, exploration, and experimentation with unique urban spaces and populations as potential new environments for teaching and learning in arts.

**GRADUATE COURSES**

- **ARE 5323 ADMINISTRATION AND SUPERVISION OF ART EDUCATION**
  - Principles of administration and supervision of art programs in the school.

- **ARE 6706 RESEARCH SEMINAR IN ART PROGRAM**
  - PR: ARE 6844 or CI. Literature and research in art education. Various approaches to problem solving and evaluation with emphasis on individual research.
EDG 6844 HISTORICAL AND PHILOSOPHICAL FOUNDATION OF ART EDUCATION  (4)
Past and contemporary philosophies and practices in art education.

EDG 6944 FIELD WORK IN ART EDUCATION  (2-6)
For students with degree-seeking status. Supervised participation in activities related to art education in community centers, non-school arts program, planned workshop and research.

Curriculum

UNDERGRADUATE COURSES

EDG 1300 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. (S/U only.)

EDG 4200 CURRICULUM AND INSTRUCTION  (5)
PR: EDF 3214 and EDF 3604, and admission to a teacher education program. Structure and purposes of curriculum organization with special emphasis on the quality of curriculum. Students enrolled in EDG 4200 are required to spend six hours a week in public schools as pre-interns in addition to regular class hours.

EDG 4901 DIRECTED READINGS  (1-4)
May be repeated for a total of 4 quarter hours.

EDG 4905 INDEPENDENT STUDY  (1-5)
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated when subjects vary. (S/U only.)

EDG 4909 DIRECTED STUDY  (1-4)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

EDG 4910 INDIVIDUAL RESEARCH  (1-4)
PR: Senior standing and consent of program coordinator.

EDG 4936 SENIOR SEMINAR IN EDUCATION  (3)

EDG 4940 INTERNSHIP  (1-12)
One full quarter of internship in a public or private school. Intern 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 from 9 to 12 quarter hours. (S/U only.)

GRADUATE COURSES

EDA 6061 PRINCIPLES OF EDUCATIONAL ADMINISTRATION  (5)
Educational administration as a profession. Consideration is given to organization, control, and support of the educational system.

EDA 6106 ADMINISTRATIVE ANALYSIS AND CHANGE  (4)
A competency based course on the application of function analysis, the Critical Incident technique and the Delphi technique to the identification, assignment, and evaluation of administrative tasks within selected organizational settings.

EDA 6232 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.

EDA 6242 SCHOOL FINANCE  (4)
PR: EDA 6061 or CI. Support of public education by local, state, federal sources, with emphasis on Florida; foundation program models; introduction to educational budgeting.

EDA 6243 SCHOOL FISCAL RESOURCE ALLOCATION  (4)
PR: CI. Concepts and practices in allocation and accountability of financial resources in the schools. The use of systems concepts in school budgeting, including prioritizing of alternatives, PPRs and zero-based budget techniques, school-based management allocation models. Also available in workshop version. Available to majors and non-majors.

EDA 6262 PLANNING EDUCATIONAL FACILITIES  (4)
PR: CI. Study of problems in the planning, construction, and utilization of educational facilities. Visitation and or evaluation of selected school plants.

EDA 6910 DIRECTED RESEARCH  (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

EDA 6931 CASE STUDIES IN SCHOOL ADMINISTRATION  (4)
PR: Consent of the program and/or EDA 6061. Case studies presented are designed to help prospective administrators think through various administrative problems, identify feasible solutions, and critically examine the decisions that are made. The skill of decision making is an integral focus of the course.

EDA 6945 ADMINISTRATION PRACTICUM  (4-10)
PR: Completion of a significant amount of the student's program. Field experiences in school systems for the purpose of identifying and analyzing educational problems. Application of concepts developed in the student's program to the solution of these problems.

EDE 5391 CREATIVE PROBLEM SOLVING FOR THE CHILD  (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.

EDG 5691 CURRICULUM AND INSTRUCTION: ELEMENTARY OR SECONDARY  (5)
Curriculum scope, sequence and interrelationships, with a critical evaluation of current trends.

EDG 5925 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. (S/U only.)

EDG 6205 THEORETICAL ISSUES IN CURRICULUM AND INSTRUCTION  (4)
PR: 8 quarter hours at the graduate level in the Foundations 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.

EDG 6251 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.

EDG 6906 INDEPENDENT STUDY  (var.)
Independent study in which students must have a contract with an instructor. Repeatable. (S/U only.)

EDG 6931 SELECTED TOPICS IN EDUCATION  (1-5)
PR: Graduate Standing and CI. Each topic is a course under the supervision of a faculty member. The title and content will vary according to the topic.

EDG 6947 INTERNSHIP  (1-9)
PR: CI. Open to graduate degree candidates only. Supervised teaching at the secondary or junior college level as appropriate. (S/U only.)

EDG 6971 THESIS: MASTER'S  (var.)
Repeatable. (S/U only.)
EDG 7910 DIRECTED RESEARCH
PR: GR. Ph.D. level. Repeatable. (S/U only.)

EDG 7931 SELECTED TOPICS
PR: CC. Selected topics in advanced Education. May be repeated for credit to a maximum of 15 hours.

EDG 7937 GRADUATE SEMINAR
PR: CC. Seminar in advanced Education. May be repeated for credit to a maximum of 15 hours.

EDG 7980 DISSERTATION: DOCTORAL
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

EDS 6050 PRINCIPLES OF EDUCATIONAL SUPERVISION
PR: Courses in general curriculum. Instructional leadership with emphasis on organization for curriculum improvement and in-service growth for professional school personnel.

EDS 6239 PROBLEMS IN SUPERVISION:
SECONDARY
PR: Consent of the program and/or EDS 6050. The analysis of instructional problems in schools. Emphasis of the course is directed to supervisory tasks, case studies, and the application of problem solving techniques and strategies.

ESE 6306 SUBJECT SPECIALIZATION PLANNING
SECONDARY
Individually planned course in a secondary school subject area for in-service teachers.

LAE 5131 CURRICULUM PLANNING AND DEVELOPMENT IN SECONDARY ENGLISH
PR: Certification in English or Mass Communications. Examination of new curricular policies and procedures relating to the teaching of English in the secondary school.

LAE 5137 CURRICULUM EVALUATION IN SECONDARY ENGLISH
PR: Certification in English or Mass Communications. Examination of new evaluation policies and procedures relating to curricula in English in the secondary school.

Elementary Education

UNDERGRADUATE COURSES

ARE 4313 ART FOR THE CHILD
PR: Admission to College of Education. Art and the intellectual, creative, emotional, and aesthetic growth of children.

EDE 4301 TEACHING METHODS IN THE ELEMENTARY SCHOOL
PR: Admission to the College of Education. Suggested corequisite: EDG 4200. Process of teaching elementary school subjects. To be taken quarter prior to internship. Six hours per week as pre-intern in public schools required.

ECC 2001 INTRODUCTION TO EARLY CHILDHOOD EDUCATION
An overview of early childhood education with emphasis on its historical development, current theories, and practices.

ECC 4203 PROGRAMS IN EARLY CHILDHOOD EDUCATION
PR: Admission to College of Education. A study of school programs for children ages 3-8. Analysis and evaluation of these programs in the light of the most effective current classroom practices. Observation and participation included.

ECC 4303 CREATIVE EXPERIENCES IN EARLY CHILDHOOD EDUCATION
PR: Admission to College of Education. The development of the child's creative expression through art, music, dance, play, and drama; included are the materials content, and teaching techniques.

EEC 4706 LANGUAGE AND LEARNING IN EARLY CHILDHOOD
PR: Admission to College of Education. The study of the acquisition of language in young children and the development of basic communications skills in the Language Arts Curriculum, infancy through age 8 years.

HLP 4460 HEALTH AND PHYSICAL EDUCATION FOR THE CHILD
PR: Admission to the College of Education. A study of the importance of movement competency and its contribution to the development of a positive self-concept in children; content and methodology for developing appropriate movement experiences for children; content and methodology for teaching elementary health science.

LAO 4314 LANGUAGE ARTS FOR THE CHILD
PR: Admission to College of Education. Speaking, writing, reading and listening experiences of children and ways these skills are developed for individual creative expression.

LAO 4414 LITERATURE FOR THE CHILD
PR: Admission to College of Education. History and development of children's literature. Study of bibliographic sources, criteria and techniques for selection and use.

MAE 4314 TEACHING ELEMENTARY SCHOOL MATHEMATICS
PR: Admission to College of Education, Number Systems, Basic Algebraic Concepts, Informal Geometry, or equivalent, and a passing score on the College of Education Test of Mathematical Competencies. Methods of teaching elementary school mathematics.

MAE 4545 DIAGNOSIS AND TREATMENT OF LEARNING DISABILITIES IN SCHOOL MATHEMATICS
PR: MAE 4314 or equivalent. Presentation and analysis of teaching methods and models appropriate for use with students experiencing learning disabilities in mathematics; supervised conduct of a case study.

MUE 4313 MUSIC FOR THE CHILD: SKILLS
PR: Admission to College of Education. Voice production, music reading, creative composition and some instrumental experience. School song materials used to support this work.

MUE 4315 MUSIC FOR THE CHILD: METHODS
PR: Admission to College of Education & MUE 4313. Music Literature and teaching aids for children including singing, rhythmic, creative, instrumental and listening experiences and their presentation.

