education in public middle or senior high schools. It is specifically
designed to be preparatory for the internship which occurs the
following term in the same setting. The ten-hour weekly field
experience is programmed to provide full exposure to the
responsibilities of the cooperating classroom teacher. (S/U only.)

DEC 4174 ORGANIZATION AND COORDINATION
OF COOPERATIVE PROGRAMS
A study of the purposes and processes used to organize, plan,
direct, control, and evaluate cooperative programs.

DEC 4362 SPECIAL TEACHING METHODS:
DISTRIBUTIVE EDUCATION
Methods, techniques, and materials for skill development.

DEC 4382 METHODS OF TEACHING:
DISTRIBUTIVE EDUCATION
Methods, techniques, and materials for instruction. This course
will specialize in Diversified Cooperative Training.

DEC 4491 SUPERVISED FIELD EXPERIENCE:
INDUSTRIAL-TECHNICAL EDUCATION
PR: CI. Planned supervised functions in the area of specialization
and co-ordinated with selected schools, government, offices,
social agencies, businesses and industries on site.

DEC 4491 SUPERVISED FIELD EXPERIENCE:
DISTRIBUTIVE EDUCATION
PR: CI. Planned supervised functions in the area of specialization
and co-ordinated with selected schools, government offices, social
agencies, businesses and industries on site.

EVT 2063 THE TEACHER IN A WORLD OF
WORK
A study of educational efforts in preparing people for work, the
relationship of a job to man's life style, and the concept of
education as a lifelong process.

EVT 4065 PRINCIPLES OF ADULT AND
VOCATIONAL EDUCATION
An overview of current policies and principles to include their
historical, sociological, and philosophical bases out of which
principles of adult and vocational education have been accepted
and implemented.

EVT 4364 METHODS OF TEACHING:
INDUSTRIAL-TECHNICAL EDUCATION
Methods, techniques, and materials for instruction. This course
will specialize in Diversified Cooperative Training.

EVT 4365 SPECIAL TEACHING METHODS:
INDUSTRIAL-TECHNICAL EDUCATION
Methods, techniques, and materials for skill development.

EVT 4540 READING SKILLS IN ADULT AND
VOCATIONAL EDUCATION
PR: RED 4360, or CR in RED 4360. Students will study reading
and communication skills as they relate to the particular content
areas in Adult and Vocational-Technical Education. This course,
along with RED 4360, satisfies State certification requirement
pertaining to secondary reading.

EVT 4815 FACILITY DESIGN AND
MANAGEMENT
Design and develop instructional facility floor plans consistent
with modern and efficient methods of instruction as well as
evaluate existing classrooms, laboratories, and shops. Selection
and location of equipment. Review and prepare operational plans
for the management of equipment, furniture, tools, and supplies
as they relate to effective student learning.

EVT 4945 SUPERVISED FIELD EXPERIENCE:
BUSINESS EDUCATION
PR: CI. Planned supervised functions in the area of specialization
and co-ordinated with selected schools, government, offices,
social agencies, businesses and industries on site.

GRADUATE COURSES

ADE 5160 PROGRAM MANAGEMENT:
ADULT EDUCATION
Organization, co-ordination, and budgeting of adult, cooperative,
and special programs.

ADE 5161 CURRICULUM CONSTRUCTION:
ADULT EDUCATION
Curriculum scope, the process of planning and organizing
instructional programs with emphasis on task analysis and
process evaluation.

ADE 5385 THE ADULT LEARNER
PR: EDF 3214 or equivalent. Physiological and psychological
changes in individuals throughout the adult life span and the
implications which these changes have in learning capabilities of
adults. A review of recent research on adult learning is also
emphasized.

ADE 6197 ADULT BASIC EDUCATION
An overview of adult basic education with emphasis on current
issues and problems of curriculum and instruction in program
development for culturally different adults.

ADE 6380 ADMINISTRATION OF LOCAL
PROGRAMS: ADULT EDUCATION
A study of the organization, selection of personnel, assignment
duties and responsibilities, and establishment of policies and
procedures to accomplish the objectives of the local program
within the federal, state, and local requirements.

ADE 6387 SUPERVISION OF LOCAL PROGRAMS:
ADULT EDUCATION
PR: CI. A study of the factors involved in the supervision of
instruction including plans for teacher education, improvement of
instruction, coordination of activities, and personnel relations.

ADE 6946 PRACTICUM: ADULT EDUCATION
A problem-centered field study in the local community, school,
government, office, social agency, business or industry.

BTE 5171 CURRICULUM CONSTRUCTION:
BUSINESS EDUCATION
Curriculum scope, the process of planning and organizing
instructional programs with emphasis in task analysis and process
evaluation.

BTE 5245 PROGRAM MANAGEMENT:
BUSINESS EDUCATION
Organization, co-ordination, and budgeting of adult, cooperative,
and special programs.

BTE 6385 IMPROVEMENTS OF METHODS OF
TYPOWRITING INSTRUCTION
PR: EDF 6431 and EDF 6481 or CI. This course contains a
research-based study of the philosophy and psychology of the
Teaching of typewriting. It also examines the status of typewriting
in the public schools, postsecondary schools, and business
organizational settings. Techniques for developing specialized
instructional materials, in accordance with psychomotor princi-
ples of learning, are included. Action research projects are
pursued. The course is available for majors and qualified non-
majors. It may also be available for credit and non-credit
workshops and seminars.

BTE 6386 THEORIES OF BASIC BUSINESS &
ACCOUNTING INSTRUCTION
PR: Methods of Teaching or equivalent, EDF 6481 or CI. This course
contains a research-based study of theory and methodology
in teaching basic business and accounting subjects. The course
is available to majors and non-majors and for credit and non-
credit workshops and seminars.

BTE 6387 RESEARCH IMPLICATIONS FOR
SHORTHAND PEDAGOGY
PR: Special Teaching Methods, EDF 6481 or CI. This course
contains a research-based study of methodology and prognosis in
the teaching of shorthand. It also compares various shorthand
systems. Techniques for applying psychological principles of
learning to shorthand instruction are included. Action research
projects are pursued. The course is available for majors and non-majors and for credit and non-credit workshops and seminars.

**BTE 6944 PRACTICUM: BUSINESS EDUCATION**
A problem-centered field study in the local community, school, government, office, social agency, business or industry.

**DEC 5175 PROGRAM MANAGEMENT: DISTRIBUTIVE EDUCATION**
Organization, co-ordination, and budgeting of adult, cooperative, and special programs.

**DEC 5185 CURRICULUM CONSTRUCTION: DISTRIBUTIVE EDUCATION**
Curriculum scope, the process of planning and organizing instructional programs with emphasis on task analysis and process evaluation.

**DEC 6945 PRACTICUM: DISTRIBUTIVE EDUCATION**
A problem-centered field study in the local community, school, government, office, social agency, business or industry.

**EVT 5176 CURRICULUM CONSTRUCTION: INDUSTRIAL-TECHNICAL EDUCATION**
Curriculum scope, the process of planning and organizing instructional programs with emphasis on task analysis and process evaluation.

**EVT 5190 SCHOOL-COMMUNITY DEVELOPMENT**
An approach to identifying, assessing, and analyzing individual, institutional, and community needs, for the purpose of cooperative program planning, community involvement and public support.

**EVT 5280 OCCUPATIONAL SAFETY AND HEALTH (OSHA)**
Planning and organizing safety and health course content to be included in occupational education programs in Florida. Content to be identified in and selected from Federal Registers, Department of Labor, Occupational Safety and Health Standards.

**EVT 5367 PREPARATION AND DEVELOPMENT FOR TEACHING**
The development of selected instructional materials, use of new educational media, performance evaluation instruments, and counseling techniques.

**EVT 5817 PROGRAM MANAGEMENT: INDUSTRIAL-TECHNICAL EDUCATION**
Organization, co-ordination, and budgeting of adult, cooperative, and special programs.

**EVT 6191 METHODS, PROCEDURES, AND PROCESSES OF VOCATIONAL REHABILITATION COOPERATIVE SCHOOL PROGRAM COUNSELING**
A study of the purposes, methods, procedures and processes used to plan, implement and operate a Vocational Rehabilitation Cooperative School Counseling Program.

**EVT 6300 INDIVIDUALIZED INSTRUCTION**
Attention is given to individualized instruction to include the special needs student, the slow learner, and the more capable student.

**EVT 6385 ADMINISTRATION OF LOCAL PROGRAMS: VOCATIONAL EDUCATION**
A study of the organization, selection of personnel, assignment of duties and responsibilities, and establishment of policies and procedures to accomplish the objectives of the local program within the federal, state, and local requirements.

**EVT 6386 SUPERVISION OF LOCAL PROGRAMS: VOCATIONAL EDUCATION**
PR: CI. A study of the factors involved in the supervision of instruction including plans for teacher education, improvement of instruction, coordination of activities, and personnel relations.

**EVT 6563 CURRENT TRENDS**
Historical information, issues, current trends, new dimensions and problems in the area of specialization.

**EVT 6769 METHODS, PROCEDURES, AND PROCESSES OF VOCATIONAL EVALUATION**
A study of the purposes, methods, processes and procedures used to plan, implement and operate a vocational evaluation program.

**EVT 6926 STAFF DEVELOPMENT**
Implementation of new procedures addressed to discreet developmental needs of the staff as identified by an educational agency.

**EVT 6930 SEMINAR**
PR: EDF 6431 and EDF 6481. Applied research techniques and investigation of important current issues of theses is the area of specialization.

**EVT 6948 PRACTICUM: INDUSTRIAL-TECHNICAL EDUCATION**
A problem-centered field study in the local community, school, government, office, social agency, business or industry.

### ENGINEERING


**Basic and Interdisciplinary Engineering Course Work**

**UNDERGRADUATE COURSES**

**EGN 1002 ENGINEERING ORIENTATION**
The role of engineering in society, characteristics of different fields of engineering, required preparation for engineering careers, techniques and approaches used by engineers in their profession. (S/U only.)

**EGN 1111C GRAPHIC ANALYSIS I**
The theory and application of projective systems and related topics. Basic problems in engineering drawing. Purchase of drawing instruments and other necessary drafting supplies to be discussed at first class session. Lec.-lab.

**EGN 1401 GRAPHIC ANALYSIS II**

**EGN 1402 GRAPHIC ANALYSIS III**
PR: EGN 1111C. An elective course designed for students with limited background in pre-calculus mathematics necessary for graphical processes. Emphasis on graphical concepts of algebraic and trigonometric relationships.

**EGN 1403 GRAPHIC ANALYSIS IV**
Continuation of EGN 1402.
EGN 2021L INTRODUCTION TO ENGINEERING I 
To present an overview of Engineering, its role and its concepts. Experimental program; see adviser.

EGN 2210 ANALYSIS & COMPUTATION I 
Basic computer operation and programming concepts. Use of FORTRAN in solving engineering type problems.

EGN 2405L INTRODUCTION TO ENGINEERING II 
PR: EGN 2021L. Continuation of EGN 2021L. (Experimental program.)

EGN 2410 ENGINEERING PROBLEMS I 

EGN 3211 ANALYSIS & COMPUTATION II 
PR: EGN 2210 or equivalent. Use of FORTRAN AND WATFIV in solving engineering problems. Use of computer libraries. Structure and use of SIMSCRIPT in systems simulation.

EGN 3313 STATICS 
PR: MAC 3281. Principles of statics, mechanical equilibrium, forces, moments, plane trusses. Lec.-pro.

EGN 3321 DYNAMICS 
PR: EGN 3313. Dynamics of discrete particles and distributed mass bodies; spatial kinematics and kinetics. Lec.-pro.

EGN 3331 DEFORMABLE BODIES 
PR: EGN 3313. Stress, strain, Hooke's Law; torsion, beam, column analysis; combined stresses; inelastic effects, limit design. Lec.-lab.

EGN 3343 THERMODYNAMICS I 

EGN 3344 THERMODYNAMICS II 

EGN 3354C BASIC FLUID MECHANICS 
PR: EGN 3211. Fundamental and experimental concepts in ideal and viscous fluid theory; momentum and energy consideration, introduction to hydraulics, pipe flow. Lecture.

EGN 3355C COMPRESSIBLE FLOW 
PR: EGN 3355C. Compressible flow and free surface flow.

EGN 3365L MATERIALS ENGINEERING I 
PR: CHM 2047, EGN 3313. An introduction to structure and property relationships in engineering materials, i.e., metal, ceramic and polymer systems. Environmental effects on materials are also treated. Lecture.

EGN 3366 MATERIALS ENGINEERING II 
PR: EGN 3365L. Continuation of EGN 3365L.

EGN 3373 INTRODUCTION TO ELECTRICAL SYSTEMS I 

EGN 3374 INTRODUCTION TO ELECTRICAL SYSTEMS II 
PR: EGN 3373. Continuation of EGN 3373.

EGN 3375 INTRODUCTION TO ELECTRICAL SYSTEMS III 
PR: EGN 3373. Continuation of EGN 3373 or EGN 3374.

EGN 3411 ENGINEERING PROBLEMS II 
CR: MAC 3282. Continuation of EGN 2410.

EGN 3412 ENGINEERING PROBLEMS III 
CR: MAC 3283. Continuation of EGN 3411.

EGN 3413 ENGINEERING PROBLEMS IV 
CR: MAC 3284. Continuation of EGN 3412.

EGN 3433L DYNAMIC RESPONSE OF ENGINEERING SYSTEMS I 
PR: PHY 3041, PHY 3041L. Linear dynamic analysis of electrical, mechanical, pneumatic, hydraulic and thermal systems. LaPlace transformation, block diagram representation, transient and frequency response. Lec.-dem.

EGN 3443 ENGINEERING STATISTICS I 

EGN 3613 ENGINEERING VALUATION I 
PR: EGN 2210. A study in analyzing the economic limitations imposed on engineering activities using basic models which consider the time value of money.

EGN 4421 ENGINEERING ANALYSIS I 

EGN 4450 INTRODUCTION TO LINEAR SYSTEMS 
PR: EGN 4421. Study and application of matrix algebra, differential equations and calculus of finite differences.

EGN 4905 INDEPENDENT STUDY 
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated up to 15 credit hours. (S/U Only).

EGN 4933 SPECIAL TOPICS 
New technical topics of general interest on an intermediate or experimental basis. May be repeated to a total of 10 credit hours.

EGN 4935 PROFESSIONAL ENGINEERING SEMINAR I 
PR: CI. A lecture-discussion seminar on modern trends in the engineering profession.

EGN 4936 PROFESSIONAL ENGINEERING SEMINAR II 
PR: CI and Senior standing. An examination of current engineering and related problems facing the graduating senior. (S/U Only.)

EMC 3121 TRANSFER OPERATIONS I 

EGN 5422, 5423, 5424, 5425, 5426 ENGINEERING ANALYSIS II, III, IV, V, VI 
PR: CC or MAP 4302. A five course sequence. (1) Ordinary differential equations with emphasis on series solutions and numerical methods. (2) Vector analysis, partial differential equations, boundary value problems and orthogonal functions. (3) & (4) Functions of a complex variable with applications. (5) Selected Topics.

EGN 6247 ENGINEERING ANALYSIS VII 
PR: CC. Application of applied mathematics to the study of linearized dynamic systems and networks; state space; stability theory; extensions to discrete and non-linear systems.

EGN 6720C SCIENTIST IN THE SEA I 
PR: CI and diver certification (NAVI or equiv.) Hyperbaric Operations; the basic principles, physiology and psychology involved in submarine hyperbaric operations, inside and outside habitats. Communication and life support is also treated extensively. Lec.-lab. (Also offered under Marine Science.)