RED 4310 READING FOR THE CHILD
PR: Admission to College of Education. Prereading, word recognition, comprehension and basic study skills and various reading approaches and reading interests; in-school work required.

SCE 4310 SCIENCE FOR THE CHILD
PR: Admission to College of Education and completion of General Distribution Requirement in the Natural Science area. Techniques and materials for teaching science in the elementary school.

SSE 4313 SOCIAL STUDIES FOR THE CHILD
PR: Admission to College of Education and completion of General Distribution Social Science sequence. Significant concepts in the subjects concerned with human relationships. Emphasis upon teaching pupils to solve rather than be engulfed by social problems.

GRADUATE COURSES

ARE 6248 CREATIVE ARTS INSTRUCTION
Creative processes in the teaching of visual arts, music, dance, and drama to elementary school pupils.
LAE 6358 ART FOR THE ELEMENTARY SCHOOL TEACHER
Exploration of various materials and techniques in relationship to current theories about art and the intellectual, creative, emotional and esthetic growth of children.

EDG 6935 SEMINAR IN CURRICULUM RESEARCH
PR: EDF 6481. Critical evaluation of current research and curriculum literature, design and analysis of individual research topics leading to satisfaction of research requirements.

EDS 6930 PROBLEMS IN SUPERVISION
PR: EDF 6481 or equivalent and EDS 6050. Problems in supervising for curriculum improvement within the elementary school.

EEC 5406 SOCIAL GROWTH IN CHILDHOOD
PR: Admission to College of Education. 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 development and the educational programs for the young child.

EEC 5705 DEVELOPMENTAL PROCESSES IN EARLY CHILDHOOD
PR: Admission to College of Education. The normal processes of development among children ages 3-8, the relation between these characteristics and the curriculum: child study through observation required.

EEC 5926 WORKSHOP IN EARLY CHILDHOOD EDUCATION
PR: Admission to College of Education. Individual problems and innovations related to methods and materials of instruction in the early childhood grades.

EEC 6261 ADVANCED PROGRAMS IN EARLY CHILDHOOD EDUCATION
PR: EDF 6431, EEC 4203 or Cl. A study of innovative curriculum designs in Early Childhood Education, with emphasis given to related research.

EEC 6405 HOME-SCHOOL-COMMUNITY INTERACTION IN EARLY CHILDHOOD EDUCATION
PR: EDF 6431, EEC 4203 or Cl. An intensive study of the roles of parents, teacher aides, and community agencies involved in the education of the young child.

LAE 5325 TEACHING METHODS IN THE MIDDLE SCHOOL—ENGLISH LANGUAGE ARTS
PR: Cl. Analysis of nature and communication needs of students in grades 5-8 with emphasis on laboratory methods of teaching language.

LAE 6301 LANGUAGE LEARNING IN CHILDHOOD
PR: Graduate standing in the College of Education. The study of research which has been used to assess the language behavior of normal children. Attention will also be given to the application of selected research methodology to understanding linguistic behavior of children.

LAE 6415 CHILDREN'S LITERATURE IN THE ELEMENTARY CLASSROOM
PR: LAE 4414, Cl. A study of significant concepts, emerging trends and classroom techniques for implementation and utilization of children's literature in all areas of the curriculum.

LAE 6616 TRENDS IN LANGUAGE ARTS INSTRUCTION
PR: LAE 4314 and LAE 4414. Advanced materials and processes of instruction in elementary school language arts programs.

LAE 6617 THEORIES AND PATTERNS OF ADVANCED LANGUAGE ARTS INSTRUCTION
PR: LAE 6616 or equivalent. This course is organized to present new research findings and theories relating to language patterns and contemporary programs designed for teaching the language arts.

LAE 6746 APPLICATIONS OF THEORIES TO THE DEVELOPMENT OF LANGUAGE ARTS PROGRAMS
PR: LAE 6616 or equivalent, LAE 6617. This course is designed to apply research findings and theories for developing and organizing instructional improvement of the language arts.

MAE 6116 CURRENT TRENDS IN ELEMENTARY MATHEMATICS EDUCATION
PR: MAE 4314 or equivalent. Philosophy, content and process of qualitative instruction in modern mathematics in elementary school programs.

MAE 6548 ADVANCED DIAGNOSIS AND TREATMENT OF LEARNING DISABILITIES IN SCHOOL MATHEMATICS
PR: MAE 4314 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; supervised conduct of a case study.

MAE 6549 ADVANCED PRACTICUM IN DIAGNOSIS AND TREATMENT OF LEARNING DISABILITIES IN SCHOOL MATHEMATICS
PR: MAE 6548. Supervised conduct of a case study with a student experiencing learning difficulties in mathematics. Procedures used and reporting practice employed developed in MAE 6548 reviewed and extended.

RED 6116 FOUNDATIONS OF ELEMENTARY READING INSTRUCTION
PR: RED 4310 or equivalent course. Study of approaches, materials, and procedures in Elementary Reading instruction, with emphasis on pertinent research. Not for undergraduate nor to be used as a first course in Reading.

SCE 6616 TRENDS IN SCIENCE INSTRUCTION
PR: SCE 4310. 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.

SSE 6617 TRENDS IN SOCIAL STUDIES INSTRUCTION
PR: SSE 4313. Crucial concepts drawn from the social sciences. Analysis of the problems approach. Students will select an area of independent study on an advanced level.

English Education

UNDERGRADUATE COURSES

EDG 4451 EDUCATION THROUGH DRAMA
A study of the dramatic process as intrinsic in human development, this course is designed to enrich the education of pre-service teachers by providing training in the use of creative drama and related forms of improvised drama in the classroom.

EDG 4452 THEATRE FOR PRE-SECONDARY SCHOOLS: THE PRODUCTION PROCESS
Experiential study of the play production process as it applies to theatre for school audiences. Students will produce a play to be performed the following quarter. Each student will participate in decision-making aspects of production from play selection through dress rehearsal. Students are expected to perform the play during the following quarter as a project of EDG 4453. May be repeated for elective credit two times; once for major credit.

EDG 4453 THEATRE FOR PRE-SECONDARY SCHOOLS: THE PERFORMANCE PROCESS
PR: Completion of EDG 4452 in the quarter immediately preceding this course or permission of the instructor. An experiential study of the artistic process of performing for various school audiences and the practice of conducting in-class workshops related to the performance. Techniques of preparing preperformance and postperformance teacher guidelines and workshop materials will be studied. May be repeated for elective two times; once for major credit.
LAE 4335 METHODS OF TEACHING ENGLISH—LITERATURE AND READING (4)
PR: EDG 4200, LAE 4335, and LAE 4642 are typically taken concurrently. A survey of materials available to adolescent readers plus an overview of organizational strategies for teaching literature and reading.

LAE 4642 CURRENT TEACHING OF ENGLISH LANGUAGE AND MEDIA (4)
PR: Acceptance into College of Education. EDG 4200, LAE 4335, and LAE 4642 are typically taken concurrently. Methods of teaching language and media. Includes current findings on teaching usage, dialect, grammar, and semantics, as well as approaches to media in English.

GRADUATE COURSES

EDF 6455 EDUCATION THROUGH ADVANCED DRAMA (4)
Theories and methods of teaching creative drama and related forms of improvised drama and playmaking with supervised teaching of creative dramatics in a school environment.

LAE 5932 SELECTED TOPICS IN THE TEACHING OF ENGLISH (4)
PR: Certification in English and/or Mass Communications and approval of graduate adviser. Investigation of topics which are of special interest to the student and are related to the teaching of English in the secondary school. Topics will be selected by the student in accordance with his particular goals and will be approved by the student's graduate adviser.

LAE 6336 NEW PERSPECTIVES ON THE TEACHING OF LITERATURE IN SECONDARY SCHOOLS (4)
PR: Certification in English or Mass Communications. Survey of recent investigation into adolescents’ perception of and responses to literature and implications for organization and presentation of literature curricula.

LAE 6637 CURRENT TRENDS IN SECONDARY ENGLISH EDUCATION (4)
Curricular patterns and instructional practices in secondary English.

LAE 6644 CURRENT TEACHING OF THE ENGLISH LANGUAGE (4)
Application of recent techniques of language study to classroom teaching of English, especially in relation to current textbooks.

Exceptional Child Education

UNDERGRADUATE COURSES

EED 4011 BEHAVIOR DISORDERS IN THE SCHOOLS (4)
PR: EDF 3214, EEX 3010, or CI. Survey of emotional and social disorders in children and youth manifested as behavior problems in the classroom; intervention techniques; implications for management techniques in educational programs.

EED 4231 EDUCATIONAL PROGRAMMING FOR CHILDREN AND YOUTH WITH BEHAVIOR DISORDERS (5)
PR: Human Development and Learning, Exceptional Children and Youth, Educational Assessment of Exceptional Children, Behavior Disorders in the Schools and acceptance in the Program for Emotional Disturbance.

EED 4941 UNDERGRADUATE SUPERVISED PRACTICUM IN BEHAVIOR DISORDERS (4)
PR: Acceptance in the undergraduate program for Emotional Disturbance. Exceptional Children and Youth and Behavior Disorders in the Schools may be taken concurrently. Supervised undergraduate practicum experiences with children and youth with behavior disorders. A one hour per week seminar is required concurrent with practicum. May be repeated up to 12 hours.

EEX 3010 EXCEPTIONAL CHILDREN AND YOUTH (4)

EEX 4221 EDUCATIONAL ASSESSMENT OF EXCEPTIONAL CHILDREN (4)
PR: EDF-3214, EEX 3010, EMR 3011 or EED 4011 or ELD 4011 and an Exceptional Child Education major. Introduction to and familiarization with formal and informal techniques used to measure and evaluate all exceptional children. The interpretation of information so derived for utilization in educational programming and individualization of instruction. Lec-lab.

EGI 3011 INTRODUCTION TO GIFTED CHILDREN (4)
PR: Junior class standing. Diagnosis, characteristics, and educational provision of the gifted and talented.

EGI 3941 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.

ELD 4011 THEORIES IN SPECIFIC LEARNING DISABILITIES (4)
PR: EEX 3010. Characteristics, needs and abilities of children with specific learning disabilities. Emphasis is on theories, issues, trends, and philosophy of problems for such children.

ELD 4110 SKILLS IN DIAGNOSIS AND INSTRUCTION FOR CHILDREN WITH SPECIFIC LEARNING DISABILITIES (4)
PR: Theories in Specific Learning Disabilities and a Specific Learning Disabilities major.

ELD 4944 UNDERGRADUATE SUPERVISED PRACTICUM IN SPECIFIC LEARNING DISABILITIES (6)
PR: EEX 3010, ELD 4011, ELD 4110 and major in Specific Learning Disabilities. Supervised practicum experiences in classes for children with specific learning disabilities. Practicum experiences are provided on the Tampa Campus in the Specific Learning Disabilities Clinic.

EMR 3011 INTRODUCTION TO MENTAL RETARDATION (4)
PR: EEX 3010. Introduction to the classification, diagnosis, characteristics, and treatment of the mentally retarded.

EMR 3800 UNDERGRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION (2-6)
PR: EMR 3011 and major in Mental Retardation. Supervised Practicum experiences in the educational, social and vocational programming for mentally retarded individuals. A one hour per week seminar is required concurrently. May be repeated up to 6 credit hours.

EMR 4310 PROCEDURES AND MATERIALS FOR ELEMENTARY AGE EDUCABLE MENTALLY RETARDED CHILDREN (4)
PR: EMR 3011 and an Exceptional Child Education major. Special class organization, curriculum development, procedures and materials for elementary age educable mentally retarded children.

EMR 4313 PROCEDURES AND MATERIALS FOR SECONDARY AGE EDUCABLE MENTALLY RETARDED YOUTH AND ADULTS (4)
PR: EMR 3011 and Exceptional Child Education major. Special class organization, curriculum development, procedures and materials for secondary age educable mentally retarded youth and adults.
EMR 4321 EDUCATIONAL PROCEDURES FOR THE TRAINABLE MENTALLY RETARDED (4)
PR: EMR 3011 and an Exceptional Child Education major. Special class organization, curriculum development, methods and techniques of teaching the trainable retarded.

GRADUATE COURSES
EDG 5734 THE CULTURALLY DISADVANTAGED AND THE SCHOOLS (4)
Characteristics and needs of the culturally disadvantaged and their implications for educational programming.

EDG 6946 FIELD WORK WITH POTENTIALLY HANDICAPPED (CULTURALLY DISADVANTAGED) (1-9)
Teaching and participation in activities related to teaching disadvantaged young children. (N-3)

EED 6201 EDUCATIONAL IMPLICATIONS OF PATHOLOGICALLY DISTURBED CHILDREN AND YOUTH (4)
CR: EED 4011 may be taken concurrently. In-depth survey of mild, moderate and severe behavioral pathologies of children and youth. Includes such topics as autism, schizophrenia, and other neurotic and psychotic disorders. Guided exploration of exemplary services and methodologies.

EED 6211 EDUCATIONAL PROGRAMMING FOR EMOTIONALLY DISTURBED CHILDREN (4)
PR: Acceptance in Master's Degree Program in Emotional Disturbance, EED 6201, EED 6221, EEX 6201. Advanced methods and materials in planning and implementing appropriate educational interventions with disturbed students.

EED 6221 MANAGEMENT METHODS AND TECHNIQUES FOR DISTURBED CHILDREN IN AN EDUCATIONAL SETTING (4)
PR: EDF 6217 or EED 6201, graduate standing. Management methods with disturbed children in an ongoing educational setting. Includes behavior modification, reality therapy, psychodynamic interventions, and humanistic approaches. Basic evaluation techniques of intervention strategies, including Precision Teaching, are covered. Practical applications are stressed.

EED 6222 PROCEDURES FOR EDUCATING DISTURBED ADOLESCENTS AND YOUTH (4)
PR: EDF 5136, EED 6201, EED 6221. Procedures in implementing educational programs for the disturbed adolescent including community resource utilization, educational programming, advocacy, and alternative programs.

EED 6943 SUPERVISED PRACTICUM IN EMOTIONAL DISTURBANCE (1-14)
PR: EED 6201 may be taken concurrently, and acceptance in Master's Degree Program in Emotional Disturbance. Supervised graduate practicum experiences with emotionally disturbed children. A one hour per week seminar is required concurrent with practicum.

EEX 6201 PSYCHO-EDUCATIONAL APPRAISAL OF EXCEPTIONAL CHILDREN (4)
PR: EEX 3010 or EEX 6936, EDF 6431, EEX 4221. Educational planning for exceptional children based on diagnostic information. Includes both lectures and practicum experiences in evaluative and instructional techniques for exceptional children.

EEX 6303 ADVANCED EDUCATIONAL PROCEDURES FOR THE MENTALLY RETARDED (4-8)
PR: EMR 4310 or EMR 4321. Specific curriculum and methodological problems in teaching the retarded.

EEX 6511 ADMINISTRATION OF EXCEPTIONAL CHILD PROGRAMS (4)
PR: CI. Procedure which local, state, and national administrators may use to implement services for exceptional children.

EEX 6732 GUIDANCE AND COUNSELING OF EXCEPTIONAL CHILDREN AND THEIR PARENTS (5)
PR: EEX 6936 and CI. Investigation of the guidance needs of exceptional children and parents. Through child study techniques, opportunities will be provided for the development of skills in guiding parents of exceptional children in providing assistance/support in their total development and use of potential.

EEX 6936 SEMINAR IN EXCEPTIONAL CHILD EDUCATION (4)
A critical survey of the literature related to the psychological, sociological, and education problems of exceptional children.

EEX 7203 EDUCATIONAL IMPLICATIONS OF PSYCHOSOCIAL ASPECTS OF EXCEPTIONAL CHILDREN (1-8)
PR: CI. This course will be concerned with the identification of the psycho-social needs and characteristics of exceptional children. Opportunity will also be given to the analysis of the educational implications of these needs and characteristics. May be repeated for a maximum of 8 hours.

EEX 7301 SELECTED TOPICS IN EXCEPTIONAL CHILD EDUCATION (1-12)
PR: EEX 7314 or CI. Identification and specification of a research problem in special education. Opportunity will be provided for the student to gather and process data, culminating in a written report and/or oral presentation to fellow student researchers. May be repeated for a maximum of 12 hours.

EEX 7341 RESEARCH STUDIES AND THEIR IMPLICATIONS IN THE EDUCATION OF EXCEPTIONAL CHILDREN (5)
PR: EDF 6431, EDF 6481 or equivalent CI. This course will involve a study of current research in exceptional child education. The transition from theory into practice will be made through the examination and discussion of implications to the field of special education that can be drawn from the research.

EEX 7741 PHILOSOPHY AND PROCESS IN THE PREPARATION OF SPECIALISTS IN EXCEPTIONAL CHILD EDUCATION (4)
PR: Admission in the Program for E.D.S. and Ph.D. in Education. In-depth exploration of the philosophy and theory in special education. A theoretical basis for the preparation of specialists in the field of exceptional child education.

EEX 7841 FIELDWORK WITH EXCEPTIONAL CHILDREN (1-8)
PR: CI. Practical field experience in curriculum development, classroom teaching, supervision and/or administrative areas in special education. May be repeated for a maximum of 8 hours.

EEX 7911 SPECIALIZED STUDY IN: MENTAL RETARDATION, EMOTIONAL DISTURBANCE, SPECIFIC LEARNING DISABILITIES, AND GIFTED EDUCATION (1-12)
PR: CI. Exploration and demonstration of knowledge in an area of interest to the student in special education. The specialized study may also include areas for which the student needs to demonstrate a higher level of competency. May be repeated for a maximum of 12 hours.

EEX 7930 SEMINARS IN EXCEPTIONAL CHILD EDUCATION (1-10)
PR: Preliminary Admission to the Graduate Program and CI. Seminar Topics will vary to include neurophysiological mechanisms, current trends, issues, and curriculum development in Special Education. May be repeated for a maximum of 10 hours.

EGI 5051 NATURE AND NEEDS OF THE GIFTED (4)
Characteristics and educational needs of gifted children and youth.

EGI 5232 EDUCATIONAL PROCEDURES FOR THE GIFTED (4)
PR: EGI 5051 or CI. Curriculum adjustments, methods and techniques, classroom organization necessary for teaching the gifted.
EGI 5942 SUPERVISED PRACTICUM FOR THE GIFTED (1-14)
Planned supervised participation in activities related to specific areas of the gifted.

EGI 6936 SEMINAR IN EDUCATION OF THE GIFTED: RECENT RESEARCH (4)
A critical survey of the literature related to the psychological and educational problems of gifted children.