EGN 6721C SCIENTIST IN THE SEA II 
PR: CI and diver certification (NAVI or equiv.) Marine Sciences;
an extensive discussion of research equipment and techniques for underwater operations in the Marine Sciences presented by practicing research workers in the field. (Also offered under Marine Science.)

EGN 6722C SCIENTIST IN THE SEA III (4)
PR: CI and diver certification (NAVI or equiv.) Underwater Engineering; the ocean as a constraint for structures and devices. Factors involved in the planning and design of underwater operations and experimental devices. Lec.-lab. (Also offered under Marine Science.)

EGN 6907 INDEPENDENT STUDY (var.)
Independent study in which students must have a contract with an instructor. Repeatable. (S/U only.)

EGN 6911 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

EGN 6971 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)

EGN 6991 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.)

EGN 6992 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.)

EGN 7911 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

EGN 7980 DISSERTATION: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

Electrical and Electronic Systems

UNDERGRADUATE COURSES

CDA 4101 COMPUTER ORGANIZATION (3)
PR: EEL 4705. The structural organization of digital computers; control, data operations, I/O, memory. Functional description of their behavior.

CDA 4171 MINICOMPUTER LABORATORY (1)

CIS 4911 COMPUTER SCIENCE PROJECT (3)
Projects intended to develop individual interests and abilities in computer science involving either computer hardware or software aspects of a well defined proposal.

CNM 4100 ENGINEERING ANALYSIS FOR COMPUTER SCIENCE II (3)
PR: CC or MAP 4302. Numerical solutions of ordinary differential equations through series and numerical methods.

COP 2170 PROGRAMMING IN BASIC (CAI) (1)
Laboratory course in theory and applications of BASIC interactive programming language using a minicomputer and CAI instruction.

COP 3150 PROGRAMMING IN APL (CAI) (2)
PR: MAC 1104 and MAC 1114. Laboratory course in fundamental theory and applications of APL programming language using a minicomputer and CAI learning technique.

COP 3510 INTRODUCTION TO COMPUTER SCIENCE I (2)
PR: MAC 1104. CR: COP 3510. Introduction to the concepts of algorithmic formulation of problems for computer solution and the general abstract operations used in these formulations.

COP 3510L COMPUTER SCIENCE LABORATORY I (1)
CR: COP 3510. Laboratory for implementation of algorithms in a general purpose computer language.

COP 3514 INTRODUCTION TO COMPUTER SCIENCE II (2)

COP 3514L COMPUTER SCIENCE LABORATORY II (1)
PR: COP 3510L. CR: COP 3514. Continuation of COP 3510L.

COP 4400 COMPUTER SYSTEMS (3)
PR: EGN 3211, MAC 3283 or CC. Linked course with COP 4400L. Principles of computer organization, machine and assembly language programming.

COP 4400L COMPUTER SYSTEMS LAB (1)
PR: EGN 3211, MAC 3283 or CC. Linked course with COP 4400. Computer systems and programming laboratory.

COP 4550 PROGRAMMING LANGUAGES (3)
PR: COP 4400. An introduction to programming languages, syntax and semantics, properties of algorithmic languages, binding times, arithmetic, string handling, data structures, list processing, translation.

COP 4620 INTRO TO SYSTEMS PROGRAMMING (3)
PR: COP 4400. Introduction to systems programming, design of assemblers, loaders, linking, data structures and operating systems.

COT 4001 INTRODUCTION TO DISCRETE STRUCTURES (3)
PR: EEL 4705. Introduction to set algebra, propositional logic and finite algebraic structures as they apply to computers.

COT 4130 SWITCHING THEORY (3)
PR: EEL 4705. Elements of sequential machine theory including minimization methods.

EEL 3100, 4101 NETWORK ANALYSIS AND DESIGN I, II (3,3)

EEL 3302, 4301 ELECTRONICS I, II (3,3)
PR: EGB 3374. A second course in the physical principles of electronic devices with emphasis on semiconductor electronics. Includes the analysis and design of amplifiers and switching circuits.

EEL 3410, 4411 FIELDS AND WAVES I, II (3,3)
PR: EGN 4421, PHY 3042, PHY 3042L. A basic introduction to electromagnetic field theory, including static and dynamic electromagnetic fields.

EEL 4101 See EEL 3100

EEL 4102 LINEAR SYSTEMS ANALYSIS (3)
PR: EEL 4101. Provides further study in the analysis of linear networks and systems. Includes time and frequency domain points of view. Laplace, Fourier and superposition integrals.

EEL 4108 DISTRIBUTED NETWORKS (3)
PR: EEL 3410, EEL 4101. Transmission lines, standing waves, impedance, waveguides.

EEL 4133 MATRICES AND ELECTRICAL NETWORKS (3)
PR: EEL 3100. Introduction to matrices applied to electrical networks; two-port network parameters.

EEL 4163 COMPUTER AIDED ANALYSIS AND DESIGN (3)
The use of the computer in analysis and design with applications to electrical problems.

EEL 4220, 4222 ELECTROMECHANICS I, II (3,3)
EEL 4220L, 4222L ELECTROMECHANICS LAB I, II (1,1)  
CR: EEL 4220, EEL 4222, respectively.

EEL 4300 COMMUNICATION CIRCUITS (3)  
PR: EEL 4301. Provides further study in electronic circuits. Includes oscillator, modulator, and detector analysis and design.

EEL 4301 See EEL 3302.

EEL 4330 MICROELECTRONICS ENGINEERING (3)  

EEL 4330L MICROELECTRONICS LABORATORY (1)  
CR: EEL 4330.

EEL 4411 See EEL 3410  
EEL 4511 COMMUNICATION ENGINEERING (3)  
PR: EEL 4300. System considerations of electronic circuits; radio propagation; antennas; transmitters and receivers.

EEL 4511L COMMUNICATIONS LABORATORY (1)  
CR: EEL 4511. Experiments in amplitude modulation, frequency modulation, pulse communications, and data transmission.

EEL 4656 LINEAR CONTROL SYSTEMS (3)  

EEL 4656L CONTROL LABORATORY (1)  
CR: EEL 4656.

EEL 4705 LOGIC DESIGN (3)  
PR: EGN 3374. Non-majors may enroll with CC. Binary number system; truth functions; Boolean algebra; canonical forms; minimization of combinational logic circuits; logic circuits in computers.

EEL 4705L LOGIC LABORATORY (1)  
CR: EEL 4705.

EEL 4745L MICROPROCESSORS LABORATORY (1)  
CR: EEL 4757. Laboratory for Microprocessor use and evaluation.

EEL 4757 MICROPROCESSOR PRINCIPLES AND APPLICATIONS (3)  

EEL 4850C PROGRAMMING METHODOLOGY (3)  
PR: CC. Methods of designing and developing effective and efficient computer programs. Top-down design, structured programming, debugging, and program analysis are addressed.

EEL 4905 INDEPENDENT STUDY (1-5)  
CR: CI. Specialized independent study determined by the students' needs and interests. May be repeated up to 15 credit hours. (S/U only.)

EEL 4906 DESIGN PROJECT (3)  
PR: Senior standing. An individual or team project involving the design of an electrical component or system. Required of all electrical seniors.

EEL 4935, 4936, 4937 SPECIAL ELECTRICAL TOPOICS I, II, III (1-4 each)  
PR: CC.

ELR 3301L LABORATORY 1 (1)  
PR: EGN 3373.

ELR 3302L LABORATORY 2 (1)  
PR: EGN 3374.

ELR 3303L LABORATORY 3 (1)  
PR: ELR 3301L.

ELR 4114 ELECTRICAL MEASUREMENTS (2)  
PR: EEL 3100. Techniques and principles of electronic measurement.

ELR 4115 ELECTRICAL MEASUREMENTS LABORATORY (1)  
CR: ELR 4114.

ELR 4221 SYSTEMS APPROACH TO BIOMEDICAL ENGINEERING II (3)  

ELR 4228 SYSTEMS APPROACH TO BIOMEDICAL ENGINEERING I (3)  
PR: EEL 4101 or CC. Characterization of physiological systems, principles of modeling, system properties. Transfer function description, physiological feedback, effects of nonlinearities.

ELR 4304L LABORATORY 4 (1)  

ELR 4305L LABORATORY 5 (1)  

ELR 4306L LABORATORY 6 (1)  

ELR 4313L DISTRIBUTED NETWORKS LABORATORY (1)  
Laboratory for EEL 4108.

MAP 4363 ENGINEERING ANALYSIS FOR COMPUTER SCIENCE III (3)  
PR: CC or MAP 4302. Vector analysis and methods of solution for boundary value problems in partial differential equations.

GRADUATE COURSES

COP 5001 TOPICS IN COMPUTERS AND PROGRAMMING (4)  
PR: CC. Machine organization, assembly and machine language, data structures, systems programming, operating systems.

COP 6530 DATA STRUCTURES (3)  
PR: CC. Representation of information and information structures in a computer system, linear linked lists, multilinked lists, algorithms for list manipulation, stacks, dequeues and queues, trees and binary trees, tree traversing algorithms.

COP 6613 OPERATING SYSTEMS (3)  
PR: CC. Operating systems functions and design, resource management, protection systems, process communication and deadlocks.

COP 6640 PROGRAMMING LANGUAGES AND TRANSLATION (3)  
PR: CC. Grammars and languages, symbols, strings, syntax, parsing, the design of a compiler, storage organization and symbol tables, translator writing systems.

EEL 5250 POWER SYSTEMS ANALYSIS (3)  
PR: CC. Analysis techniques for AC power systems.

EEL 5253 COMPUTER ANALYSIS OF POWER SYSTEMS (3)  
PR: CC. Review of Fortran programming, matrix algebra, network formulation, short circuit studies, simulation of algebraic equations, load flow studies, numerical solution of differential equations, transient stability studies. Strong emphasis on techniques adaptable to digital computer studies, programs will be written and run on the IBM 360/65.

EEL 5367 PULSE CIRCUIT PRINCIPLES (3)  
PR: EEL 4102, EEL 4300. An introduction to the analysis and design of pulse and timing circuits with applications.

EEL 5435 UHF PRINCIPLES (3)  
PR: EEL 4102, EEL 4300, EEL 4411. A study of tubes, devices, and circuits peculiar to systems which operate at ultra high and super high frequencies.

EEL 5455L UHF LABORATORY (1)  
CR: EEL 5435.

EEL 5620 NONLINEAR CONTROL SYSTEMS (3)  
EEL 5620L  CONTROL LABORATORY (1)
CR: EEL 5620.

EEL 5711  DIGITAL COMPUTERS (3)
PR: EEL 4705. Digital arithmetic; computer subsystems, arithmetic units; control units; memory units; general purpose computers.

EEL 5711L  DIGITAL LABORATORY (1)
CR: EEL 5711.

EEL 5730  SEQUENTIAL CIRCUITS (3)
PR: EEL 4705. The design of switching circuits with inputs that are functions of time is carried from a word description through a minimum state realization using flip-flops, logic gates and delay elements.

EEL 5755  DIGITAL SIGNAL PROCESSING TECHNIQUES (3)
PR: EEL 4102 or CC. Techniques of real time statistical analysis of signals, signal conditioning and enhancement. Design of digital networks.

EEL 5760  DISCRETE STRUCTURES FOR DIGITAL SYSTEMS (3)

EEL 5820  IMAGE PROCESSING BY COMPUTERS (3)
PR: EEL 4102 or CC. Two dimensional convolution and system functions. Fourier transform in two dimensions. Digitization of two dimensional signals, sampling theorems, band-limited signals. Image processing by computers. Applications of image processing.

EEL 5851C  FILE AND DATA ACCESS SYSTEMS (3)
PR: COP 4400. Introduction to data organization and file structure principles of mass storage devices. Sequential, consecutive, direct-access, indexed, and virtual file access methods are addressed.

EEL 5852C  DATA BASE SYSTEMS (3)
PR: EEL 5851. Fundamentals of data base management systems. CODASYL, network, hierarchical, and relational data base systems are analyzed, and typical applications are presented.

EEL 5853C  TELEPROCESSING AND TELECOMMUNICATIONS (3)
PR: Systems Analysis and Design. Fundamentals of teleprocessing and telecommunications from a software perspective. Multi-access remote communications structures and requirements, message queuing, teleprocessing monitors and software systems are addressed.

EEL 5935, 5936, 5937  SPECIAL ELECTRICAL TOPICS I, II, III (1-3 each)
PR: CC.

EEL 5931  ENGINEERING SEMINAR (1)
PR: CC.

EEL 6141, 6142, 6143  NETWORKS SYNTHESIS I, II, III (3,3,3)
PR: CC. Network functions; physical realizability; two terminal network synthesis methods; frequency transformation; potential analogy; approximation problems; insertion-loss and transfer function synthesis.

EEL 6150, 6151  ADVANCED CIRCUIT THEORY I, II (3,3)
PR: CC. Network fundamentals; network characterization; frequency analysis; superposition integrals; signal-flow techniques; stability problems; real-and-imaginary relations.

EEL 6152  NONLINEAR CIRCUITS (3)
PR: CC. Analytical and topological approaches to nonlinear circuits; nonlinear resonance; relaxation oscillations.

EEL 6174  OPTIMUM FILTERING AND IDENTIFICATION (3)
PR: CC or EEL 6631. Estimation theory and development of the Kalman-Wiener filters for continuous and discrete-time systems. System identification through deterministic and stochastic approaches. Application to control and communication systems.

EEL 6261, 6262, 6263  ELECTRIC POWER SYSTEMS I, II, III (3,3,3)
PR: CC. Steady-state and transient analysis of interconnected power systems; power circuit protection; transient characteristic of apparatus.

EEL 6270  LIGHTNING AND SURGE PROTECTION (3)
PR: CC. Methods of protection against overvoltage due to lightning. Ground wire shielding, systems and tower grounding, lightning arresters. Dynamic overvoltages, switching phenomena and system recovery voltages.

EEL 6271  PROTECTIVE RELAYING OF POWER SYSTEMS (3)
PR: EEL 5250, EEL 6261 or CC. Fundamentals of instrumentation. Design and operation of protective schemes for equipment in generation, transmission, and distribution circuits. Analysis of abnormal system conditions requiring relay operation.

EEL 6332  ELECTRICAL PROPERTIES OF THIN FILMS (3)
PR: EEL 4330 or equivalent and EEL 4411 or CC. Electrical properties of thin films as derived from Boltzmann's transport equation. The growth of thin films. The fabrication of electrical circuits with thin films. Lecture supplemented by laboratory experiments and demonstrations.

EEL 6351, 6352, 6253  SOLID STATE ELECTRONICS I, II, III (3,3,3)
PR: CC. Theory of operation and application of circuits and devices.

EEL 6386, 6389  PRINCIPLES OF SEMICONDUCTOR DEVICE MODELING I, II (3,3)
PR: EEL 4102, EEL 4411. A course sequence which emphasizes systematic methods of obtaining models which related device physics to terminal behavior and which provide appropriate comprises between accuracy and simplicity.

EEL 6387  NOISE THEORY (3)
PR: CC. Electrical noise and signals through linear filters and electronic systems.

EEL 6432  MICROWAVE COMPONENTS (3)
PR: CC. A study of directional couplers, junctions, cavities and other passive microwave components including microwave integrated circuits.

EEL 6433  MICROWAVE NETWORKS (3)
PR: CC. Scattering and transfer representations of n-port. Odd and even mode theory. Wave filters.

EEL 6434  MICROWAVE GENERATION AND AMPLIFICATION (3)

EEL 6482, 6483, 6484  ELECTROMAGNETIC FIELDS AND WAVES I, II, III (3,3,3)
PR: CC. Electromagnetic theory from the engineering point of view, propagation and reflection of waves, guided waves, resonant cavities, antennas and radiation.

EEL 6506  DATA TRANSMISSION (3)
PR: EEL 6508. Quantization theory, binary coding systems, ideal binary transmission, on-off keying, FSK, PSK, PCM applications.

EEL 6507  DATA TRANSMISSION II (3)
PR: EEL 6506. M-ary systems-MASK, MFSK, MPSK, orthogonal systems, multilevel and multistate coding, simplex codes,
orthogonal and biorthogonal codes, polsignal systems, synchronization methods.

EEL 6508 PULSE COMMUNICATIONS SYSTEMS
PR: CC. Sampling theory, pulse waveform generation and modulation. PAM, PWM, PPM, related multiplex systems, telemetry applications.

EEL 6531, 6532, 6533 THEORY OF COMMUNICATION I, II, III
PR: CC. Physical basis and statistical representation of electrical noise; filtering, modulation, and de-modulation of signals corrupted by noise; correlation techniques and linear prediction; statistical estimation of signal parameter; optimum filters and receivers; ambiguity functions and inverse probability. Quantitative measure of information sources, noise channels and channel capacity; an introduction to error-correcting codes.

EEL 6613 MODERN CONTROL THEORY
PR: EEL 4656, EEL 5620, EEL 6631, EEL 6640 or CC. A study of modern control techniques including optimum and adaptive control.

EEL 6631 DIGITAL CONTROL SYSTEMS
PR: EEL 4656. Sample-data and digital control processes.

EEL 6640 RANDOM PROCESSES IN CONTROL SYSTEMS
PR: EEL 4656. Analysis and design of control systems subject to random inputs and disturbances.

EEL 6756 SPECTRAL ANALYSIS BY COMPUTERS
PR: CC. Introduction to time series analysis by computers. Discrete Fourier methods applied to time series, sample spectrum, cross spectrum, smoothing of spectral estimators, distribution properties. Application to physical, biological and environmental problems.

EEL 6764 DIGITAL ARITHMETIC METHODS
PR: CC or EEL 5711. Study of the number systems and the algorithms used for digital arithmetic computation with emphasis in their implementation, speed and reliability considerations.

EEL 6765 COMPUTER DESIGN LANGUAGES
PR: CC or EEL 5711. Simulation languages for digital computer systems; APL, CDL and others. Simulation of elements, operations, sequences and a complete digital computer.

EEL 6766 COMPUTER ARCHITECTURE
PR: CC or EEL 6764 or EEL 6765. The macro-structure of computers is considered in this course, ranging from the orthodox von Neumann design to multiprocessors, stack processors, pipeline systems, and associative computers.

EEL 6822 PATTERN RECOGNITION THEORY

EEL 6823 COMPUTER APPROACHES TO PATTERN RECOGNITION

EEL 6830 CODING THEORY I
PR: CC. Error-correcting codes, algebraic block codes, linear codes and feedback shift registers. BCH codes and decoding methods.

EEL 6831 CODING THEORY II

EEL 6840 AUTOMATA THEORY I

EEL 6841 AUTOMATA THEORY II

EEL 6842 AUTOMATA THEORY III
PR: EEL 6841. Artificial languages, phase-structure grammars, operations on languages, decision problems, discrete value random processes, Markov processes, probabilistic sequential machines, non-deterministic sequential machines.

EEL 6908 INDEPENDENT STUDY
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

EEL 6912 THESIS: MASTER'S
PR: CC. Repeatable. (S/U only.)

EEL 6932 ADVANCED ENGINEERING SEMINAR
PR: CC. (1-3)

EEL 6935 SELECTED ELECTRICAL TOPICS
PR: CC. (1-3)

EEL 6936 SPECIAL ELECTRICAL PROBLEMS
PR: CC. (1-3)

EEL 7913 DISSERTATION: DOCTORAL
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

ELR 6117 ELECTRICAL MEASUREMENTS
PR: CC. Advanced techniques and principles of electronic measurement.

ELR 6118 MEASUREMENTS LABORATORY
CR: ELR 6117.

ELR 6310L ELECTRICAL LABORATORY
CR: EEL 6434.

ELR 6910 DIRECTED RESEARCH
PR: GR. Master's level. Repeatable. (S/U only.)

ELR 6911 GRADUATE RESEARCH METHODS
Special course to be used primarily for the training of graduate research assistants. Variable credit. Limited to a cumulative total of 5 credits per student. (S/U only.)

ELR 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 student. (S/U only.)

ELR 7910 DIRECTED RESEARCH
PR: GR. Ph. D. level. Repeatable. (S/U only.)

ESI 6198 CASE STUDIES IN INDUSTRIAL COMPUTER SYSTEMS
PR: CC. A case study approach to the definition and implementation of industrial computer systems. The role of automation within the industrial concern. Design of systems in inventory, production control, and related areas. Directing the computer function and systems development.

Energy Conversion and Mechanical Design

UNDERGRADUATE COURSES

ECH 4131 REACTING SYSTEMS I
PR: ECH 4104. Design and control of homogeneous chemical reactors, effect of mixing, temperature and flow characteristics. (3)

ECH 4215 TRANSPORT PHENOMENA
PR: ECH 4234, EGN 3354C, or EMC 3103. A comparative study of transport phenomena with emphasis on the macroscopic
applications of the balance and flux equations of momentum, energy, and mass.

**EMC 4234 MASS TRANSFER** (3)
PR: EMC 3121. Study of molecular and turbulent diffusion in fluids, diffusion in solids, mass transfer coefficients and interphase mass transfer. Qtr. II, III.

**EMC 4413 SEPARATION PROCESSES I** (3)
PR: MAC 3412, CR: EGN 3343. Introduction to the use of mass and energy balances and to chemical engineering thermodynamics through the description and analysis of separation processes (e.g., crystallization, distillation, osmosis, etc.) Qtr. I, II.

**EMC 4414 SEPARATION PROCESSES II** (3)
PR: ECH 4413 or CI. Emphasis on selection and design of separation processes. Familiarization with graphical techniques, group methods and other computational approaches used in design. Use of empirical correlations for size of equipment, efficiency of the process and quality of the separation. Qtr. III, IV.

**EMC 4615 DESIGN AND CASE PROBLEMS** (3)
PR: EGN 3613, ECH 4414. This part of the course exposes the chemical engineering student to the design of a chemical plant or a major part of a process. The annual A.I.Ch.E. student contest design problems and typical design problems supplied by local industries will be used. CASE PROBLEMS: This part of the course stresses engineering "art." The word "case" connotes a specific engineering problem situation actually experienced by someone in the past or present. The student must generate his own individual approach to problem solving, benefitting from those of others in the class.

**EMC 4714 INDUSTRIAL CHEMISTRY** (3)
PR: CHM 3210, ECH 4414. A critical study of selected chemical process industries in order to give the student a better understanding of the direct application of basic chemical process principles.

**EMC 3103 THERMODYNAMICS III** (4)
PR: EGN 3343. The study of energy conversion processes and cycles as modified for optimization of capacity and efficiency. Applications include pumps, compressors, turbines, internal combustion engines, power and refrigeration cycles.

**EMC 3117 HEAT TRANSFER I** (4)
PR: EMC 3121. The basic laws of conduction, convection and radiation; analysis of the effect on heat transfer of thermal conductivity, emissivity, fluid transport properties and Reynold's number. Lec.-lab.

**EMC 3301 PHYSICAL MEASUREMENTS I** (3)

**EMC 3303L ENERGY CONVERSION LABORATORY I** (3)
CB: EGN 3343. Introduction to engineering laboratory measurement with emphasis on the use of the library and the writing of technical reports. Experiments in the measurement of temperature, pressure, fluid flow, psychrometric properties of air, concentration, viscosity. Determination of mass-energy balances of simple systems. Preparation of formal engineering reports covering laboratory work.

**EMC 4104 THERMODYNAMICS IV** (4)
PR: EGN 3343 or CI. Introduction to Chemical Engineering Thermodynamics; Maxwell relations, properties of real substances and solutions, description of multicomponent systems in equilibrium. Qtr. III, IV.

**EMC 4112 ELECTRONIC EQUIPMENT COOLING** (3)

**EMC 4131 FUELS AND COMBUSTION** (3)
PR: EMC 3103 or EGN 4104. A study of chemical reactions as sources of energy. Emphasis on the combustion characteristics of gaseous, solid, and liquid fuels, and equipment needs to safely and economically control combustion processes. Lec.-lab.

**EMC 4311L CONTROLS LABORATORY** (1)

**EMC 4312 MECHANICAL CONTROL** (3)
PR: EGN 3373, EGN 3433L, and EMC 4411. Analysis of devices for measurement and control. Transmitters, error detectors, controllers, and final control elements. Block diagram representation.

**EMC 4314 PROCESS CONTROL SYSTEMS I** (3)
PR: EMC 4312 or CI. Analysis and design of process control systems. Consideration of typical control sensors and controllers as well as advanced process control techniques such as feedforward and ratio control.

**EMC 4402 DYNAMIC RESPONSE OF ENGINEERING SYSTEMS II** (3)
PR: EGN 3433L. Analysis of response of dynamic systems with emphasis on the inter-disciplinary nature of such response. A continuation of Dynamic Response I, EGN 3433L.

**EMC 4411 ANALOG AND DIGITAL SIMULATION I** (3)
PR: EGN 3433L or CI. The use of analog and digital computers as tools for the solution of engineering problems by means of simulation. Lec.-lab.

**EMC 4501 FLUID MACHINERY I** (4)
PR: EGN 3354c and EMC 3121 or CI. Performance characteristics of pumps and fans; energy conversion in fluid machines; design of piping and duct systems; proper selection of pumps and fans for given fluid systems; analysis of system efficiency parameters; correlation of design predictions with experimental data.

**EMC 4522L ENERGY CONVERSION LABORATORY II** (2)
PR: EMC 3303L. Continuation of EMC 3303L with emphasis on material and energy balances of mechanical and chemical systems and processes. Lec.-lab.

**EMC 4523 ENERGY CONVERSION LABORATORY III** (2)
PR: EMC 4522L or CI. Continuation of EMC 4522L. Emphasis on experiments involving momentum transfer of non-Newtonian fluids, heat conduction, and mass diffusion.

**EMC 4905 INDEPENDENT STUDY** (1-5)
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated up to 15 credit hours. (S/U only.)

**EMC 4930 SPECIAL TOPICS ENERGY CONVERSION I** (1-4)
PR: CC.

**EMC 4931 SPECIAL TOPICS ENERGY CONVERSION II** (1-4)
PR: CC.

**EML 3264 DYNAMICS OF MECHANICAL SYSTEMS** (3)
PR: MAC 3282, PHYS 3040. Plane and angular motion; velocity and acceleration curves, velocities and accelerations in mechanisms, static and dynamic force analysis. Rolling and sliding contact pairs, cams, gear tooth action. Lec.-lab.

**EML 4500 MACHINE ANALYSIS AND DESIGN** (3)
PR: EGN 3313. Stress analysis, stress strain relations, deflection analysis, shock and impact, selection of materials, principles of design. Lec.-lab.

**EML 4503 MECHANICAL DESIGN I** (3)
PR: EML 3264, EML 4500. Application of the principles of
engineering, mechanics, materials and manufacturing to the analysis and design of mechanical elements. Lec.-lab.

**EML 4513 POWER PLANT ANALYSIS AND DESIGN**

CR: EMC 3103, EMC 3117. Parameters affecting utility power production; daily load curves; estimation of future loads; economics of power generation; system efficiency as affected by the thermodynamic cycle, multunit scheduling, and load variation; heat transfer regions in the steam generator; water treatment methods.

**EML 4601 REFRIGERATION AND AIR CONDITIONING**

CR: EMC 3103, EMC 3117. Application of thermodynamics, heat transfer and fluid flow to the design of systems for controlling our environment; heating and cooling load calculations; psychrometrics of air conditioning processes.

**ENU 4142 INTRODUCTION TO NUCLEAR ENGINEERING I**

Neutron density and thermalization parameters; criticality calculations; transient flux parameters; reactor operation; control instrumentation.

**GRADUATE COURSES**

**ECH 6217 ADVANCED TRANSFER PHENOMENA**

PR: ECH 4215 or CI. Transport processes (mass, momentum and energy) are the underlying phenomena in energy conversion systems. This course expands and unifies the fundamental concepts introduced in undergraduate fluids and heat and mass transfer courses.

**ECH 6515 REACTING SYSTEMS II**

PR: ECH 4131 or CI. Dynamics of heterogenous reaction. Economic factors in the design of chemical reactors. Simulation of complex reacting systems.

**ECH 6616 DESIGN AND CASE STUDIES**

PR: ECH 4615. Plant and Process Design with emphasis on computer aided design.

**EMC 5107 INDUSTRIAL CHEMICAL ENGINEERING THERMODYNAMICS**


**EMC 5305 INSTRUMENTAL ANALYSIS**

PR: CHM 2047, PHY 3042. This course deals with the engineering bases of a variety of sophisticated instrumental techniques for chemical analysis. Emphasis is placed on the physical basis of the instrument and its design rather than on the interpretation of the analysis. Systems to be examined include light and r.f. spectroscopy, mass spectrometry and methods which depend on various transport properties.

**EMC 5315 HYDRAULIC CONTROL**

PR: EMC 4312 or CI. Hydraulic control system components and their effects on closed loop system performance. Lec.-lab.

**EMC 5502 FLUID MACHINERY II**

PR: EMC 4501. Performance characteristics of compressors and exhausters, vacuum pumps, and gas turbines; internal energy exchange and fluid flow paths; piping and ducting considerations; economic selection of proper equipment to match fluid and power system requirements; evaluation of off-design conditions.

**EMC 5510 POWER UTILIZATION SYSTEMS**


**EMC 5651 INDUSTRIAL AIR POLLUTION CONTROL**

PR: EGN 3343. A basic course in the elements of large source air pollution and control as presented from the engineering viewpoint. Major units to be studied: Sources, Atmospheric Meteorology, Diffusion, Local Influences. Control Measures, Emergencies, Protection. Lec.-lab.

**EMC 5930 SPECIAL TOPICS ENERGY CONVERSION III**

PR: CI.

**EMC 5931 SPECIAL TOPICS ENERGY CONVERSION IV**

PR: CI.

**EMC 6105 ADVANCED THERMODYNAMICS**

PR: CI. Advanced treatment of the general equations of thermodynamics, principal equations of chemical reaction; the chemical potential and equilibrium; analysis of metastable states. Irreversibility and steady flow.

**EMC 6106 THERMODYNAMICS OF FLUID FLOW**

PR: CI. Interrelationship of the equations of fluid motion and of thermodynamics for ideal gases; subsonic and supersonic gas flows, flows with friction and with heat transfer; super-sonic nozzle design; parameters of fluid thrust.

**EMC 6115 PROCESS HEAT TRANSFER I**

PR: EMC 3117. Review of conduction and convection, heat transfer, counterflow, i-2 parallel-counterflow, flow arrangements for increased heat recovery, calculations for process conditions, condensation and evaporation.

**EMC 6116 PROCESS HEAT TRANSFER II**

PR: EMC 3117, EMC 6115. Extended surface, longitudinal and radial fins, crossflow, finned passages, longitudinal high fin exchangers, radial flow fin exchangers, transverse high fin exchangers and compact heat exchangers.

**EMC 6118 HEAT TRANSFER II**

PR: EGN 4421, EMC 3117. Steady and unsteady heat transfer by conduction; one, two, and three dimensional systems, numerical, graphical, and analog methods, finite difference methods, and periodic conduction heat flow.

**EMC 6119 HEAT TRANSFER III**

PR: EGN 4421, EMC 3117, or CI. Radiative heat transfer. Radiation from black and "grey" bodies. Pure radiative heat transfer and in the presence of other modes of energy transfer.