EGI 6937 SEMINAR IN EDUCATION OF THE GIFTED: PROGRAMS (4)
A survey of existing programs for the gifted and evaluation of relevant literature. Individual students will plan and present a model program for the gifted.

ELD 6115 ADVANCED ASSESSMENT AND PROCEDURES FOR SPECIFIC LEARNING DISABILITIES CHILDREN (4)
PR: CI. Concepts related to the assessment and teaching of specific learning disabled children.

ELD 6141 CURRENT TRENDS AND ISSUES RELATED TO EDUCATING SPECIFIC LEARNING DISABILITIES CHILDREN (4)
PR: CI. Trends and issues related to educating children with specific learning disabilities.

EMR 5012 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.

EMR 5803 GRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION (1-14)
Supervised graduate practicum encompassing teaching and supervising experiences in public school classes for the mentally retarded.

EMR 6932 BIOLOGICAL ASPECTS OF MENTAL RETARDATION (4)
PR: EMR 3011 or CI. The contribution of biological factors towards the causation of mental deficiency; implications for casefinding, care, and education.

EMR 6934 SOCIOLOGICAL AND EDUCATIONAL ASPECTS OF MENTAL RETARDATION (4)
PR: EEX 3010 or EES 6936. Evaluation of relevant literature.

EMR 6936 CURRENT TRENDS AND ISSUES IN THE EDUCATION OF EXCEPTIONAL CHILDREN (4)
Survey of current trends and issues related to the education of exceptional children.

EPI 5051 EDUCATIONAL PROBLEMS OF THE PHYSICALLY HANDICAPPED (4)
PR: EEX 3010 or CI. Introduction to the educational, psychological and social problems of the physically disabled child in the public schools.

EPI 5321 TEACHING THE CEREBRAL PALSYED CHILD (4)
PR: EEX 3010 or CI. Introduction to the educational, psychoaspects of cerebral palsy and its implications for classroom teachers.

EVI 5311 THE VISUALLY HANDICAPPED IN THE CLASSROOM (4)
PR: EEX 3010 and CI. The visually handicapped in the classroom, structure, hygiene and educational implications.

Foreign Language Education

UNDERGRADUATE COURSES

FLE 4333 TEACHING METHODS IN THE SECONDARY SCHOOL-FOREIGN LANGUAGE (4)
PR: EDG 4200 or CR in EDG 4200. Techniques and materials of instruction in foreign languages. To be taken in the quarter prior to internship.

GRADUATE COURSES

FLE 6665 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.

Foundations

UNDERGRADUATE COURSES

EDF 3210 EDUCATIONAL PSYCHOLOGY (4)
PR: Upper level standing. The application of behavioral principles to human behavior in educational institutions, home and community settings. May not be counted for EDF 3214. (For non-education majors only.)

EDF 3214 HUMAN DEVELOPMENT AND LEARNING (4)
PR: General Psychology and admission to College of Education or CC. Application of respondent and operant learning principles to classroom learning, teaching models for different instructional goals, analysis of teacher behavior, micro-teaching.

EDF 3228 BEHAVIOR MODIFICATION TECHNIQUES (5)
PR: EDF 3214. Special techniques in behavior modification for children with learning difficulties. Minimum of two hours field experience per week required in addition to regular class hours.

EDF 3430 INTRODUCTION TO MEASUREMENT AND EVALUATION (4)
PR: Upper level standing. Elementary concepts basic to a general understanding of measurement and evaluation procedures.

EDF 3542 PHILOSOPHY OF EDUCATION (4)
PR: Upper level standing. 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 reality, knowledge and value.

EDF 3554 VALUES CLARIFICATION FOR TEACHERS (4)
PR: Junior standing recommended. Techniques for teachers in identifying and analyzing values and value orientations of individuals and groups of students in the school.

EDF 3604 SOCIAL FOUNDATIONS OF EDUCATION (4)
PR: Admission to College of Education, 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 3214.

EDF 3710 COMPARATIVE EDUCATION (4)
PR: Upper level standing. A comparison of contemporary educational systems of selected countries with that of the United States.

EDF 4801 WOMEN AND THE EDUCATIONAL PROCESS (4)
PR: Junior standing recommended. Covers both the role women played in education in the U.S. and the way schools have helped to shape the role women play in American society. Topics include development of sex-role stereotypes through classroom interactions and curriculum materials, the status of women in public and higher education and laws affecting it, and the role of the schools in forming educational and career aspirations of girls and women. Emphasis will be placed on ways parents and teachers may counteract the sex-typing which schools, as they are currently structured, perpetuate. (Also offered under Women’s Studies.)

GRADUATE COURSES

EDF 5136 ADOLESCENCE (4)
A study of the educational, intellectual, personality, physical,
social and vocational factors in adolescence.

EDF 5285 PROGRAMMED INSTRUCTION AND TEACHING MACHINES
Principles for programming in the several academic subjects.

EDF 5672 AMERICAN DEMOCRACY AND PUBLIC EDUCATION
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 6120 CHILD DEVELOPMENT
PR: EDF 6211 or CI. Educational, emotional, hereditary, intellectual, social and physical factors influencing child growth and development.

EDF 6143 MEASUREMENT OF INDIVIDUAL INTELLIGENCE
PR: EDF 3214 or EDF 6431 or equivalent and a course in educational measurement of statistics. Administration and interpretation of individual measures of intelligence.

EDF 6211 PSYCHOLOGICAL FOUNDATIONS OF EDUCATION
Selected topics in psychology of human development and learning.

EDF 6213 BIOLOGICAL BASES FOR LEARNING AND BEHAVIOR
PR: One course in Educational Psychology. A study of human biological development and its influence upon learning and behavior.

EDF 6215 PRINCIPLES OF LEARNING
A consideration of several theories of learning and related research studies in regard to classroom application.

EDF 6217 BEHAVIOR THEORY AND CLASSROOM LEARNING
PR: EDF 6215 or CI. Theoretical and practical application of behavior modification. Will cover: Introduction into experimental methods, e.g., independent, dependent variables; and internal validity; principles of positive reinforcement; shaping and successive approximations; application of reinforcement (parameters); operant behavior under extinction; operant methods in behavior and development; readings in behavior modification—critical analysis; field work.

EDF 6354 THEORIES OF PERSONALITY FOR SCHOOL PERSONNEL
A comparative and integrated study of personality development according to major psychological theories. Application of the theoretical constructs to education and guidance.

EDF 6431 FOUNDATIONS OF MEASUREMENT
Fundamental descriptive statistics, basic measurement concepts, role of measurement in education, construction of teacher-made tests and interpretation of standardized tests.

EDF 6481 FOUNDATIONS OF EDUCATIONAL RESEARCH
PR: EDF 6431. Major types of educational research, with emphasis upon understanding the experimental method.

EDF 6517 HISTORICAL FOUNDATIONS OF AMERICAN EDUCATION
Historical and comparative problems in American education which are relevant to contemporary issues.

EDF 6544 PHILOSOPHICAL FOUNDATIONS OF AMERICAN EDUCATION
Major philosophies of education which are relevant to an understanding of contemporary educational issues.

EDF 6606 SOCIO-ECONOMIC FOUNDATIONS OF AMERICAN EDUCATION
Significant socio-economic factors as they relate to major problems facing American education.

EDF 7612 PROSEMINAR IN COMPARATIVE EDUCATION
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 6805 WOMEN AND EDUCATION
Course is designed to enable public school personnel, teachers, counselors, administrators and other professionals, to identify those aspects of public education which perpetuate sex role stereotyping. Emphasis will be placed on how the law and formal and informal affirmative action activities can be employed to correct sexism in schools.

EDF 6938 SELECTED TOPICS
PR: CI. Exploration and demonstration of knowledge in an area of special interest to the student and/or in an area for which the student needs to demonstrate a higher level of competence. Defined to fit the needs of each student.

EDF 6944 FIELD EXPERIENCE
PR: CI. Demonstrate skills in the practice of the student's specialty. Specific objectives will be defined according to the needs of the individual student.

EDF 7586 CLASSICS IN EDUCATIONAL RESEARCH
PR: Graduate standing; EDF 6517, EDF 6544, or EDF 6606 or CI. An examination of the context, methodology, and impact of significant research studies in education. Topics will include studies of the Herbartians, J. M. Rice, E. L. Thorndike, G. S. Hall, L. P. Ayers, Willard Waller, the Reading Studies, the Eight Year Study, and School Surveys.

EDF 7610 SCHOOL REFORM
PR: Graduate standing; EDF 6517, EDF 6544, or EDF 6606 or CI. An examination of the history, background, sources, dynamics, and effects of attempts at school reform. Topics will include role of individuals, foundations, legislation, demography, politics, media, and technology as they relate to reform aims and strategies; distinctions between short-term planning for change and the preparation of long-term future strategies.

EDF 7649 ANALYSIS OF EDUCATIONAL ISSUES
PR: Graduate standing; EDF 6517, EDF 6544 or CI, or EDF 6606. An examination and analysis of selected critical issues in public schooling in terms of their axiological, historical, and socio-cultural bases. Includes such topics as: problems of curriculum reform, influence of legislation and court rulings on school teaching and administration, teachers' organizations, and problems of educational support. Emphasis will be placed on ways of conceptualizing and evaluating problems and issues.