**EMC 6302 PHYSICAL MEASUREMENTS II**

PR: EMC 3301, EMC 4411, EMC 4522L or CI. The techniques and theory for measuring temperature, pressure, displacement, speed, acceleration, force, power, and psychrometric properties with particular attention to dynamic measurement. Lec.-lab.

**EMC 6316 NUMERICAL MEASUREMENT AND CONTROL**

PR: CI. Incremental and absolute control systems. Number systems used in numerical control. Digital to analog and analog to digital conversion. Applications.

**EMC 6317 DIRECT DIGITAL CONTROL**

PR: EMC 4314 or CI. Application of digital computer to control of engineering processes. Includes study of digital filtering, Z-transforms, supervisory control. A/D and D/A conversion.

**EMC 6318 ADVANCED MECHANICAL CONTROL**

PR: EMC 4402 or CI. Applications of state space techniques to analysis and design of energy transfer control systems. Includes study of optimal control and adaptive control.

**EMC 6319 FLUID AMPLIFIERS AND CIRCUITS**

PR: CI. Analysis and design of fluid devices for use as amplifiers, logic devices and memory elements in instrumentation and control systems.

**EMC 6412 ANALOG AND DIGITAL SIMULATION II**

PR: EMC 4411 or CI. Introduction to mathematical modeling techniques applied to Mechanical and Chemical Engineering systems. The use of analog and digital computers in the solution of these models. Lec.-lab.
EMC 6415 DIGITAL TECHNIQUES IN ENERGY TRANSFER SYSTEMS (3)
PR: EMC 4411 or CI. Application of both general purpose and specialized programs to the solution of problems in the design of control systems, kinematic mechanisms and energy transfer systems. Some languages and programs to be used are FORTRAN, the Continuous System Modeling Program and the Mechanism Design Program.

EMC 6455 DIMENSIONAL ANALYSIS AND MODEL THEORY I (3)
PR: CC. Theory of dimensional analysis, similitude, and design of models.

EMC 6520 ENERGY TRANSFORMATION AND STORAGE (3)
PR: CC. Analysis of direct energy conversion systems, photovoltaic cells thermocouples, fuel cells, thermionic converters, magnetohydrodynamic devices, solar energy cells, rectifiers, inverters, energy storage devices.

EMC 6650 PROCESS DESIGN FOR ENVIRONMENTAL PROTECTION I (4)
PR: ECH 4615 or CI. Equipment and Process Design with emphasis on discharge control and environmental protection. Economic and ecological constraints on optimum design.

EMC 6906 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

EMC 6907 INDEPENDENT STUDY (var.)
Independent study in which students must have a contract with an instructor. Repeatable. (S/U only.)

EMC 6930 SPECIAL PROBLEMS I (1-4)
PR: CC.

EMC 6931 SPECIAL PROBLEMS II (1-4)
PR: CC.

EMC 6934 ADVANCED SEMINAR (1-3)
PR: CC.

EMC 6938 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.)

EMC 6939 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.)

EMC 6971 THESIS: MASTERS (var.)
Repeatable. (S/U only.)

EMC 7915 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

EMC 7980 DISSertation: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

EML 5221 MECHANICAL VIBRATION AND BALANCING (3)
PR: EGN 3321, EGN 4421. Transient and steady state vibration analysis of mechanical systems with lumped parameters. Dynamic balancing, vibration isolation and simulation of systems.

EML 5224 ACOUSTICS AND NOISE CONTROL (3)
PR: CC. Fundamentals of sound propagation; sound power and intensity; psychoacoustics, industrial noise sources, methods of noise attenuation; community noise ordinances; instrumentation for noise measurement. Lec.-lab.

EML 5241 LUBRICATION I (3)
PR: EGN 3354C, EGN 4421. The theoretical basis of lubrication and hydrodynamic bearing theory. The study of lubrication requirements of different types of machines.

EML 5273 ADVANCED DYNAMICS OF MACHINERY (3)
PR: EML 3264. A continuation of undergraduate course and devoted to a more detailed study of velocities, accelerations and forces in machine parts having reciprocating, rotating and combined motion. A complete force analysis will be made of an internal combustion engine.

EML 5505 MECHANICAL DESIGN II (3)

EML 5509 PROJECT DESIGN (3)
PR: CC. Correlation of previously acquired mechanical design experiences with a creative design project. Lec.-lab.

EML 5528 ANALYSIS METHODS FOR MECHANICAL DESIGN (3)

EML 5608 MECHANICAL UTILITIES SYSTEMS (3)
PR: EMC 4501. Analysis and design of a building's mechanical systems for fire and lightning protection, air conditioning, water supply, waste and storm drains.

EML 6054 AIR CONDITIONING SYSTEMS DESIGN (3)
PR: EML 4601, EML 6606 or CI. Design of an air conditioning system from the concept stage to final plans and specifications, stressing the practical application of basic theory and knowledge of types of systems available.

EML 6222 VIBRATION ANALYSIS (3)
PR: EML 5221. Application of generalized coordinates. Lagrange's equation, matrix iteration, and other specialized methods to discrete multimass systems.

EML 6225 ACOUSTICS AND NOISE CONTROL II (3)
PR: EML 5224. Continuation of EML 5224, Acoustics and Noise Control I.

EML 6235 APPLIED ENGINEERING: ASPECTS OF FATIGUE (3)

EML 6242 LUBRICATION II (3)
PR: EML 5241. A continuation of EML 5241 with emphasis on hydrodynamic squeeze film theory and gas lubricated bearings.

EML 6253 NOISE CONTROL DESIGN (1-3)
PR: EML 5224, EML 6225. Practical solutions to real noise problems occurring in local industries; students will be required to analyze a problem, design a "solution," and prepare and present a report to plant engineering personnel giving their analysis and recommendations; variable credit depending on complexity of problem.

EML 6533 ADVANCED MECHANICAL DESIGN (3)
PR: CC. A technical application course involving the problem of developing machines to perform specified functions. The machine to be designed will be designated by the instructor. The analysis will include evaluating all parts for stress, vibration, wear and proper consideration of manufacturing processes involved. Lec.-lab.

EML 6606 AIR CONDITIONING SYSTEMS (3)
PR: EMC 4501, EML 4601. Analysis and design of air conditioning systems; criteria for selection of central systems, unit air conditioners, or self-contained units; performance characteristics of single zone systems, with and without reheat, multizone systems, double duct and variable volume systems.
Industrial Systems

UNDERGRADUATE COURSES

EIN 4304C INDUSTRIAL PROCESSES (4)
PR: EGN 3613. Introduction to basic industrial processes emphasizing interdependency and similarities among industries. Students research specific industries and visit local industrial plants. Lec.-lab.

EIN 4312L PRODUCTION DESIGN I (3)
PR: EGN 3443, EIN 4304C. Methods study, predetermined time systems, wage administration, work measurement techniques including stop-watch time study, work sampling, standard data and production studies. Lec.-lab.

EIN 4313L PRODUCTION DESIGN II (3)
PR: EIN 4312L. Continuation of EIN 4312L. Lec.-lab.

EIN 4334 PRODUCTION CONTROL SYSTEMS I (3)
PR: ESI 4215, ESI 4314, ESI 4455. Principles and techniques of industrial planning and control systems design. Cost analysis, forecasting, and controlling production activities.

EIN 4335 PRODUCTION CONTROL SYSTEMS II (3)
PR: EIN 4334, ESI 4315. Advanced topics in industrial planning and control systems design including the use of CPM, PERT, and LOB.

EIN 4352 ENGINEERING VALUATION II (3)
PR: EGN 3613 or equivalent. Analysis of economic limitations on engineering projects. Income tax considerations, replacement models, MAPI, and obsolescence.

EIN 4364L PLANT FACILITIES DESIGN I (3)
PR: EIN 4313L, EIN 4352. Design and modification of plant facilities, including design of a complete manufacturing operation. Problems in plant location, layout, material handling, and equipment selection.

EIN 4366 PLANT FACILITIES DESIGN II (3)
PR: EIN 4364, ESI 4315, ESI 4521. Advanced techniques for evaluation of alternative plans for plant arrangement, including equipment location and material handling systems.

ESI 4120 COMPARATIVE COMPUTER LANGUAGES I (1)
PR: EGN 2210, EGN 3211. Comparison of higher level languages from viewpoint of structure, logic, data processing, speed, and ease of usage for applications to system problems. Included are FORTRAN, WATFIV, SIMSCRIPT, GPSS, PL-I, and ALGOL.

ESI 4121 COMPARATIVE COMPUTER LANGUAGES II (2)
PR: ESI 4120. Use of the higher level languages analyzed in ESI 4120 for specific applications to system design from the viewpoint of language comparisons and preferred choices. Additional comparisons are made with several procedure-oriented languages.

ESI 4132 HYBRID COMPUTERS (3)
PR: EGN 3211, ESI 4143. The use of hybrid computers for the solution of problems in systems analysis. Lec.-lab.

ESI 4141 COMPUTER SYSTEMS I (3)

ESI 4142 COMPUTER SYSTEMS II (3)
PR: ESI 4141. Study of computer hardware usage. Peripheral subsystems. Transfer of information and control within a complete operating system. Executive systems and control monitors.

ESI 4143 COMPUTER SYSTEMS III (3)
PR: ESI 4142. A continuation of ESI 4142 stressing detailed applications of machine and assembly language to computer operating systems.

ESI 4195 COMPUTER PROJECTS (3)
PR: EIN 4352, ESI 4121, ESI 4142, ESI 4521. Special projects involving the use and operation of digital computers.

ESI 4215 ENGINEERING STATISTICS II (3)
PR: EGN 3443. Estimating and testing procedures, regression and correlation analysis.

ESI 4221 STATISTICAL QUALITY CONTROL (3)

ESI 4244 DESIGN OF EXPERIMENTS I (3)
PR: EGN 3443. Development of the basic experimental designs. Randomized block, latin squares, and factorial designs.

ESI 4314 OPERATIONS RESEARCH I (3)
PR: EGN 4450. An introduction to the basic operations research techniques—linear programming, dynamic programming, simulation, and queuing.

ESI 4315 OPERATIONS RESEARCH II (3)
PR: ESI 4215, ESI 4314. Continuation of ESI 4314.

ESI 4316 SYSTEMS ANALYSIS AND DESIGN (3)
PR: EGN 3211, EIN 4334, ESI 4315. The definition and analysis of systems. The solution of industrial systems problems using dynamic programming, simulation, queuing, linear and non-linear programming.

ESI 4455 NETWORK MODELS (3)
PR: EGN 3211. A study of the design and analysis of network models as applied to the solution of process related situations.

ESI 4504 FORTRAN APPLICATIONS I (3)

ESI 4521 COMPUTER SIMULATION I (3)
PR: EGN 3211. Use of computers in physical and industrial systems. Simulation languages and their applications.

ESI 4573 NUMERICAL METHODS (3)
PR: EGN 4450. Continuation of materials in EGN 4450.

ESI 4905 INDEPENDENT STUDY (1-5)
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated up to 15 credit hours. (S/U only.)

GRADUATE COURSES

EIN 5218 HAZARD CONTROL ENGINEERING (3)
PR: Senior or graduate status. Open to non-majors. Nature of industrial accidents. Practices, standards, OSHA, and other governmental requirements for reducing accident frequency and severity in the industrial environment. Design measures for the prevention of health impairment due to non-accidental causes.

EIN 5245 HUMAN FACTORS (3)
PR: CC. Problems in the design, analysis, and evaluation of man-machine systems from the viewpoint of physical, mental, and psychological characteristics and limitations encountered.

EIN 5345 INVENTORY CONTROL (3)
PR: EIN 4335 or equivalent. Properties of inventory systems and the fundamentals of deterministic and probabilistic inventory models.

EIN 5353 ENGINEERING VALUATION STUDIES (3)
PR: CC. The analysis of economic considerations affecting engineering decision making. Not open to students who have had EIN 4352.

EIN 5389 TECHNOLOGICAL FORECASTING (3)
PR: Senior or graduate status. Open to non-majors. Recent developments in forecasting technical progress; morphological analysis, heuristic forecasts, intuitive methods, empirical and phenomenological models. Technology assessment.
The interrelation between machine, assembly, and procedure oriented languages. Introduction to the design of monitors, assemblers, compilers.

**ESI 6148 COMPUTER THEORY III**
- **PR:** ESI 6147. Continuation and extension of ESI 6147 emphasizing detailed design principles used in the construction of monitors, assemblers and compilers.

**ESI 6213, 6214 THEORY OF INDUSTRIAL STATISTICS I, II**
- **PR:** ESI 4215 or equivalent. Theoretical distributions, continuous and discrete expectation and estimation, properties sampling distributions.

**ESI 6238 THEORY OF RELIABILITY**
- **PR:** ESI 4215 or equivalent. Topics in statistical methodology which have applications in the field of reliability. Discrete and continuous distribution models, reliability estimation, reliability structure and growth models, and statistical design for reliability.

**ESI 6247, 6248 STATISTICAL DESIGN MODELS I, II**
- **PR:** ESI 6214 or equivalent. Design of experiment mathematical models, application of advanced analysis of variable techniques as applied to industrial problems.

**ESI 6336 QUEUING THEORY**
- **PR:** ESI 4215, ESI 4315. Deterministic and probabilistic queueing models. Poisson queues and special non-Poisson queues with exponential and non-exponential services. Single and multiple channel queues.

**ESI 6341, 6346 STOCHASTIC PROCESSES I, II**
- **PR:** ESI 5245. Theory and application of stochastic processes as models for empirical phenomena, with emphasis on the following processes: Poisson, stationary, normal, counting renewal, Markov, birth and death. Spectral representations, time series, smoothing and filtering.

**ESI 6405 NONLINEAR AND DYNAMIC PROGRAMMING**
- **PR:** ESI 6414. Optimization procedures using nonlinear and dynamic programming. Analysis of multi-stage systems.

**ESI 6414 LINEAR PROGRAMMING**
- **PR:** ESI 4315 or equivalent. The simplex method, degeneracy, duality theory; applications of linear programming to industrial problems.

**ESI 6491 MULTIVARIABLE OPTIMIZATION**
- **PR:** ESI 5216, ESI 5245. Optimum seeking methods; search methods, response surfaces, ridge analysis, and stochastic approximations.

**ESI 6550, 6551 INDUSTRIAL SYSTEMS DESIGN I, II**
- **PR:** ESI 4521. Design of integrated systems using statistical and operations research models. Simulation of integrated systems using digital, analog, and hybrid computers.

**ESI 6552 EVALUATION OF SYSTEM PERFORMANCE I**
- **PR:** EGN 4421, ESI 4215, ESI 4314, or CC. Application of probability and random processes to the design and evaluation of physical systems from the viewpoint of satisfying prescribed specification. System variabilities include random process inputs and system parameters treated as random variables. Problems.

**ESI 6553 EVALUATION OF SYSTEM PERFORMANCE II**
- **PR:** ESI 6552. Continuation of ESI 6552 with special emphasis.
upon writing the computer software required to implement the evaluation algorithms. Advanced problems.

ESI 6906 INDEPENDENT STUDY (var.)
Independent study in which students must have a contract with an instructor. Repeatable. (S/U only.)

ESI 6911 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

ESI 6991 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 five credits per student. (S/U only.)

ESI 6992 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 five credits per student. (S/U only.)

ESI 7911 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

ESI 7980 DISSERTATION: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

Structures, Materials, and Fluids
UNDERGRADUATE COURSES

CES 3910 DESIGN PRINCIPLES AND PRACTICE (2)

CES 3911 JUNIOR DESIGN IN STRUCTURES, MATERIALS, FLUIDS (2)
PR: Introductory Engineering Design. Introductory engineering design topics in structures, materials, fluids. Topics include design in drainage, metals, concrete, transportation system, water supply, wastewater treatment, hydraulic modeling. Lec.-pro.