EDF 7655 ORGANIZATION DEVELOPMENT IN EDUCATIONAL INSTITUTIONS
PR: Graduate standing; EDF 6517, EDF 6544 or CI, or EDF 6606. The application of social and behavioral science theory to the developmental problems of schools and school systems. Topics include: theory of organization development, concepts of systems analysis, action research techniques, intervention and change concepts and strategies, consultant-client relationships, organization problem diagnosis and solution, plus a survey of resources available for organization development.

EDF 7682 EDUCATION IN METROPOLITAN AREAS
PR: Graduate standing; EDF 6517, EDF 6544 or CI, or EDF 6606. Examination of the school as a formal, socializing institution in relationship to the residential populations found within the metropolitan structure with specific reference to methodologies useful for educational planning. Topics will include an identification of the metropolitan concept; an analysis of metropolitan concepts; an analysis of metropolitan forms, functions, and dynamics; a study of socio-economic structure and ethnic composition of residential populations; and a discussion of the school as a metropolitan institution, interacting with a spectrum of socio-economic and ethnic groups.
Guidance

UNDERGRADUATE COURSES

EGC 4001 INTRODUCTION TO GUIDANCE
PR: Upper level standing. An introduction to the role and function of guidance, school psychology, social work and other pupil personnel services from kindergarten through junior college.

EGC 4053 INTRODUCTION TO STUDENT PERSONNEL WORK IN HIGHER EDUCATION
PR: Cl. Study of student personnel services in institutions of higher education. Identification of the needs of students and of the ways to respond to meet these needs. Survey of service units on a campus, in terms of structure, organization, funding and evaluation of each unit.

EGC 6464 THE APPRAISAL PROCEDES IN GUIDANCE
PR: EDF 6431, EGC 6005. A study of test and non-test techniques of appraisal with emphasis on the use of standardized test data in guidance programs and the use of the individual case study approach.

EGC 6464 THE COUNSELING SERVICE IN GUIDANCE IN ELEMENTARY SCHOOLS
PR: EDF 6354 and EGC 6005. Counterpart of EGC 6435 for prospective secondary school counselors. Counseling viewed as communications through media appropriate to children.

EGC 6507 GROUP PROCEDURES IN GUIDANCE IN SECONDARY SCHOOLS
PR: EGC 6005 and EGC 6435. Group interaction and values of group activity for guidance purposes. Methods and techniques for working with groups.

EGC 6625 ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES IN ELEMENTARY SCHOOLS
PR: EGC 6005. 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.

EGC 6830 PRACTICUM IN ELEMENTARY GUIDANCE COUNSELING AND CONSULTING
PR: CC. This course is the counterpart of EGC 6835 for prospective secondary school counselors. Counseling with children in groups as well as individually; consultations with parents, teachers, administrators, and fellow professionals regarding the children being counseled. (S/U only.)

EGC 6835 PRACTICUM IN SECONDARY SCHOOL GUIDANCE COUNSELING
PR: CC. Final course in guidance program. Supervised practice in working with individuals in counseling relationship. (S/U only.)

EGC 6905 INDIVIDUAL STUDY
PR: Cl. Independent study, research and experiences relating to guidance and pupil personnel services under the supervision of a member of the Guidance Program faculty. (May be repeated for maximum total of 5 hours.)

EGC 6935 SEMINAR IN GUIDANCE
PR or CR: EGC 6005, Cl. Significant issues in the field of guidance; topics for discussion will vary according to needs and interests of students. May be repeated for credit for a maximum of 6 hours. (S/U only.)

Health Education

UNDERGRADUATE COURSES

HES 2000 CONTEMPORARY HEALTH SCIENCE
A comprehensive approach to health concerns and problems in contemporary society, including methods of assessing individual health needs. (S/U only.)

HES 3120 STRUCTURE AND FUNCTION OF THE HUMAN BODY
PR: Admission to the Health Education Program, or Cl. A study of the normal structure and function of the human body. Focus is on the relationship of structure, function, and health status. (S/U only.)

HES 3140 HEALTH EDUCATION AND RELATED HEALTH SCIENCE CONTENT: CHILDREN
PR: Admission to the Health Education Program or Cl. Programs, curriculum, health services, and health education related to health needs and interests of children. (S/U only.)

HES 3141 HEALTH EDUCATION AND RELATED HEALTH SCIENCE CONTENT: PUBESCENCE
PR: Admission to the Health Education Program or Cl. Programs, curriculum, health services, and health education related to health needs and interest of pubescence. (S/U only.)

HES 3244 HEALTH COUNSELING
PR: Admission to the Health Education Program or Cl. A study and application of theory and methods of health counseling. (S/U only.)

HES 3300 PROCESSES AND PROGRAMS IN HEALTH EDUCATION
PR: Admission to the Health Education Program or Cl. Survey of programs in Health Education in the schools and community. Processes in programs and curriculum development will also be emphasized. (S/U only.)

HES 3510 CONSUMER HEALTH
PR: Admission to the Health Education Program or Cl. An investigation of advertising and consumer practices in relation to health care. (S/U only.)
HES 3730 HEALTH ASSESSMENT LABORATORY
PR: Admission to the program or CI. Observation, screening and assessment of common health problems and introduction to resources for health education. Lec.-lab. (S/U only.)

HES 4142 HEALTH EDUCATION AND RELATED HEALTH SCIENCE CONTENT: ADOLESCENTS AND YOUNG ADULTS
PR: Admission to the Health Education Program or CI. A study of health needs, programs, services, and health content areas of adolescents and young adults. (S/U only.)

HES 4143 HEALTH EDUCATION AND RELATED HEALTH SCIENCE CONTENT: ADULTS
PR: Admission to the Health Education Program or CI. A study of health needs, services, and health education programs focusing on adults, including the aging. (S/U only.)

HES 4276 HEALTH CARE DELIVERY SYSTEMS
PR: Admission to the Health Education Program or CI. An investigative study and evaluation of health care delivery systems in the U.S. and other countries. (S/U only.)

HES 4722 CURRENT PROBLEMS IN HEALTH
PR: Admission to the Health Education Program or CI. An investigation of current health problems, programs, and research methods. (S/U only.)

HES 4940I INTERNSHIP IN HEALTH EDUCATION
PR: Admission to the Health Education Program. Supervised internship in the schools with scheduled seminars. (S/U only.)

HES 4943 SEMINAR AND FIELD EXPERIENCE: ADULT HEALTH
PR: Admission to the Health Education Program. Supervised field experiences in adult health programs in schools and the community. (S/U only.)

HES 4944 SEMINAR AND FIELD EXPERIENCE: CURRENT HEALTH PROBLEMS
PR: Admission to the Health Education Program. Supervised field experience in selected health program. (S/U only.)

Humanities Education

UNDERGRADUATE COURSE
HUM 4870 CURRENT TRENDS IN THE TEACHING OF HUMANITIES
Curricular patterns, materials, and instructional practices in the teaching of humanities.

Junior College

GRADUATE COURSES
EDH 6061 THE JUNIOR COLLEGE IN AMERICAN HIGHER EDUCATION
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 6938 SEMINAR IN COLLEGE TEACHING
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, Media, and Information Studies

UNDERGRADUATE COURSES
LIS 2001 USE OF THE LIBRARY
An introduction to the resources of the University of South Florida Library. Emphasis will be placed on library materials germane to the course work of the undergraduate (S/U only.)

LIS 4301 INTRODUCTION TO AV EQUIPMENT AND PRODUCTION
Knowledge of essential communication hardware, including running maintenance. Simple production of materials. Organization and use of materials and equipment.

GRADUATE COURSES
LIS 5315 INSTRUCTIONAL GRAPHICS
PR: CI. Theoretical aspects, planning and production of instructional graphic material. The theory of graphic communications. Interpreting needs for instructional materials appropriate for given behavioral objectives.

LIS 5321 PREPARING SINGLE CONCEPT FILMS
PR: CI. Techniques and procedures in the preparation of educational films. Ascertaining concepts, script writing, graphics, lighting, filming, editing.

LIS 5333 TELEVISION IN THE SCHOOL
Utilization of open and closed circuit broadcasting in the instructional process.

LIS 5404 FOUNDATIONS OF LIBRARIANSHIP
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.

LIS 6110 HISTORY OF LIBRARIES
Development of libraries as found from the earliest records to the great libraries of modern times and the library as a social institution.

LIS 6111 HISTORY OF CHILDREN'S LITERATURE
Historical bibliographical survey of imaginative and informational literature for children.

LIS 6119 CONTEMPORARY PUBLISHING AND PRINTING
PR: LIS 6520. 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 relations between libraries and publishing.

LIS 6203 READING GUIDANCE PROGRAMS IN LIBRARIES AND CLASSROOMS
Working with factors and forces influencing reading habits of children and youth; programs for teaching investigative and library skills; materials and methods for guidance of reading, listening and viewing.

LIS 6225 ADVANCED STORYTELLING
PR: CI or LIS 6586. Building storytelling programs for school and public libraries or other educational institutions. Analysis of historical aspects, material suitable for use and audience reaction.

LIS 6260 INFORMATION SCIENCE IN LIBRARIANSHIP
Historical overview of the emergence of information science as a discipline. The fundamental concepts of information retrieval systems and subsystems, related information technologies, and their applications to the field of librarianship.

LIS 6262 LIBRARY SYSTEMS PLANNING
Application of systems planning and data processing technology to library files. Emphasis on analysis of selected library subsystems.