CES 3912 JUNIOR LABORATORY IN STRUCTURES, MATERIALS, FLUIDS (2)
PR: Strength of Materials. Beginning laboratory experience in departmental facilities including the following laboratories: structures, mechanical testing, x-ray, corrosion, soils, surveying, stress analysis, fluids, water resources, dynamics. Laboratory records and reports are required. Lab.

CES 4001 STRUCTURES I (3)
PR: CES 4104. Analysis of simple structural systems, both determinate and indeterminate. Introduction to the use of energy methods in indeterminate analysis. Lecture.

CES 4002 STRUCTURES II (3)
PR: CES 4001. Introduction to the behavior of composite structural members; laminates, sandwich panels, reinforced concrete, timber and structures. Lec.-lab.

CES 4003 STRUCTURES III (3)

CES 4004 STRUCTURES IV (3)
PR: CES 4003. Analysis of suspension structures, towers, and tall buildings by both approximate and exact methods. Lec.-lab.

CES 4104 STRESS ANALYSIS (3)
PR: EGN 3331, MAP 4302. Analytical and experimental analysis of the mechanical behavior of deformable solids. Elastic and inelastic methods, plastic limit analysis, flexure and torsion of beams, photostaticity, electric strain gages, introduction to finite element computer methods. Lec.-lab.

CES 4124 STRUCTURAL MECHANICS (3)

CES 4208 STRUCTURAL DYNAMICS (3)
PR: CES 4124. Behavior of structural components and systems when subjected to periodic dynamic loads. Lecture.

CES 4501 CONCEPTS OF STRUCTURAL DESIGN (3)
PR: CES 4001. Applications of solid mechanics, materials science, and structural analysis to the design of building, bridge, aircraft, and ship structures. Critical review of current codes and specifications. Lec.-lab.

CES 4541 STRUCTURAL CONNECTIONS (3)
PR: CES 4501. Use of theoretical and experimental data in the analysis and design of structural connections in metal, wood, concrete and plastic. Lec.-lab.

CES 4617 STRUCTURAL DESIGN IN METALS (3)
PR: CES 4003, CES 4501. Design of ductile metallic structural elements and systems. Lec.-lab.

CES 4702 REINFORCED CONCRETE STRUCTURES (3)
PR: CES 4003, CES 4501. Design of reinforced concrete structures; interpretation and application of various codes and specifications governing design. Lecture.

CES 4711 PRESTRESSED STRUCTURES (3)

CES 4911 SENIOR DESIGN PROJECT (3)
PR: CES 4912. Problem-solving experience and training for seniors in research/design projects. Oral and written final reports are required.

CES 4912 SENIOR DESIGN IN STRUCTURES, MATERIALS, FLUIDS (2)
PR: Introductory Design Experience in Engineering. Intermediate level of design topics in structures, materials, fluids. Topics include design in structures, machine components, pipe flow, drainage, foundations, transportation systems, water supply, wastewater treatment, hydraulic modeling. Lec.-pro.

CES 4913 SENIOR LABORATORY IN STRUCTURES, MATERIALS, FLUIDS (2)
PR: Introductory Lab Experience in Engineering. Intermediate experience in departmental facilities including the following laboratories: structures, mechanical testing, x-ray, corrosion, soils, surveying, stress analysis, fluids, water resources, dynamics. Laboratory records and reports are required. Lab.

ECI 3505 ENGINEERING LAND SURVEYING (3)
Principles of land surveying for engineering practice. Traverses, levels, boundary surveys, route surveys, coordinate geometry, and mapping.

ECI 4311 SOIL MECHANICS I (3)
PR: EGN 3354C. Fundamental and experimental concepts in soil mechanics with emphasis on soil properties, soil moisture, soil structure, and shearing strength. Lecture.

ECI 4312 SOIL MECHANICS II (3)
PR: ECI 4311. A study of the application of the principles of soil mechanics to problems in soils engineering. Lecture.

ECI 4633 ADVANCED HYDROLOGY LABORATORY (3)
PR: ENV 4623. Practical experience in the solution of hydrologic problems including data collection, data processing, and the application of numerical computer models to watersheds.

ECI 4911 RESEARCH IN SMF (1-4)
PR: CC.

EGM 4124C EXPERIMENTAL MECHANICS I (3)
PR: EGN 3354C. An introduction to the experimental methods used in the study of structures, materials, fluids. Lec.-lab.

EGM 4125C EXPERIMENTAL MECHANICS II (3)
PR: CC. Review of elasticity, boundary value problems, finite
element solutions; static and dynamic applications, circuitry; grid, brittle coating methods. Lec.-lab.

**EMA 4224 SOLID MECHANICS IV**  

**EMA 4260 VIBRATIONS**  

**EGM 4340 ENGINEERING ANALYSIS SMF**  
PR: EGN 3211, MAP 4302. Computational methods for engineering problems found in Structures, Materials, and Fluids. Lec.-lab.

**EGM 4430 INTERMEDIATE DYNAMICS AND VIBRATION**  
PR: EGN 3321, MAP 4302. Dynamics of discrete and distributed mass, spatial kinematics, and kinetics, inertia tensor, Euler equations, vibrations. Lecture.

**EGM 4610 ANALYTICAL METHODS IN MECHANICS**  
PR: MAP 4302. Development of techniques of applied mathematics to SMF problems; partial differential equations, complex variable, vector and tensor analysis. Lecture.

**EGM 4816 HYDRAULICS**  

**EMA 4066 ENGINEERING POLYMERS**  
PR: CI. Structure and bulk properties of polymers. High elasticity, topics in viscoelasticity, the glass transition, irreversible deformation. Technology of plastics, fibers and elastomers. Lecture.

**EMA 4205 STRENGTHENING PROCESSES IN MATERIALS**  
PR: EMA 4303L. Introduction to the separate and combined effects of the primary strengthening mechanisms in materials. Applications to the real material systems such as steels, titanium, beryllium, nickel and refractory metal alloys; and composites. Lecture.

**EMA 4303L MATERIALS ENGINEERING III**  
PR: EGN 3343, EGN 3365L. Principles of chemical thermodynamics as applied to the interaction of materials with various gaseous, aqueous, and solid phase environments. Lecture.

**EMA 4324 CORROSION OF ENGINEERING MATERIALS I**  

**EMA 4503C EXPERIMENTAL METHODS IN MATERIALS ENGINEERING**  
PR: EMA 4303L or CI. Introduction to the experimental methods of metallography, X-ray diffraction, phase diagram determination, heat-treating techniques, and electron microscopy. Lec.-lab.

**EMA 4584 CEMENT AND CONCRETE**  

**EMA 4604 PROCESSES IN MATERIALS ENGINEERING**  
PR: EMA 4303L or CI. Introduction to the basic theories of solidification and ultrapurification of materials, discussion of the various techniques of welding and joining materials, and discussion of the primary methods of shaping and forming materials. Lecture.

**EMA 4605 DIFFUSION**  
PR: EMA 4303L. Theoretical and practical analysis of diffusion in solids including the physical meaning and implications of the concepts which influence and apply to diffusion in crystalline solids. Lecture.

**EMA 4644 ENGINEERING CERAMICS**  
PR: EGN 3365L. Detailed examination of the materials of ceramic engineering and the engineering properties of advanced ceramic products. Lecture.

**EMA 4703 CONCEPT OF ENGINEERING MATERIALS**  

**EMA 4704 SELECTION AND APPLICATION OF ENGINEERING MATERIALS**  
PR: EGN 3365L. Estimation and/or determination of the property requirements for the utilization of materials in specific applications; comparison of properties of metals, plastics, and ceramics; the effects of heat treatment, working, etc., on materials; property limitations exhibited by various materials. Lecture.

**EMA 4905 INDEPENDENT STUDY**  
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated up to 15 credit hours. (S/U only.)

**ENV 3001 ELEMENTS OF ENVIRONMENTAL ENGINEERING**  
PR: CI. An introduction to the scientific and engineering principles needed for the enhancement of the quality of man's environment. Discussions of air and water pollution; solid waste disposal; ionizing radiation, noise. The economic, aesthetic, legal and political aspects of environmental quality are considered.

**ENV 4111 INTRODUCTION TO AIR POLLUTION CONTROL**  
PR: CI. Behavior and effects of atmospheric contaminants and the principles of making measurements in the air environment are studied. Basic concepts of meteorology and control technology are discussed. Regulatory aspects and air pollution standards are covered. Lecture.

**ENV 4417 URBAN WATER SYSTEMS**  
PR: ENV 4622. A study of the engineering principles involved in the design and operation or urban water supply systems, urban drainage systems, urban waste collection systems, and urban waste water treatment systems.

**ENV 4622 WATER RESOURCES ENGINEERING I**  
PR: EGN 4816. A study of the engineering principles involved in the sustaining and managing of the quality and quantity of water available for human activities with particular emphasis on hydrology and hydraulics. Lecture.

**ENV 4623 WATER RESOURCES ENGINEERING II**  
PR: ENV 4622. A study of the engineering principles involved in the sustaining and managing of the quality and quantity of water available for human activities with particular emphasis on water uses, engineering economy, and regional water resource development. Lecture.

**TTE 4004 TRANSPORTATION I**  
PR: MAP 4302. Introduction to Transportation Engineering. Lecture.

**TTE 4006 TRANSPORTATION II**  
PR: TTE 4004. Transportation system planning. Lecture.

**GRADUATE COURSES**

**CES 6217 STRUCTURAL STABILITY**  
PR: CES 4003. Elastic and inelastic stability of trusses and frames, local buckling of structural members and plates. Lecture.
CES 6336 STRUCTURAL OPTIMIZATION (5)
PR: CES 4003, CES 4501. Use of optimization techniques in the
design of structures including use of the digital computer as a
design aid. Lec.-lab.

CES 6508 ADVANCED STRUCTURAL DESIGN (5)
PR: CES 4003, CES 4541. A study of design of more complicated
structural systems such as curved bridges, orthotropic bridges, tall
buildings, towers, suspension structures. Lecture.

CES 6915 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

CES 6938 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.)

CES 6939 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.)

CES 7915 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

EAS 5100 AERODYNAMICS (3)
PR: EGN 3354C. Fundamentals of compressible flow and flight
dynamics. Structural Design; materials consideration. Lecture.

ECI 6206, 6207 HYDROSACE 
ENGINEERING I, II (3,3)
PR: CI. Advanced analysis of structural, material, and fluid systems for marine environment, including underwater acoustics. Lecture.

ECI 6208 COASTAL AND ESTUARY MODELING (3)
PR: CI. Modeling of coastal and estuary systems, currents, tide heights, sediment transport, erosion, data collection, temperature distribution, sources, and sinks. Special emphasis on Florida. Lecture.

ECI 6239 FREE SURFACE FLOW (4)
PR: EGM 4816 or CI. Fundamental and applied aspects of free surface flow, including river hydraulics, canal flow, and open channel design. Lecture.

ECI 6631 HYDROLOGIC MODELS (4)
A study of the theoretical principles of hydrologic modeling and an examination of various numerical hydrologic models available. Students will be required to develop and apply computer models.

ECI 6632 URBAN HYDROLOGY (3)
PR: CI. A study of the quantity and quality problems and solution techniques associated with the subject of urban runoff.

ECI 6917 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)

ECI 6933 SPECIAL TOPICS IN SMF (1-4)
PR: CC.

ECI 6939 SMF SEMINAR (1-4)
PR: CC.

ECI 7980 DISSERTATION: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

EES 6203 WATER QUALITY FOR ENGINEERS (3)
PR: CI. An introduction to the form, structure, and biochemical activities of the important microorganisms which are essential to biological treatment processes for agricultural, domestic, and industrial wastewater.

EGM 5352, 5353 FINITE ELEMENT METHODS I, II (3,3)

EGM 5562 MECHANICS OF COMPOSITE MATERIALS (3)
PR: CES 4001. Physical and Mathematical models for compos-
Computer Service Courses

**UNDERGRADUATE COURSES**

**CDA 3040 S.C. INTRODUCTION TO COMPUTERS IV** (3)
PR: CDA 3102. Continuation of the material in CDA 3102. (No credit for engineering majors.)

**CDA 3101 S.C. INTRODUCTION TO COMPUTERS II** (3)
PR: COC 3300, COP 3110. Component parts of a computer system. Internal representation and manipulation of data and program instructions. Algorithms and flowcharting. Programming languages and systems. (No credit for engineering majors.)

**GRADUATE COURSES**

**CAP 5812 S.C. COMPUTERS FOR RESEARCH I** (3)
PR: Graduate student status. The use of FORTRAN IV and WAFIV languages in solving research problems.

**CAP 5813 S.C. COMPUTERS FOR RESEARCH II** (3)
PR: CAP 5812 or equivalent. Continuation of the material covered in CAP 5812. Use of computer library programs and plotting equipment.

**COP 5401, 5402 S.C. COMPUTER LANGUAGES AND COMPUTATION I, II** (3,3)
PR: CRM 5115. Study of principles of machine assembly and compiled languages. Programming applications.

**CRM 5115 S.C. COMPUTER SYSTEMS** (3)
PR: COP 3110 or equivalent. Study of computer systems components, 1/0 devices, theory of computer operation. (Not available to students who have taken CDA 3040, CDA 3101, and CDA 3102.)

**Engineering Technology**

**UNDERGRADUATE COURSES**

**BCN 4570 ACOUSTICS IN CONSTRUCTION TECHNOLOGY** (2)
Fundamentals of architectural acoustics, behavior of sound in closed spaces, noise control, and noise reduction.
ETC 4420 FUNDAMENTAL TOPICS IN CONSTRUCTION TECHNOLOGY II (3)  
PR: ETG 4504. Selection and application of materials in construction technology with associated consideration of material properties, change of properties and environmental effects.

ETE 4533 FUNDAMENTAL TOPICS IN POWER GENERATION (3)  
PR: Enrollment in Engineering Technology Program or Cl.  
Introduction to thermodynamics, forms of energy and energy equations, processes of a perfect gas, thermodynamic cycles, properties of steam, Rankine Cycle, equipment survey, heat transfer, fluid flow, combustion and mixtures of gases and vapors.

ETE 4930 INDEPENDENT STUDY (1-5)  
PR: Cl. Specialized independent study determined by the students' needs and interests. May be repeated up to 15 credit hours. (S/U only.)

ETG 4504 FUNDAMENTAL TOPICS IN CONSTRUCTION TECHNOLOGY I (5)  
PR: MAC 2244 or equivalent. Introduction to the principles of statics, equilibrium of rigid bodies, friction, strength of materials and application of materials and their properties in design of structures.

ETG 4931 SPECIAL TOPICS IN TECHNOLOGY I (1-5)  
PR: CC.

ETG 4932 SPECIAL TOPICS IN TECHNOLOGY II (1-5)  
PR: CC.

ETG 4933 SPECIAL TOPICS IN TECHNOLOGY III (1-5)  
PR: CC.

ETI 4600 INDUSTRIAL SYSTEMS (3)  
Introduction to organizational planning and control functions in industrial systems.

ETI 4614 PRINCIPLES OF INDUSTRIAL OPERATIONS I (3)  
PR: ETK classification or CC. Techniques of work measurement and methods design.

ETI 4644 PRINCIPLES OF INDUSTRIAL OPERATIONS II (3)  
PR: ETK classification or CC. Techniques of production control and inventory control.

ETI 4661 PRINCIPLES OF INDUSTRIAL OPERATIONS III (3)  
PR: ETI 4600, ETI 4614, ETI 4644. Techniques of plant location and layout.