LIS 6263 SEMINAR IN LIBRARY AUTOMATION
PR: LIS 6260. Seminar in library automation. Representative library automation projects and networks will be studied.

LIS 6271 RESEARCH METHODS IN LIBRARIANSHIP
Overview of present status of research in library and information
science; introduction to research methods and their application to librarianship; designed to prepare students to plan, conduct, and evaluate research relating to the acquisition, classification, cataloging, retrieval, and dissemination of information. Open to both majors and non-majors in library-audiovisual education.

LIS 6312 PREPARING

INSTRUCTIONAL MEDIA (4)
Fundamentals of preparing and using audiovisual as they relate to the communication process.

LIS 6409 INTRODUCTION TO LIBRARY ADMINISTRATION (4)
Behavioral approach to planning, organizing, staffing and controlling libraries as organizations; identification of administrative principles, theories, and problems of all types of libraries; critical examination of methods of administration supporting library functions, programs, and services; fiscal and legal responsibilities of libraries.

LIS 6428 AUDIOVISUAL ADMINISTRATION (5)
PR: LIS 6312 and LIS 6508 or CI. Audiovisual administrative practices in school systems and junior colleges.

LIS 6432 SEMINAR IN ACADEMIC LIBRARIES (4)
PR: LIS 6409. 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.

LIS 6445 SEMINAR IN PUBLIC LIBRARIES (4)
PR: LIS 6409. Identification of problems and critical examination of methods in administrative areas of technical, children, and adult services, fiscal, and legal responsibilities, staff organization and supervision in public libraries.

LIS 6455 THE ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER (5)
PR: General Program Requirements or CI. Media quarters, facilities and equipment. Basic principles of organization and administration of media programs in elementary and secondary schools.

LIS 6472 SEMINAR IN SPECIAL LIBRARIES (4)
PR: LIS 6409. Identification of problems and critical examination of methods in administrative areas of technical and special service clientele; fiscal and legal responsibilities, staff organization and services in special libraries.

LIS 6506 AUDIOVISUAL UTILIZATION (4)
Examination (and utilization) of non-print media. Characteristics of media equipment and paradigms of use.

LIS 6507 FOUNDATIONS OF EDUCATIONAL TECHNOLOGY (4)
Traces historical development and the application of educational technology to school media services.

LIS 6508 THE CURRICULUM AND INSTRUCTIONAL TECHNOLOGY (5)
Effective utilization of instructional materials as they relate to specific areas of the curriculum in elementary and high school programs.

LIS 6520 SELECTION OF LIBRARY MATERIALS (4)
Bibliographical sources, evaluative criteria for books and principles of book selection for libraries.

LIS 6572 BOOKS AND RELATED MATERIALS FOR YOUNG ADULTS (5)
Young adult materials for use in secondary school libraries, young adult sections of public libraries and other institutions serving youth. Equal emphasis upon 1 selection principles and bibliographic sources as well as upon 2 utilization in terms of service to the young adult.

LIS 6586 MATERIALS FOR CHILDREN (4)
Examination of materials for all institutions in which children are served: school media centers, public libraries, kindergartens, etc. Stress on selection aids, reviewing techniques, utilization.

LIS 6605 ADVANCED INFORMATION SOURCES AND SERVICES (4)
PR: LIS 6608. Reference materials in the humanities, social sciences, science, and technology.

LIS 6608 BASIC INFORMATION SOURCES AND SERVICES (4)
An in-depth examination of the basic sources of information in the general material; discussion of bibliographical control of all communication media, with emphasis on the tools which are of most value to general reference services; and the provision of various types of reference services.

LIS 6609 AUTOMATED INFORMATION SOURCES AND SERVICES (4)
PR: Basic Information Sources and Services, Information Science in Librarianship or CI. Principles of on-line searching and characteristics of machine-readable bibliographic data bases. Includes two credit hours of laboratory providing hands-on searching experience. (S/U only.)

LIS 6610 INFORMATION SOURCES AND SERVICES IN THE HUMANITIES (4)
PR: LIS 6608 or CI. 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.

LIS 6620 INFORMATION SOURCES AND SERVICES IN THE SOCIAL SCIENCES (4)
PR: LIS 6608 or CI. 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.

LIS 6630 INFORMATION SOURCES AND SERVICES IN SCIENCE AND TECHNOLOGY (4)
PR: LIS 6608 or CI. Study of representative reference sources in pure and applied sciences with equal attention given to typical problems encountered in scientific and technological reference service.

LIS 6651 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.

LIS 6661 DOCUMENTS AND SERIALS (4)
The nature of documents and serials, their reference and research value; techniques of acquisition, cataloging, organization, conservation and reference use.

LIS 6724 CLASSIFICATION AND CATALOGING OF NON-BOOK MATERIALS (3)

LIS 6735 TECHNICAL SERVICES IN LIBRARIES (4)
Principles of general library practice in technical services operations. Emphasis on descriptive cataloging and use of unabridged Dewey Decimal Classification.

LIS 6745 ADVANCED CATALOGING (4)
PR: LIS 6735. Introduction to L.C. Classification System; changing policies and procedures in cataloging; and analysis of system.

LIS 6906 INDEPENDENT STUDY (1-5)
PR: 20 hours earned in program and consent of adviser.

LIS 6935 TECHNIQUES FOR TEACHING IN THE SCHOOL MEDIA CENTER (4)
Methods and techniques pertinent to working with students and teachers in the school media program. To be taken concomitantly with LIS 6946 or CI.

LIS 6946 SUPERVISED FIELD WORK (4)
PR: CI. A minimum of 80 hours of supervised experience in an
approved cooperating library, media center, or other approved agency during the student’s last quarter of studies. This includes practice work, seminar sessions, individual conferences, and a summary report interpreting and evaluating the field experience.

### Measurement-Research-Evaluation

#### GRADUATE COURSES

**EDF 7407  STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH I**
PR: CI. Theory of and application of descriptive statistical procedures to problems in educational research: symbolization of data and statistical operations; tabulation and depiction of data; measures of central tendency and variability. Introduction to probability: Binomial Distribution; the normal probability distribution. Inferential statistics theory and application: t tests; confidence interval estimation; introduction to analysis of variance theory. Coordinated use of computer as a data processing resource.

**EDF 7408  STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH II**
PR: EDF 7407 or CI. Theory and application of inferential statistical procedures to problems in educational research: one-way analysis of variance; factorial analysis of variance; and multiple comparison procedures. Simple regression and correlation, and appropriate tests of significance Non-parametric statistical inference. Coordinated use of computer as a data processing resource.

**EDF 7409  STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH III**
PR: EDF 7408 or CI. Theory of and application of experimental design and linear modeling to problems in educational research. Multiple correlation and regression - a specific technique and a general approach to statistical inference (analysis of variance and co-variance). Elements of matrix algebra. Coordinated use of computer as a data processing resource.

**EDF 7437  ADVANCED MEASUREMENT I**
PR: EDF 7407 or equivalent and EDF 6431 or equivalent. A first advanced graduate course in the nature and theory of measurement. Alternative statistical theories of measurement. Logical, empirical, and statistical models of measurement processes. Measurement scales and levels of measurement. Reliability of educational measurement. Critique of commercially available instruments for measurement in education.

**EDF 7438  ADVANCED MEASUREMENT II**

**EDF 7469  CRITICAL ISSUES IN EDUCATIONAL MEASUREMENT AND EVALUATION**
A consideration of major issues relevant to the theory and application of measurement and evaluation. Topics include: culture-faire testing, accountability, normative vs. criterion measures and socio-political issues.

**EDF 7484  STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH IV**
PR: EDF 7409 or CI. Fundamentals and applications of the following multivariate statistical procedures to problems in educational research: Commonality analysis, path analysis, factor analysis, canonical variate analysis, discriminant analysis. Use of packaged computer programs with various multivariate analysis procedures.

**EDF 7485  EVALUATION IN EDUCATION: THEORY AND PRACTICE**
PR: EDF 7408, EDF 7493 or CI. Application of evaluation theory and practice to the systematic study of problems and programs in education. Review and synthesis of students’ prior knowledge. Update of most recent developments in evaluation. Development of a defensible, coherent approach to evaluation. Formal application of evaluation approach to an educational problem or program.

**EDF 7489  APPLICATION OF COMPUTER LANGUAGE AND PROCEDURES IN EDUCATION**
Development of understanding and technical skill in relation to computer and data processing approaches to solution of educational research, and administrative problems. Training in use of Fortran as a programming language.

**EDF 7493  RESEARCH-BASED PLANNING EVALUATION AND DEVELOPMENT IN EDUCATION**
Introduction to systematic planning and development procedures including needs assessment, proposal development, evaluation design and process engineering. Emphasis placed on analysis of evaluation models and theory.

**EDF 7494  A BASIS FOR PLANNING AND DEVELOPMENT IN EDUCATION**

### Music Education

#### UNDERGRADUATE COURSES

**MUE 2420  THEORETICAL BASES OF MUSIC EDUCATION**
The course is designed to investigate music education practices in the schools. It provides the student with experiences and information early in his academic career which will enable him to determine his commitment to professional music education.

**MUE 3411  CHORAL MATERIALS PRACTICUM**
PR: CI. A study of choral materials, in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each quarter. May be repeated for a total of six credit hours.

**MUE 3413  BAND MATERIALS PRACTICUM**
PR: CI. A study of band materials, in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each quarter. May be repeated for a total of six credit hours.