ETM 4610 FUNDAMENTAL TOPICS IN AIR CONDITIONING (3)  
PR: Enrollment in Engineering Technology Program or Cl. Introduction to thermodynamics, forms of energy and energy equations, processes of a perfect gas, thermodynamic cycles, refrigeration cycles, properties of refrigerants, heat transfer and fluid flow, mixtures of gases and vapors, preliminary psychrometrics and analysis of motors.

ETM 4700 CLIMATE CONTROL IN BUILDINGS (3)  
PR: Enrollment in Engineering Technology Program or Cl. Heat and moisture in the atmosphere and human comfort, heat loads, heat sources, heat and ventilation distribution in spaces, air conditioning and air distribution, control of temperature and humidity.

ETM 4750 AIR CONDITIONING SYSTEMS DESIGN I (3)  
PR: ETM 4610 or Cl. Heating and Air Conditioning Load Calculations, design of packaged air conditioning systems, system selection, equipment selection and installation, ductwork design and air distribution, use of outside air with problems in bypassing and recirculation.

ETM 4750C AIR CONDITIONING SYSTEMS DESIGN II (3)  
PR: ETM 4750 or Cl. Design of applied air conditioning systems, advanced load calculations, system selection, chilled water systems, multizone systems, equipment survey: coils, chillers, fans and pumps, associated electrical equipment, controls, humidification, dehumidification, and installation.

ETM 4930 AIR CONDITIONING DESIGN SEMINAR (3)  
PR: ETM 4750C. Consideration of the total air conditioning system from the view of design engineer, client, and contractor. Specification writing, load calculation, system selection and installation, and cost criteria.

EVS 4650 SANITARY ENGINEERING IN CONSTRUCTION TECHNOLOGY (2)  
Water, water systems, and water supply. Sanitation and waste disposal, piping systems for hot and cold water, plumbing for sewage disposal and storm drainage.

GRADUATE COURSES

ETE 5100 INTRODUCTION TO ELECTRONICS FOR SCIENTISTS (5)  
Basic electronic devices and instruments, dc and ac circuits, diodes and power supplies, transistor, circuits, integrated circuits, laboratory instruments, transducers and special instruments. (2 three hour lecture labs, 1 two hour problem discussion). No credit toward graduate degree requirements.

ETG 6931 SPECIAL TECHNICAL TOPICS I (1-4)  
PR: CC.

ETG 6932 SPECIAL TECHNICAL TOPICS II (1-4)  
PR: CC.

ETG 6933 SPECIAL TECHNICAL TOPICS III (1-4)  
PR: CC.

ENGLISH

UNDERGRADUATE COURSES

AML 3010 HIGHLIGHTS OF AMERICAN LITERATURE TO 1945 (5)  
An introductory course consisting of selected highlights of American literature from the beginnings to 1945.

AML 3102 ROMANTIC AMERICAN LITERATURE TO 1860 (5)  
A study of the thought and art in poetry and prose of representative writers of the American Romantic period, with emphasis upon Emerson, Thoreau, Poe, Hawthorne, and Melville.

AML 3103 AMERICAN LITERATURE OF THE COLONIAL-FEDERAL PERIOD (5)  
The social, philosophic, political, and aesthetic foundations of
American literature, from the period of early settlement through the writings of Cooper, Irving, and Bryant.

AML 3107 AMERICAN LITERATURE FROM 1860 TO 1912
(5)
A study of representative works of selected American Realists and early Naturalists, among them Whitman, Dickinson, Twain, James, Howells, Crane, Dreiser, Wharton, Robinson.

AML 3111 MODERN AMERICAN LITERATURE FROM 1912 TO 1945
(5)
A study of poetry, drama, and fiction by such writers as Pound, Fitzgerald, Hemingway, Faulkner, Cummings, Williams, Anderson, Lewis, Steinbeck, Wright, Wolfe, West, Stevens, Henry Miller, and others.

AML 4214 MAJOR AMERICAN AUTHORS
(5)
The study of two or three related major authors in American Literature, focusing on several major figures; the course may include such writers as Melville and Hawthorne, Hemingway and Faulkner, James and Twain, Pound and Eliot, Stevens and Lowell, etc. Specific topics will vary each quarter. May be repeated with different topics two times.

AML 4320 LITERATURE OF THE SOUTH
(5)
PR: One course in American literature. A study of the major writers of the "Southern Renaissance," including writers such as Faulkner, Wolfe, Caldwell, Hellman, McCullers, O'Conor, Warren, Styron, Allen Tate, and Donald Davidson.

CRW 3230 IMAGINATIVE WRITING: FICTION
(5)
PR: ENC 3486. Introduction to the writing of fiction. This course will introduce students to the variety of forms and techniques in the writing of imaginative prose.

CRW 3310 POETIC FORMS
(5)
Study of the basic elements of poetry for reader and writer. Beginning with poetic language and devices used to create forms (haiku, tanka, ballad, song), progressing to basic prosody, rhyme, and stanza pattern, the student is trained in and learns to write fixed forms from couplet to sonnet. Consideration of the triolet, villanelle, sestina, blank verse, free verse, and naked poetry. Lyric, narrative, and dramatic poems from world literature serve as models.

CRW 3321 THE WRITING OF POETRY
(5)
Introduction to the writing of poetry. This course will introduce the student to a variety of forms and techniques in the writing of poetry.

CRW 4240 WORKSHOP IN FICTION
(5)
Study and writing of the short story and sections of the novel. Evaluation of student work in conferences, selected readings. May be taken twice for credit.

CRW 4340 WORKSHOP IN POETRY
(5)
Self-expression in traditional and contemporary forms. Student-teacher conferences and classroom discussion. Selected readings. May be taken twice for credit.

ENC 0013 DEVELOPMENTAL ENGLISH
(3)
Instruction and practice in the review of the fundamentals of English. Includes developmental work in English as applied in writing, with emphasis on grammar, punctuation, mechanics of expression and sentence structure. Students completing this course will by-pass ENC 1102.

ENC 1102, 1135, 1168 FRESHMAN ENGLISH
(3,3,3)
Instruction and practice in the skills of writing and reading. Courses must be taken in numerical sequence. Credit for Freshman English may be earned by examination.

ENC 3016 PRACTICAL GRAMMAR AND USAGE
(4)
Coverage of the traditional forms and practices of English grammar. A study of sentence patterns, sentence structure, agreement, punctuation, pronoun case, and related matters.

ENC 3466 ADVANCED EXPOSITORY WRITING
(5)
A course teaching the techniques for writing effective prose, excluding fiction, in which student essays are extensively criticized, edited, and discussed in individual sessions with the instructor.

ENC 3486 NARRATION AND DESCRIPTION
(5)
Writing short papers in narration and description, and the personal essay; analyzing selected essays to heighten sensitivity to language.

ENG 2201 INTRODUCTION TO LITERATURE: FICTION
(5)
An examination of the short story and the novel as literary forms; not limited to any historical period. Will not be counted toward the English major.

ENG 2231 CURRENT SHORT FICTION
(5)
Traditional and experimental short stories of this generation; such writers as Updike, Malamud, O'Connor, Roth, Barth, Ionesco, and Barthelme. Will not be counted toward the English major.

ENG 2300 CURRENT NOVELS
(5)
A study of major British and American novels since WW II; attention will be given to the cultural influences and recent literary trends. Will not be counted toward the English major.

ENG 2401 INTRODUCTION TO LITERATURE: DRAMA
(5)
A study of the major forms of drama—tragedy, comedy, melodrama, farce; including the works of such playwrights as Sophocles, Shakespeare, Moliere, Ibsen, Chekhov, and Shaw. Will not be counted toward the English major.

ENG 2460 CURRENT DRAMA
(5)
A study of recent forms and themes in drama from Theatre of the Absurd to the present, including works of such playwrights as Beckett, Ionesco, Genet, Pinter, and Albee. Will not be counted toward the English major.

ENG 2711 INTRODUCTION TO LITERATURE: POETRY
(5)
How poems work. Stress on the understanding and enjoyment of poems with attention to new forms and techniques; not restricted to any specific period. Will not be counted toward the English major except for those students following the Creative Writing: Poetry option.

ENG 3133 SHAKESPEARE: TEXTS AND FILMS
(5)
An introduction to the art of William Shakespeare through a comparative analysis of four of his most famous dramas and modern film adaptations of them; Hamlet, King Lear, Romeo and Juliet and Henry V.

ENG 3138 MODERN DRAMA AND FILM
(5)
A study of such major modern dramatists as Ibsen, Strindberg, Chekhov, Shaw, Brecht, Beckett, Ionesco, Genet, Pinter, and Albee. Films will demonstrate the possibilities of visualization.

ENG 3150 AMERICAN POPULAR LITERATURE: THE ROARING TWENTIES
(5)
An exploration of the interaction of film, literature, and the popular arts in the Roaring Twenties of the U.S. Traces the movement of American culture from Main Street and Spoon River to the Modern Urban Metropolis. Studies of such figures as Fitzgerald, Cummings, Hemingway, Stein, E. A. Robinson, Sandburg, Chaplin, and Bessie Smith.

ENG 3152 TWENTIETH CENTURY BEST SELLERS
(5)
A study of representative best-selling novels in 20th century America; including such critically acclaimed works as Peyton Place, Lady Chatterley's Lover, Exodus, and Catcher in the Rye, which have sold in excess of 5,000,000 copies and have served to portray our changing society and to reveal our changing literary taste.

ENG 3156 MODERN LITERATURE, FILM, AND THE POPULAR ARTS
(5)
Exploration into the nature and function of modern literature, film, and some of the popular arts like fantasy, westerns, science fiction, war stories, and detective stories. The works of such writers as Vonnegut, Tolkien, Thurber, Heller, Barthelme, Berger, and Kesey are examined.

ENG 3294 MODERN SHORT NOVEL
(5)
A study of the novella from the 19th century to the present.
ENG 3371 MODERN EUROPEAN NOVEL
A study of the Modern European novel in translation as it developed from the 19th century to the present, including such writers as Dostoevsky, Flaubert, Kafka, Hesse, Camus, and Solzhenitsyn.

ENG 4113 RESTORATION AND EIGHTEENTH CENTURY SATIRE
A study of selected Neoclassical satires, the techniques of their expression, and the historical conflicts out of which they arose.

ENG 4204 THEORY OF FICTION
Intensive study of the genres and varieties of fiction to ascertain the theoretical and technical problems involved in the work of fiction.

ENG 4223 MODERN AMERICAN FICTION
A study of major trends and influences in American prose fiction from 1920 to the present. Includes works by such writers as Hemingway, Faulkner, Wolfe, Fitzgerald, Steinbeck, Anderson, Welty, Malamud, Roth, Barthelme, and others.

ENG 4227 MODERN BRITISH FICTION
A critical study of British fiction, from 1900 to the present, with emphasis on such writers as Conrad, Lawrence, Joyce, Woolf, Forester, Huxley, Waugh, Durrell, Burgess, Powell, and others.

ENG 4321 EIGHTEENTH CENTURY BRITISH NOVEL
A study of the emergence of modern realistic prose fiction in the eighteenth century, with emphasis on Fielding, Richardson, Smollett, and Sterne.

ENG 4325 NINETEENTH CENTURY BRITISH NOVEL
A study of such major British novelists as Austen, Scott, Thackeray, Dickens, the Brontës, Eliot, Meredith, and Hardy.

ENG 4345 THE AMERICAN NOVEL
A study of major American novelists through representative novels. Authors studied may include Cooper, Hawthorne, Melville, James, Twain, Dreiser, Hemingway, Faulkner, Bellow, and others.

ENG 4421 ENGLISH DRAMA FROM THE BEGINNINGS TO 1662
The emergence of drama in England from its liturgical origins through the mystery and morality plays to its significant achievement in the Renaissance. Excludes Shakespeare; emphasis upon Marlow, Jonson, Webster, and Middleton.

ENG 4424 DRAMA OF THE RESTORATION AND EIGHTEENTH CENTURY
A study of the bawdy theatre of Charles II's court, as it reflects and projects English social life in the 17th century, and an analysis of the development of 18th century drama. Investigates relationships among drama, novel, and English opera. Included are representative works by Wycherley, Dryden, Congreve, Lillo, Gay, Goldsmith, and Sheridan.

ENG 4453 AMERICAN DRAMA
A historical-analytical study of American drama from the 19th century to the present. Included are such playwrights as Boker, Bouchicault, Herne, O'Neill, Howard, Rice, Hellman, Williams, Miller, Albee, and Hansberry.

ENG 4464 MODERN DRAMA
A study of major dramatists from the rise of Realism up to the Theatre of the Absurd, including works by Ibsen, Strindberg, Shaw, Chekhov, Pirandello, Brecht, Beckett, Ionesco, Pinter, and others.

ENG 4512 HISTORY OF THE ENGLISH LANGUAGE
The evolution of language from Anglo-Saxon through Middle English to Modern English. Changes in the pronunciation, syntactic, and semantic systems; discussion of the forces which influenced them; a consideration of how these changes may influence the interpretation of literature.

ENG 4742 MODERN BRITISH AND AMERICAN POETRY FROM 1900 TO 1945
Study of selected Modern British and American Poets from Hopkins to Auden, with attention to poetic theory.

ENG 4744 CONTEMPORARY BRITISH AND AMERICAN POETRY FROM 1945 TO THE PRESENT
Intensive study of six or seven contemporary poets: Theodore Roethke, Robert Lowell, Allen Ginsberg, Denise Levertov, Sylvia Plath, Edward Field, Bob Dylan, or others.

ENG 4814 LITERARY CRITICISM
A study of the works of major literary critics from Aristotle to the present, with emphasis on their meaning, their implied world view, and their significance for our own time and literature.

ENG 4900 DIRECTED READING
Readings in special topics.

ENG 4906 INDIVIDUAL RESEARCH
Directed study in special projects. Special permission of chairperson required.

ENL 3010 EARLY ENGLISH LITERATURE
A survey of representative works of poetry, prose, and drama of the Old English, Middle English, and early Renaissance to 1557, including Beowulf, Chaucer, Malory, More, Hooker, Skelton, Wyatt, among others.

ENL 3030 HIGHLIGHTS OF BRITISH LITERATURE TO 1750
An introductory course consisting of selected highlights of English literature from the Middle Ages to 1750.

ENL 3041 HIGHLIGHTS OF BRITISH LITERATURE 1750 TO 1945
An introductory course consisting of selected highlights of English literature from 1750 to 1945.

ENL 3133 SHAKESPEARE I
Reading of eight to ten representative plays, with special attention to developing the students' ability to read and interpret the text.

ENL 3320 LITERATURE OF THE ENGLISH RENAISSANCE
A survey of representative works of poetry, prose, and drama of the English Renaissance, from approximately 1558 to 1649, including Sidney and Spenser to Donne and Marvell, with special attention to the emergence of the New Poetry.

ENL 3351 THE RISE AND DECLINE OF NEOCLASSICAL LITERATURE
A survey of Neoclassical English literature beginning with Marvel and the late work of Milton, and ending with the late Neoclassicism of Johnson, Boswell, and Goldsmith.

ENL 3401 ROMANTIC LITERATURE
The poetry and poetics of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats; with attention to the lesser figures, the eighteenth century background, and the continuing importance of romantic thinking in contemporary affairs and letters.

ENL 3430 VICTORIAN AND EDWARDIAN LITERATURE
A survey of representative figures of the Victorian and Edwardian periods, ending in 1914, including poetry, prose, and drama of such authors as Carlyle, Tennyson, Browning, Swinburne, Rossetti, Dickens, Wilde.

ENL 3441 MODERN BRITISH LITERATURE FROM 1914 TO 1945
Survey of poetry, drama, and fiction of such writers as Eliot, Yeats, Thomas, Conrad, Shaw, Joyce, Lawrence, Huxley, Woolf, Forster, Waugh, Owen, Auden, O'Casey, among others.