**MUE 3414  ORCHESTRAL MATERIALS PRACTICUM**
PR: CI. A study of orchestra materials, in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each quarter. May be repeated for a total of three credit hours.

**MUE 4050  FOUNDATION OF INSTRUMENTAL MUSIC**
PR: CI, Junior standing. Introduction to the foundations of instrumental music instruction in the elementary and middle school.

**MUE 4130  CLASSROOM MUSIC IN THE SECONDARY SCHOOL**
PR: CI. Development and implementation of methods and techniques for teaching music to the student not participating in secondary school music performing groups.

**MUE 4314  MUSIC IN THE ELEMENTARY SCHOOL**
A study of principles, techniques, materials, and activities as they relate to a comprehensive music curriculum in Grades K-6.

**MUE 4331  CHORAL METHODS IN THE SECONDARY SCHOOL**
PR: CI, Junior standing. Development and implementation of methods and techniques for teaching secondary school choral music.
MUE 4332 INSTRUMENTAL MUSIC IN THE SECONDARY SCHOOL (4)
PR: CI, Junior standing. Development and implementation of methods and techniques for teaching secondary school instrumental music.

MUE 4480 BAND PAGAENTRY (2)
This course is designed as an elective offering for instrumental music majors who expect to direct band activities in a secondary school. It will provide the student with skills in creating half-time shows, an integral part of the band teacher’s responsibilities.

GRADUATE COURSES
MUE 6189 MUSIC SUPERVISION AND ADMINISTRATION (3)
The music curriculum in relation to the total school program; staff and budgetary needs.

MUE 6416 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.

MUE 6417 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.

MUE 6640 CURRENT TRENDS IN SCHOOL VOCAL MUSIC (3)
New materials, equipment, techniques of teaching, and recent historical trends in vocal music.

MUE 6641 CURRENT TRENDS IN SCHOOL INSTRUMENTAL MUSIC (3)
New materials, equipment, techniques of teaching, and recent historical trends in instrumental music.

MUE 6780 TECHNIQUES OF RESEARCH IN MUSIC EDUCATION (4)
Professional bibliography and individual research projects.

Natural Science - Mathematics Education

UNDERGRADUATE COURSES
CAP 4100 COMPUTING DEVICES IN THE EDUCATIONAL PROCESS (3)
PR: CI. This course will explore the use of minicalculators, programmable calculators, and microcomputers. Characteristics of computing devices, flow charting, programming, classroom management techniques, teaching materials, and applications will be discussed.

MAE 4320 TEACHING JUNIOR HIGH SCHOOL MATHEMATICS (4)
PR: 24 quarter hours of mathematics or CC. Techniques and materials of instruction in junior high school mathematics.

MAE 4330 TEACHING SENIOR HIGH SCHOOL MATHEMATICS (4)
PR: EDG 4200 or CR in EDG 4200 and admission to teacher education program in mathematics. Techniques and materials of instruction in mathematics.

MAE 4885 INTERPRETING MATHEMATICAL SYMBOLISM (2)
PR: Reading in Secondary Content Areas, Teaching Senior High School Mathematics, or CR in Teaching Senior High School Mathematics.

SCE 4305 COMMUNICATION SKILLS IN THE SCIENCE CLASSROOM (2)
PR: RED 4360 or CR in RED 4360. Reading and communication skills important in understanding scientific literature and communicating findings to others.

SCE 4330 TEACHING METHODS IN THE SECONDARY SCHOOL-SCIENCES (4)
PR: Completion of 40 hours in approved science areas or CE completion of EDG 4200 or CR in EDG 4200. Techniques and materials of instruction in secondary school sciences.

SCE 4630 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.

SCE 4631 NEW TRENDS IN TEACHING BIOLOGY (4)
Recent developments in curriculum materials and in strategies for teaching biological sciences, grades 7-12. Recommended for preservice teachers of secondary school biology.

GRADUATE COURSES
MAE 5636C 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.

MAE 6136 CURRENT TRENDS IN SECONDARY MATHEMATICS EDUCATION (4)
PR: MAE 4330 or CI. Curricular patterns and instructional practices in secondary mathematics.

MAE 6337 TOPICS IN TEACHING ALGEBRA (2-5)
PR: Undergraduate degree in mathematics or certification in secondary school mathematics. Topics in algebra, philosophy, new trends, and methods of teaching secondary school algebra. May be repeated for a maximum of five hours.

MAE 6338 TOPICS IN TEACHING GEOMETRY (2-5)
PR: Undergraduate degree in mathematics or certification in secondary school mathematics. Topics in geometry, philosophy, new trends, and methods of teaching secondary school geometry. May be repeated for a maximum of five hours.

MAE 6356 TEACHING OF PRE-SECONDARY SCHOOL MATHEMATICS (5)
PR: 18 quarter hours of mathematics or CI. Development of strategies and materials for teaching mathematical concepts and skills appropriate to pre-secondary school years. May be repeated for credit up to 15 hours.

SCE 5937 SELECTED TOPICS IN SCIENCE EDUCATION (1-5)
May be repeated when topics are not duplicated.

SCE 6336 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.

SCE 6436 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.

SCE 6634 CURRENT TRENDS IN SECONDARY SCIENCE EDUCATION (4)
PR: Bachelor's degree with major in science area: certification in secondary science, or CI. Curricular patterns and instructional practices in secondary science.

Physical Education for Teachers

UNDERGRADUATE COURSES
HES 2400 FIRST AID (3)
Meets the American Red Cross certification requirements in
standard and advanced first aid.

LEI 4007 COMMUNITY RECREATION (4)
Introduction to recreational outlets in the community and the administrative problems confronting recreational playground leaders and directors of community recreational programs. Offered on Independent Study basis only.

†PET 4942C SEMINAR AND FIELD EXPERIENCE IN PHYSICAL EDUCATION (5)
PR: PET 3944C. A three course experience involving supervised teaching experiences at the secondary school level. On-campus seminars emphasize: development of junior and senior high school students; the influence of various teaching styles on the learning process; the process of individualization; structuring meaningful learning experiences in the psychomotor, cognitive, and affective domains.

†PET 3942C SEMINAR AND FIELD EXPERIENCE IN PHYSICAL EDUCATION (5)
Students spend approximately two hours a day at an elementary school teaching physical education and assisting in the classroom. Emphasis is placed on understanding the primary aged child and effective ways of setting the teacher-learning environment. (S/U only)

†PET 4943C SEMINAR AND FIELD EXPERIENCE IN PHYSICAL EDUCATION (5)
PR: PET 3942C. Elementary school physical education teaching experiences are provided for students with added focus on the upper elementary grades. Seminars emphasize planning and teaching methodology. Health and recreation as they relate to elementary school children are studied.

†PET 3944C SEMINAR AND INTERNSHIP IN PHYSICAL EDUCATION (5)
PR: PET 3943C. 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.

PET 4302 PRINCIPLES AND ISSUES IN COACHING (5)
The application of principles from philosophy, psychology, sociology, and physiology to competitive athletics and coaching.

†PET 4346C APPLIED HUMAN KINETICS I (4)
PR: PET 3377C. A three course sequence which stresses the biomechanical analysis of movement, principles of psychomotor learning and teaching competencies in dance, and the skills and strategies common to a number of individual and team sports.

†PET 4362C APPLIED HUMAN KINETICS III (4)
A three course sequence which stresses the biomechanical analysis of movement, principles of psychomotor learning and teaching competencies in dance, and the skills and strategies common to a number of individual and team sports.

PET 4622 ATHLETIC TRAINING (3)
PR: CI. Principles and techniques of conditioning athletes for competition; prevention and care of injuries in physical education and athletic activities.

†PET 4943C SEMINAR AND INTERNSHIP IN PHYSICAL EDUCATION (5)
PR: PET 3944C. A three course experience involving supervised teaching experiences at the secondary school level. On-campus seminars emphasize: development of junior and senior high school students; the influence of various teaching styles on the learning process; the process of individualization; structuring meaningful learning experiences in the psychomotor, cognitive, and affective domains.

†PET 4944C SEMINAR AND INTERNSHIP IN PHYSICAL EDUCATION (5)
PR: PET 3944C. A three course experience involving supervised teaching experiences at the secondary school level. On-campus seminars emphasize: development of junior and senior high school students; the influence of various teaching styles on the learning process; the process of individualization; structuring meaningful learning experiences in the psychomotor, cognitive, and affective domains.

GRADUATE COURSES

PET 6051C 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.

†Enrollment in these courses requires admission to the Physical Education Program.
PET 6295 SOCIO-PSYCHOLOGICAL ASPECTS OF HUMAN MOVEMENT (4)
Involves the psychological and sociological implications of movement to historical and contemporary man. Emphasis on psychomotor learning, movement behavior, physical self-concept, role of movement in society and values and attitudes held toward movement.

PET 6296 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.

PET 6345C 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 neuro-muscular mechanisms in motor performance, physical principles of human movement and the effects of exercise on the muscular and cardio-respiratory systems.

PET 6396C 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.

PET 6425 CURRICULUM 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 requirement of this course.

PET 6496 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.

PET 6645, 6646 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.

PET 6910L 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.

Reading Education

UNDERGRADUATE COURSES

RED 4337 READING IN THE SECONDARY SCHOOL (4)
Basic course in Reading for Secondary school personnel. Work with a student is required.