ENL 4062 MAJOR BRITISH AUTHORS
The study of two or three related major authors in English literature, focusing on several major figures; the course may include such writers as Fielding and Austen, Thackeray and Dickens, Keats and Yeats, Donne and Marvell, Woolf and Joyce,
ENL 4112 CHAUCER (5)
An intensive study of The Canterbury Tales and major critical concerns.

ENL 4121 MILTON (5)
Study of the poetry and major prose of John Milton, with special emphasis on Paradise Lost.

ENL 4134 SHAKESPEARE II (5)
Three or four of Shakespeare's greatest dramas seen in depth; the close reading of the text, the controversies of interpretation, and the Elizabethan and Jacobean setting.

ENL 4300 ANGLO SAXON LITERATURE (5)
A study of English heroic culture as presented in the literature occurring before 1066, such as Beowulf, the Battle of Maldon, the Seafarer, and Selected Charms and Spells.

ENL 4311 MIDDLE ENGLISH LITERATURE (5)
An intensive study of one or more formal types occurring between 1066 and 1500, such as the Romance, the Dream-Vision, the Arthurian tradition, the drama, and lyrics and ballads.

ENL 4331 SIXTEENTH CENTURY PROSE AND POETRY (5)
A study of representative prose, including fiction, and the lyric and narrative poetry of Sidney, Spenser, Marlowe, and Shakespeare, together with selected poems of Donne.

ENL 4344 SEVENTEENTH CENTURY LITERATURE: FORM, GENRE, AND MODE (5)
Study of one or more types, genres, modes, and themes of English literature; 1600-1660, such as metaphysical Poetry, Cavalier Mode, Devotional Literature, New Philosophy, Analytical Prose, Verse Satire. Specific topics will vary.

ENL 4406 ROMANTIC LITERATURE: FORM, GENRE, AND ARCHETYPE (5)
An intensive study of one or more formal types of British literature occurring between 1785 and 1852, such as Romantic Nature Poetry, Romantic Historical Novels and Poems, etc. Specific topics will vary.

ENL 4413 VICTORIAN LITERATURE: FORM, GENRE, AND ARCHETYPE (5)
An intensive study of one or more formal types of Victorian literature, such as the essay, the lyric, the longer poem, prose fiction, etc. Specific topics will vary.

ESL 1422 ENGLISH AS A SECOND LANGUAGE—COMPOSITION (3)
PR: Some previous study of English. Practice and drill in basic English sentence patterns, with emphasis on writing, punctuation, vocabulary, and idiom. The course is designed as a service course for foreign students enrolled in the University.

LIN 4370 STRUCTURE OF AMERICAN ENGLISH (5)
An introductory study of traditional, structural, and generative-transformational grammars and their techniques for the analysis and description of linguistic structure in general, and contemporary American English in particular.

LIN 4420 LINGUISTICS AND LITERATURE (5)
The application of relevant materials from the fields of comparative and descriptive linguistics to analysis and interpretation of literature—poetry, prose, and drama, with a view to complementing the traditional modes.

LIT 2000 INTRODUCTION TO LITERATURE: GENERAL (5)
The nature and significance of literature in its various forms: fiction, drama, poetry; emphasis on the techniques of reading literature for intelligent enjoyment. Will not be counted toward the English major.

LIT 3150 CONTEMPORARY BRITISH AND AMERICAN LITERATURE FROM 1945 TO THE PRESENT (5)
An introduction to the fiction, poetry, and drama of such writers as Beckett, Ginsberg, Nabokov, Roethke, Plath, Vonnegut, Welty, Malamud, Durrell, Mailer, MacLeish, and others.

LIT 3252 LITERATURE OF THE WESTERN WORLD: ANCIENT (5)
The Bible, the best modern English translations of Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Plato, or others among the Greeks; of Virgil, Ovid, Juvenal, Sappho, Petronius or others among the Romans.

LIT 3254 LITERATURE OF THE WESTERN WORLD: MEDIEVAL, RENAISSANCE, AND NEOCLASSICAL (5)
A study in English of such writers as Dante, Boccaccio, Machiavelli, Rabelais, Montaigne, Moliere, among others, and of their cultural and intellectual settings.

LIT 3257 LITERATURE OF THE WESTERN WORLD: MODERN (5)
A study in English of Voltaire, Rousseau, Goethe, Baudelaire, Tolstoy, Mann, Lorca, Brecht, or others; the great literary traditions of Romanticism, Naturalism, and Symbolism.

LIT 3281 FOLKLORE AND POPULAR LITERATURE (5)
Literature of fairytales, folksongs, ballads, and blues. Perrault, Grimm, Andersen, and others; traditional British and American ballads and folksongs; modern ballads and blues from folk, country, delta, and big city sources; the songs of Bob Dylan and friends.

LIT 3311 THE BIBLE AS LITERATURE (5)
Major emphasis on literary types, literary personalities of the Old and New Testaments, and Biblical archetypes of British and American literary classics.

LIT 3314 THE TALMUD AS LITERATURE (5)
An introduction to the artistic elements of one of the great books of the Jewish religion. Emphasis on stories, fables, legends (Agadah), but some general background in Talmudic structure and history is also provided. No previous knowledge of Judaism or religious texts is required.

LIT 3323 AMERICAN INDIAN LITERATURE (5)
A survey of native American Literature from pre-Columbian religious and folk literature to the current voices in the pan-Indian movement.

LIT 3332 BLACK LITERATURE (5)
A study of Black American literature from the nineteenth-century to the present, including the works of such writers as W. E. B. DuBois, Jean Toomer, Langston Hughes, Richard Wright, Ralph Ellison, LeRoi Jones, and Nikke Giovanni.

LIT 3414 THE IMAGE OF WOMEN IN LITERATURE I (5)
A study of feminism, antifeminism, sexual identity, the feminine mystique, stereotyped and liberated female images from Sappho through Shakespeare, with special emphasis on how this early literature has perpetuated cultural myths, rituals, superstitions, and misconceptions about women. (Also offered under Women's Studies.)

LIT 3415 THE IMAGE OF WOMEN IN LITERATURE II (5)
A study of feminism, antifeminism, sexual identity, the feminine mystique, stereotyped and liberated female images from the 17th century to the present, with special emphasis on women writers and on the emergence of the women's movement. (Also offered under Women's Studies.)

LIT 3431 RELIGIOUS AND EXISTENTIAL THEMES (5)
Theological and philosophical ideas, allusions, and symbols in the writings of Dostoevsky, Nietzsche, Mann, Joyce, Eliot, Camus, Sartre, and others.

LIT 3442 FANTASY AND SCIENCE FICTION (5)
A survey of fantasy and science fiction in England and America from Mary Shelley to the present; includes such writers as Poe, Melville, Ray Bradbury, Arthur C. Clarke, among others.
ENG 6837 STUDIES IN STYLE
(Advanced Composition for Teachers)
PR: Graduate standing. Poetics, rhetoric, dramatic style, prose style, short fiction, the novel, and the essay. May be retaken with different subject matter three times.

ENG 6917 DIRECTED RESEARCH
PR: GR. Master's level. Repeatable. (S/U only.)

ENG 6937 GRADUATE SEMINAR IN ENGLISH
PR: Consent of graduate adviser. May be retaken with different subject matter to a maximum of ten hours.

ENG 6971 THESIS: MASTER'S
Repeatable. (S/U only.)

ENG 7917 DIRECTED RESEARCH
PR: GR. Ph.D. level. Repeatable. (S/U only.)

ENG 7938 DOCTORAL SEMINAR
PR: Admission to Ph.D program. This seminar will provide intensive small-group discussion as well as shared and individual guided research in a student's area of doctoral specialty over two consecutive academic quarters.

ENG 7980 DISSERTATION: DOCTORAL
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

ENL 6304 STUDIES IN OLD ENGLISH
PR: Graduate standing. A study of Old English language, prose style, poetry. May be retaken with different subject matter three times.

ENL 6315 STUDIES IN MIDDLE ENGLISH
PR: Graduate standing. Selected focused studies in language and in various authors and writings, 1100-1500: Chaucer, the Pearl poet, Everyman, ballads, drama. May be retaken with different subject matter three times.

ENL 6333 STUDIES IN SIXTEENTH-CENTURY BRITISH LITERATURE
PR: Graduate standing. Selected focused studies in 16th-century British literature: Shakespeare, Sidney, Spenser, Marlowe, and others. May be retaken with different subject matter three times.

ENL 6349 STUDIES IN SEVENTEENTH-CENTURY BRITISH LITERATURE
PR: Graduate standing. Selected focused studies in British literature, 1600-1660: Bacon, Donne, Jonson, Herbert, Milton, and others. May be retaken with different subject matter three times.

ENL 6392 STUDIES IN RESTORATION AND EIGHTEENTH-CENTURY BRITISH LITERATURE
PR: Graduate standing. Selected focused studies in Restoration-Eighteenth-Century British literature: Dryden, Defoe, Pope, Swift, Fielding, Sheridan, Johnson, Boswell, and others. May be retaken with different subject matter three times.

ENL 6407 STUDIES OF THE ENGLISH ROMANTIC PERIOD
PR: Graduate standing. A study of pre-Romantic and Romantic prose, fiction, nonfiction, and poetry. May be retaken with different subject matter three times.

ENL 6418 STUDIES IN VICTORIAN LITERATURE
PR: Graduate standing. A study of Victorian poetry, Victorian fiction, Victorian non-fictional prose, and Victorian drama. May be retaken with different subject matter three times.

ENL 6447 STUDIES IN MODERN BRITISH LITERATURE
PR: Graduate standing. A study of Irish and English drama, the modern novel, poetry, criticism, and the short story. May be retaken with different subject matter three times.

LAE 6375 PROBLEMS IN COLLEGE ENGLISH INSTRUCTION: COMPOSITION
PR: Graduate standing. An examination of the objectives of freshman English and an investigation of current techniques for achieving those objectives, emphasizing the problems of develop-
ing critical reading and the techniques of expository writing at the college level.

**LAE 6389 PROBLEMS IN COLLEGE ENGLISH INSTRUCTION: LITERATURE**

PR: Graduate standing. A course that will allow the prospective college English teacher to experiment with teaching techniques that will determine the most effective ways to teach literature and that will teach college English teachers the variety and importance of literary techniques and their relevance to subject matter.

**LAE 6392 GRADUATE INSTRUCTION METHODS**

Special course to be used primarily for the training of teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

**LAE 7376 PROBLEMS IN ADVANCED ENGLISH INSTRUCTION OF COMPOSITION**

PR: Admission to the Ph.D. program in English. Apprenticed, closely supervised study of and practice in teaching of college and university advanced composition. Student may elect to work with nonfiction, fiction, or poetry.

**LAE 7390 PROBLEMS IN ADVANCED ENGLISH INSTRUCTION AND SCHOLARLY RESEARCH**

PR: Ph.D. Candidacy. This course is to provide closely supervised training in upper-level college English instruction and experience with professional research. Experience in the lecture, seminar discussion, examining, evaluation, conferences, directing undergraduate research, course development, use of secondary materials, publication procedure, and collation.

**LIT 6167 STUDIES IN CONTEMPORARY LITERATURE**

PR: Graduate standing. Drama, poetry, fiction, and literary criticism; authors to be studied include Jonesco, Thomas, Miller, T. Williams, Beckett, Camus, and Burgess. May be retaken with different subject matter three times.

**LIT 6208 STUDIES IN CONTINENTAL LITERATURE**

PR: Graduate standing. General areas include the Renaissance, the Enlightenment, the Novel in Europe, the Romantic Movement on the Continent, and Classical Comedy. May be retaken with different subject matter three times.

**LIT 6934 SELECTED TOPICS IN ENGLISH STUDIES**

PR: Graduate standing. Current topics offered on a rotating basis include The Nature of Tragedy; The Nature of Comedy and Satire; The Nature of Romanticism and Classicism; and The Nature of Myth, Allegory, and Symbolism. Other topics will be added in accordance with student demand and instructor interest.

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## GENERAL PURPOSE COURSES IN TRANSLATION

### UNDERGRADUATE COURSE

**IDS 3150 DIALOGUE IN ENVIRONMENTAL SURVIVAL**

A multi-disciplinary course dealing with environmental problems. For non-science majors. (S/U only.)

## FOREIGN LANGUAGES


### General Foreign Languages

#### UNDERGRADUATE COURSES

**FOL 3100 GENERAL FOREIGN LANGUAGE I**

A general purpose course that may be used for transfer of credit, credit by examination, and similar matters; may also be used for formal courses in less-commonly taught languages or in professional translation.

**FOL 4200 GENERAL FOREIGN LANGUAGE II**

A general purpose course that may be used for transfer of credit, credit by examination, and similar matters; may also be used for formal courses in less-commonly taught languages or for workshops in professional interpreting.

**FOL 4905 DIRECTED STUDY**

Departmental approval required.

#### GRADUATE COURSE

**FOL 5906 DIRECTED STUDY**

PR: FOL 4200 or equivalent.

### Arabic

#### UNDERGRADUATE COURSES

**ARA 3110 MODERN ARABIC I**

An intensive study of the basic grammar, syntax, pronunciation, and development of reading and oral skills.

### Classics

#### COURSES IN TRANSLATION

**CLT 3040 CLASSICAL WORD ROOTS IN SCIENCE**

A course in the Greek and Latin word stock used in all sciences (including medicine), technology, and law. Students' needs determine specific content of the course.

**CLT 3290 CLASSICAL LITERATURE IN TRANSLATION: TRAGEDY**

Introduction to the masterworks of Greek and Roman tragedy, with analysis of plays by Aeschylus, Sophocles, Euripides, and Seneca.

**CLT 3300 CLASSICAL LITERATURE IN TRANSLATION: COMEDY AND SATIRE**

Survey of the major works of Greek and Roman comedy and satire, including works by Aristophanes, Menander, Terence, Plautus, Petronius, Martial, Horace, and Juvenal.

**CLT 3322 CLASSICAL LITERATURE IN TRANSLATION: EPIC AND LYRIC**

Study of epics and short lyric forms in Greco-Roman literature, including Homer and Vergil, poets from the 'Greek Anthology,' Catullus, Propertius, and Horace.

**CLT 3370 CLASSICAL MYTHOLOGY**

Study of the more important myths of the Greeks and Romans as laid down in classical literature and of the impact that Classical...
mythology made on modern Western and, in particular, English literature.

For **GREEK** courses, see **GRE** and **GRW** prefixes. For **LATIN** courses, see **LAT** and **LNW** prefixes.

### French

#### UNDERGRADUATE COURSES

**Courses in Translation**

FRT 3110 **HIGHLIGHTS OF FRENCH LITERATURE IN TRANSLATION** (4)
A study in English of French life through writers since the revolution. Elective for students in all departments.

FRE 1060 **FRENCH FOR READING** (3)
Designed to provide a reading ability in French that will support research in other disciplines.

FRE 1100 **BEGINNING FRENCH I** (3)
The first course in the study of elementary French. Emphasis on the development of basic skills in comprehension, speaking, and reading.

FRE 1101 **BEGINNING FRENCH II** (3)
PR: FRE 1100 or equivalent. A continuation of FRE 1100.

FRE 1102 **BEGINNING FRENCH III** (3)
PR: FRE 1101 or equivalent. A continuation of FRE 1100 and FRE 1101.

FRE 2200 **INTERMEDIATE FRENCH I** (4)
PR: FRE 1102 or equivalent. A review of the basic structure of French. May be taken concurrently with FRE 2201.

FRE 2201 **INTERMEDIATE FRENCH II** (4)
PR: FRE 1102 or equivalent. Readings in French on the intermediate level. May be taken concurrently with FRE 2200.

FRE 3240 **CONVERSATION I** (4)
PR: FRE 1102. For development of basic conversational skills.