RED 4360 READING IN SECONDARY CONTENT AREAS (2)
PR: CI and other content area PR or CR. Provides basic instruction on phonics, word recognition, readability, interests, corrective procedures, reading behaviors, comprehension, etc. Offered only in conjunction with special content reading courses.

RED 4515 CORRECTIVE READING FOR THE CHILD (4)
PR: RED 4310 or equivalent. Procedures for meeting individual differences through diagnosis of needs, differentiated instruction, selective use of materials, and classroom organization.

GRADUATE COURSES

RED 6247 CURRICULUM AND SUPERVISION PROBLEMS IN READING (4)
PR: EDF 6431, RED 6116, RED 6546, RED 6548, and CI. Planning and administering programs and preparation as consultants in reading. Intensive work on individual project required.

RED 6365 READING IN SECONDARY AND HIGHER EDUCATION (4)
PR: CI and graduate standing; RED 4310, RED 4337 or RED 4360. The course is designed for graduate students and in-service teachers with appropriate B.A. degrees, who need and/or desire more knowledge beyond an introductory level about reading at the Secondary (7-12) and higher (Community College, University) levels. Students study reading as it applies to their discipline and their level. A research paper is required. Not for undergraduates nor to be used as first course in Reading.

RED 6516 CORRECTIVE READING IN THE CLASSROOM (4)
PR: RED 4310 or equivalent. Use of diagnostic and prescriptive procedures with individual and group reading instruction.

RED 6546 DIAGNOSIS OF READING DISABILITIES (4)
PR: EDF 6431, RED 6116. Causes of reading disability; techniques and materials in diagnosis of reading problems, including telebinocular and audiometer screening. Diagnoses of reading disabilities are required.

RED 6548 TECHNIQUES OF REMEDIAL READING (4)
PR: EDF 6431, RED 6116, and RED 6546. Materials and methods in remediation of moderate to severe reading disability cases. Supervised individual tutoring and in-depth evaluation and use of materials.

RED 6747 SURVEY OF READING RESEARCH (2)
PR: EDF 6431, RED 6116, RED 6546, CI. This course will address topics related to the location of research information, to the reading and evaluation of research, and to the identification and understanding of important studies. May be repeated up to 4 hours.

RED 6748 PROJECT IN READING RESEARCH (3)
PR: EDF 6431, EDF 6481, RED 6116, RED 6546, RED 6747, CI. This course continues the study of research in reading and culminates in a written paper reviewing the research in specific area. May be repeated up to 6 hours.

RED 6838 PRACTICUM IN READING (4)
PR: EDF 6431, RED 6116, RED 6546, RED 6548, and CI. Remediation of severe reading disability cases, tutoring of individuals and smaller groups, interview techniques, preparation of case reports.

RED 7048 READING AS A SYMBOLIC PROCESS (4)
PR: RED 6116 or RED 6365. Advanced graduate standing in Reading/Language Arts or CI. Examination and understanding of the relationship of the various perceptual, learning, affective, and cognitive processes to the acquisition of reading competencies.

RED 7848 ADVANCED CLINICAL PRACTICUM READING (4-8)
PR: EDF 6143, RED 6546, RED 6548, RED 6838, and Advanced Graduate standing in Reading/Language Arts. Clinical diagnosis and remediation of severe reading disability cases with emphasis on multi-disciplinary approach. Supervision of master students in the RED 6546, RED 6548, RED 6838 sequence. May be repeated for a maximum of 8 hours.
# Social Science Education

### UNDERGRADUATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SSE 4333</td>
<td>Teaching Methods in Secondary School – Social Studies</td>
<td>EDG 4200 or CR in EDG 4200. Techniques and materials of instruction in social studies.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 4640</td>
<td>Communication Skills in the Social Studies</td>
<td>CI. Communication Skills in the Social Studies. Methods of dealing with reading problems in social studies. This course and RED 4360 satisfy the state certification requirement pertaining to secondary reading.</td>
<td>2</td>
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### GRADUATE COURSES

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<tbody>
<tr>
<td>SSE 5324</td>
<td>Teaching Methods in the Middle School – Social Studies</td>
<td>CI. Techniques of instruction in Middle School Social Studies.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 5354</td>
<td>Critique of Selected Social Science Education Literature</td>
<td>Major in Secondary Social Science or CI. An investigation into various selected readings in Social Science Education literature.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 5445</td>
<td>Evaluation and Implementation of Media in Social Studies</td>
<td>CI. Techniques of evaluating and using various media in the Social Studies.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 5647</td>
<td>Instructional Problems and Strategies in Social Studies: Elementary, Middle or Secondary School</td>
<td>Admission to Secondary Social Science or CI. Investigation of problems confronted when teaching Social Studies in the elementary, middle, or secondary school.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 6117</td>
<td>Elementary Social Studies Curriculum</td>
<td>Admission to College of Education or CI. Evaluation of past and present curriculum in Elementary Social Studies.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 6133</td>
<td>Secondary Social Science Curriculum</td>
<td>Admission to College of Education or CI. Evaluation of past and present curriculum in Secondary Social Science.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 6636</td>
<td>Current Trends in Secondary Social Studies</td>
<td>SSE 4333 or equivalent or CI. Curricular patterns and instructional practices in secondary social studies.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 6795</td>
<td>Review of Research in Social Science Education</td>
<td>EDF 3430 or EDF 6431. Graduate Students in Education, or CI. Investigation into and an evaluation of the research in Social Science Education.</td>
<td>4</td>
</tr>
<tr>
<td>SSE 6939</td>
<td>Seminar in Social Science Education</td>
<td>EDF 3430 or EDF 6431, or CI. To increase general technological knowledge of graduate students in Social Science Education.</td>
<td>1-4</td>
</tr>
</tbody>
</table>

### Speech Communication-English Education

### UNDERGRADUATE COURSES

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>SED 4371</td>
<td>Directing Speech Activities in the Secondary School</td>
<td>15 hours of speech communication courses or CI. Coaching and directing cocurricular activities in discussion, debate, oratory, theatre, oral interpretation, and extemporaneous speaking.</td>
<td>5</td>
</tr>
</tbody>
</table>

Planning and supervision of tournaments, contests, and festivals. Observations required.

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<tbody>
<tr>
<td>SED 4374</td>
<td>Reading in Speech Communication Instruction</td>
<td>RED 4360 or in conjunction with this course. Strategies and materials for teaching oral and silent reading in speech and theatre classes at the secondary school level.</td>
<td>2</td>
</tr>
</tbody>
</table>

### GRADUATE COURSES

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<thead>
<tr>
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<th>Prerequisites</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SED 6070</td>
<td>Seminar in the History of Speech Communication in Education</td>
<td>CI. Studies in selected sources, critical writings, and research which have contributed to the development of speech communication as an academic discipline.</td>
<td>5</td>
</tr>
<tr>
<td>SED 6670</td>
<td>Current Trends in Teaching Speech Communication</td>
<td>CI. Curricular patterns; preparation of personnel; instructional materials, facilities and practices used in teaching speech communication.</td>
<td>5</td>
</tr>
</tbody>
</table>

### Vocational and Adult Education

### UNDERGRADUATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADE 4360</td>
<td>Methods of Teaching: Adult Education</td>
<td>Methods, techniques, and materials for instruction. This course will specialize in Diversified Cooperative Training.</td>
<td>4</td>
</tr>
<tr>
<td>ADE 4361</td>
<td>Special Teaching Methods: Adult Education</td>
<td>Methods, techniques, and materials for skill development.</td>
<td>5</td>
</tr>
<tr>
<td>ADE 4945</td>
<td>Supervised Field Experience: Adult Education</td>
<td>Planned supervised functions in the area of specialization and co-ordinated with selected schools, government, offices, social agencies, businesses and industries on site.</td>
<td>1-8</td>
</tr>
<tr>
<td>BTE 3363</td>
<td>Business and Office Machines</td>
<td>Basic Typewriting. Instruction and practice on selected business and office machines to acquaint students with capabilities and limitations of the machines.</td>
<td>5</td>
</tr>
<tr>
<td>BTE 3365</td>
<td>Administrative Office Management</td>
<td>Functions of the business office to include systems and procedures, communications, records management, office employee behavior, controlling the work of the office, and principles of office organization. Also includes the methodology necessary for teaching these areas in either separate courses or integrated block programs.</td>
<td>5</td>
</tr>
<tr>
<td>BTE 4360</td>
<td>Methods of Teaching: Business Education</td>
<td>Introduction to Computers I or equivalent. Satisfactory competencies in Office Administration Concentration, or CI. Methods, techniques, and materials for instruction. This course will specialize in Diversified Cooperative Training.</td>
<td>4</td>
</tr>
<tr>
<td>BTE 4364</td>
<td>Special Teaching Methods: Business Education</td>
<td>Speech Improvement and Phonetics, satisfactory competencies in Office Technology Concentration, or CI. Methods, techniques, and materials for skill development.</td>
<td>5</td>
</tr>
<tr>
<td>BTE 4369</td>
<td>Office Occupations Procedures</td>
<td>Successful completion of all basic competency exams required by the program area, or consent of program coordinator. This course is designed to integrate learnings from preceding business and office education courses.</td>
<td>5</td>
</tr>
<tr>
<td>BTE 4948</td>
<td>Field-Based Seminar in Business Education</td>
<td>BTE 4360 and BTE 4364. A seminar and supervised field experience providing orientation to the broad field of business</td>
<td>3</td>
</tr>
</tbody>
</table>