FRE 3240 **COMPOSITION I** (4)
A fundamental composition course for students who have completed FRE 2200 or FRE 2201.

FRE 3500 **FRENCH CIVILIZATION** (4)
Readings and discussion on the cultural history of France.

FRE 4241 **CONVERSATION II** (4)
PR: FRE 3240 or equivalent proficiency. Conversation practice with concentration on current idiomatic usage.

FRE 4241 **COMPOSITION II** (4)
Continuation of French composition. This course is designed to follow FRE 3420.

FRE 4905 **DIRECTED STUDY** (1-4)
Departmental approval required.

FRE 4930 **SELECTED TOPICS** (1-4)
Study of an author, movement, or theme.

FRT 3110 **See above—COURSES IN TRANSLATION**

FRW 4100 **INTRODUCTION TO FRENCH NOVEL** (4)

FRW 4101 **INTRODUCTION TO FRENCH POETRY AND DRAMA** (4)

### GRADUATE COURSES

FRW 4910 **DIRECTED RESEARCH** (4)
PR: Graduate standing. A study in depth of Old French literature of the Middle Ages.

FRW 6405 **OLD FRENCH** (4)
PR: Graduate standing. An introduction to the Old French language and literature. Readings from representative texts. Required of all M.A. candidates.

FRW 6411 **MEDIEVAL LITERATURE** (4)
PR: Graduate standing. A study of the works of Corneille, Racine, or Moliere.

GRW 5934 **SELECTED TOPICS** (1-4)
Study of an author, movement, or theme.

GRW 5971 **THESIS: MASTER’S** (var.)
Repeatable. (S/U only.)

FRW 5226 **20TH CENTURY POETRY AND THEATRE** (4)

FRW 5228 **TRANSLATION** (4)
PR: FRW 4101. Proust, Gide, Mauriac, Malraux, Camus, Robbe-Grillet.

FRW 5230 **CLASSICAL DRAMA** (4)
PR: FRW 4100. Corneille, Moliere, and Racine.

FRW 5410 **LITERATURE OF THE MIDDLE AGES** (4)
PR: FRW 4100. Major genres, including epics, Arthurian romances, drama, and lyric poetry. Reading in modern French translation.

FRW 5420 **LITERATURE OF THE RENAISSANCE** (4)

FRW 5440 **18th CENTURY LITERATURE** (4)
PR: FRW 4100. The classical tradition and the new currents of thought in the Age of Enlightenment.

FRW 5530 **PRE-ROMANTICISM** (4)

FRW 5535 **ROMANTICISM** (4)
PR: FRW 4101. A study of the romantic movement with emphasis on Lamartine, Vigny, Musset, and Hugo.

FRW 5550 **REALISM** (4)
PR: FRW 4101. A detailed study of realism with emphasis on Balzac and Flaubert.

FRW 5558 **NATURALISM AND SYMBOLISM** (4)
PR: FRW 4101. A detailed study of the naturalist school with emphasis on Zola, les Goncourt, Maupassant, and Daudet.

FRW 5934 **SELECTED TOPICS** (1-4)
PR: Upper-level or graduate standing. Study of an author, movement, or theme.

FRW 6405 **OLD FRENCH** (4)
PR: Graduate standing. An introduction to the Old French language and literature. Readings from representative texts. Required of all M.A. candidates.
German

UNDERGRADUATE COURSES

Courses in Translation

GET 3111 HIGHLIGHTS OF GERMAN LITERATURE IN TRANSLATION
An analysis in English based on translations of the most significant works of the middle ages of Luther, Grimmshausen, Lessing, Goethe, Kant, Hegel, Nietzsche, Mann, Heidegger, Kafka, Hesse, and contemporary writers of current interest. Elective for students in all departments.

GER 1060 GERMAN FOR READING
Designed to provide a reading ability in German that will support research in other disciplines.

GER 1100 BEGINNING GERMAN I
The first course in the study of elementary German. Emphasis on the development of basic skills in comprehension, speaking and reading.

GER 1101 BEGINNING GERMAN II
PR: GER 1100 or equivalent. A continuation of GER 1100.

GER 1102 BEGINNING GERMAN III
PR: GER 1101 or equivalent. Continuation of GER 1101.

GER 2200 INTERMEDIATE GERMAN I
PR: GER 1102 or equivalent. A review of the basic structure of spoken and written German. May be taken concurrently with GER 2201.

GER 2201 INTERMEDIATE GERMAN II
PR: GER 1102 or equivalent. Readings in German on the intermediate level. May be taken concurrently with GER 2200.

GER 3240 CONVERSATION I
PR: GER 1102. For development of basic conversational skills.

GER 3420 GERMAN COMPOSITION I
A fundamental course for students who have completed GER 2200 or GER 2201.

GER 3500 GERMAN CIVILIZATION
PR: GER 2200 or GER 2201. Readings in German on the cultural history of Germany.

GER 4241 CONVERSATION II
Free conversation based on the current German idiom.

GER 4421 COMPOSITION II
Practical training in modern German usage and differences of style.

GET 3111 See above—COURSES IN TRANSLATION

GEW 4100 SURVEY OF GERMAN LITERATURE I
Old High German and Middle High German literature in modern German translation; the literature of Humanism and Baroque, the classical period.

GEW 4101 SURVEY OF GERMAN LITERATURE II
The romantic period, 19th and 20th centuries.

GEW 4900 DIRECTED STUDY
Departmental approval required.

GEW 4930 SELECTED TOPICS
Study of an author, movement, or theme.

GRADUATE COURSES

GER 5845 HISTORY OF THE GERMAN LANGUAGE
A diachronic approach to the study of the German language. The course traces the history and development of the language from Indo-European through Germanic, Old, Middle, and New High German.

GER 6908 INDEPENDENT STUDY
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

GEW 5485 20th CENTURY LITERATURE TO 1945
A study of major styles in German literature from 1900 to WWII with emphasis on Hauptmann, Schnitzler, Hofmannsthal, George, Rilke, Kaiser, Heym, Trakl, Thomas Mann, Hesse, Kafka, Benn, Brecht.

GEW 5489 20th CENTURY LITERATURE 1945-PRESENT
Study of major trends in German literature since WWII with emphasis on Borchert, Frisch, Dürrenmatt, Böll, Uwe Johnson, Grass, Aichinger, Eich, Enzensberger, Bachmann.

GEW 5515 THE ENLIGHTENMENT
Selected dramas and critical writings by Lessing, Wieland, Kant.

GEW 5541 ROMANTICISM
Selected works by Grillparzer, Grabbe, Bühchner, Heine, Immerman, Stifter, Keller, Meyer, Storm, Raabe, Hulshoff, and Mörike.

GEW 5600 GOETHE
Selected novels; poems: Werther, Wahlverwandtschaften, Wilhelm Meister, Westöstlicher Divan.

GEW 5603 FAUST I
Sources, form, content, and literary significance of Urfaust and Faust I.

GEW 5610 SCHILLER
Selected dramas, philosophical and aesthetic writings.

GEW 5934 SELECTED TOPICS
PR: Upper-level or graduate standing. Study of an author, movement, or theme.

GEW 6400 MIDDLE HIGH GERMAN
An introduction to the Middle High German language and the classical literature of that period. Readings from the epics of Hartmann von Aue, Wolfram von Eschenbach, Gottfried von Strassburg, and Minnesang (courtey love poetry).

GEW 6604 FAUST II
An analysis of Goethe's last work: mythology, literary significance and critical evaluation.

GEW 6915 DIRECTED RESEARCH
PR: GR. Master's level. Repeatable. (S/U only.)

GEW 6934 SELECTED TOPICS
Study of an author, movement, or theme.

GEW 6938 GRADUATE SEMINAR
Topics vary. May be repeated.

Greek

UNDERGRADUATE COURSES

GRE 1100 BEGINNING CLASSICAL GREEK I
An introductory course in classical Greek grammar with appropriate readings.

GRE 1101 BEGINNING CLASSICAL GREEK II
PR: GRE 1100 or equivalent. An introductory course in classical Greek grammar with appropriate readings.

GRE 1102 BEGINNING CLASSICAL GREEK III
PR: GRE 1101 or equivalent. An introductory course in classical Greek grammar with appropriate readings.
ITALIAN CLASSICS IN TRANSLATION

The works of the fathers of the Renaissance—Dante, Petrarch, Boccaccio, Machiavelli, Castiglione and others—are read and discussed in English.

MASTERPIECES OF 20th CENTURY ITALIAN LITERATURE IN TRANSLATION

Studies of the works of Pirandello, Silone, Moravia, Lampedusa, Levi, etc.

BEGINNING ITALIAN I

The first course in the study of elementary Italian. Emphasis is on the development of basic skills in comprehension, speaking, and reading.

BEGINNING ITALIAN II

A continuation of ITA 1100.

BEGINNING ITALIAN III

A continuation of ITA 1100 and ITA 1102.

INTERMEDIATE ITALIAN I

A review of the basic structure of spoken and written Italian.

INTERMEDIATE ITALIAN II

Readings in Italian on the intermediate level. May be taken concurrently with ITA 2200.

INTERMEDIATE CONVERSATION I

For development of basic conversational skills.

INTERMEDIATE COMPOSITION I

To develop the student's ability in writing Italian, to increase his ability in comprehension and use of grammatical elements.

ITALIAN CIVILIZATION

Readings and discussion on the cultural history of Italy.

CONVERSATION II

Free and directed conversation in Italian on contemporary topics.

ITALIAN COMPOSITION II

The study of syntax is intensified and the vocabulary is expanded.

SELECTED TOPICS

Study of an author, movement, or theme. May be repeated.

UNDERGRADUATE COURSES

COURSES IN TRANSLATION

BEGINNING LATIN I

An introductory course in Latin grammar with appropriate readings.

BEGINNING LATIN II

An introductory course in Latin grammar with appropriate readings.

BEGINNING LATIN III

An introductory course in Latin grammar with appropriate readings.

INTERMEDIATE LATIN I

Review of grammar; readings in Vergil, Ovid, and Martial.

INTERMEDIATE LATIN II

Review of grammar; readings in Vergil, Ovid, and Martial.

INTERMEDIATE LATIN III

Review of grammar; readings in Vergil, Ovid, and Martial.

ROMAN COMEDY I: TERENCE

Readings of selected plays by Terence.

ROMAN COMEDY I: PLAUTUS

Basic knowledge of Latin. Readings of selected plays by Plautus; introduction to comedy—its theory and practice.

ROMAN COMEDY II: TERENCE

Basic knowledge of Latin. Readings of selected plays by Terence.

ROMAN ELEGIAIC POETS II: PROPERTIUS AND TIBULLUS

Basic knowledge of Latin. Readings in Propertius and Tibullus; further study of art and tradition in Roman lyric poetry.

ROMAN SATIRE I

Basic knowledge of Latin. Readings in the Satyricon of Petronius. Introduction to the nature of satire.

ROMAN SATIRE II

Basic knowledge of Latin. Readings in Seneca's Apocolocyntosis, the satires of Horace, and Juvenal. Introduction to the tradition and art of formal verse satire.
**Portuguese**

**UNDERGRADUATE COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>POR 3210</td>
<td>PORTUGUESE I</td>
<td>(4)</td>
<td>PR: Two years of another Romance Language or Latin. Basic grammar, syntax, pronunciation, and development of reading and oral skills.</td>
</tr>
<tr>
<td>POR 3211</td>
<td>PORTUGUESE II</td>
<td>(4)</td>
<td>PR: POR 3210. Continues development of reading and oral skills.</td>
</tr>
<tr>
<td>POR 3470</td>
<td>OVERSEAS STUDY</td>
<td>(1-9)</td>
<td>PR: POR 3210. An intensive study-travel program in a Portuguese-speaking country. Prior departmental approval and early registration are required.</td>
</tr>
<tr>
<td>POR 3500</td>
<td>THE LUSO-BRAZILIAN WORLD</td>
<td>(4)</td>
<td>An introduction to the culture and civilization of Portugal and Brazil.</td>
</tr>
<tr>
<td>POW 4905</td>
<td>DIRECTED STUDY</td>
<td>(1-4)</td>
<td>Departmental approval required. May be repeated.</td>
</tr>
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</table>

**GRADUATE COURSE**

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<tbody>
<tr>
<td>POW 6910</td>
<td>DIRECTED RESEARCH</td>
<td>(var.)</td>
<td>PR: GR. Master’s level. Repeatable. (S/U only.)</td>
</tr>
</tbody>
</table>

**Russian**

**UNDERGRADUATE COURSES**

<table>
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<tbody>
<tr>
<td>RUT 3110</td>
<td>RUSSIAN CLASSICS IN TRANSLATION</td>
<td>(4)</td>
<td>Masterpieces of 19th century Russian literature in English. The major works of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, and Chekhov. Elective for all students in all departments.</td>
</tr>
<tr>
<td>RUT 3111</td>
<td>20th CENTURY RUSSIAN LITERATURE IN TRANSLATION</td>
<td>(4)</td>
<td>Masterpieces of 20th century Soviet literature in English. The major works of Bely, Olesha, Babel, Zamyatin, Bulgakov, Pasternak, and Solzhenitniz. Elective for all students in all departments.</td>
</tr>
</tbody>
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**GRADUATE COURSE**

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<tr>
<td>RUT 3110</td>
<td>RUSSIAN CLASSICS IN TRANSLATION</td>
<td>(4)</td>
<td>Masterpieces of 19th century Russian literature in English. The major works of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, and Chekhov. Elective for all students in all departments.</td>
</tr>
</tbody>
</table>

**Spanish**

**UNDERGRADUATE COURSES**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>SPT 3110</td>
<td>SPANISH MASTERPIECES IN TRANSLATION</td>
<td>(4)</td>
<td>Outstanding literary works of Spain, in English. Open to all non-majors.</td>
</tr>
</tbody>
</table>
GRADUATE COURSES

SPN 5790 PHONOLOGY
PR: SPN 3300. A study of the Spanish sound system.

SPN 6845 HISTORY OF THE SPANISH LANGUAGE
TRACES THE DEVELOPMENT OF SPANISH FROM ITS LATIN ORIGINS TO THE PRESENT.

SPN 6908 INDEPENDENT STUDY
INDEPENDENT STUDY IN WHICH STUDENT MUST HAVE A CONTRACT WITH AN INSTRUCTOR. REPEATABLE. (S/U ONLY.)

SPN 6940 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 FIVE CREDITS PER STUDENT. (S/U ONLY.)

SPW 5245 THE PICARESQUE NOVEL
REALISTIC PROSE-FICTION OF THE RENAISSANCE AND GOLDEN AGE.

SPW 5313 GOLDEN AGE DRAMA

SPW 5535 ROMANTICISM
PR: SPW 4101. POETRY AND DRAMA OF THE FIRST HALF OF THE 19TH CENTURY.

SPW 5555 REALISM
PR: SPW 4101. PROSE FICTION OF THE 19TH CENTURY.

SPW 5605 THE QUIJOTE
CERVANTES' MASTERPIECE DON QUIJOTE DE LA MANCHA.

SPW 5725 SPW 5725 GENERATION OF 1898
PR: SPW 4101. FROM GANivet TO LORCA.

SPW 5726 GENERATION OF 1927

SPW 5755 MEXICAN LITERATURE
PR: SPW 4130. MAJOR WRITERS OF ALL GENRES. EMPHASIS ON MODERN WRITERS.

SPW 5765 LITERATURE OF ARGENTINA AND URUGUAY
PR: SPW 4130. EMPHASIS ON THE GAUCHO THEME AND CONTEMPORARY PROSE FICTION.

SPW 5775 CARIBBEAN LITERATURE
PR: SPW 4130. EMPHASIS ON CONTEMPORARY CUBAN AND PUERTO RICAN LITERATURES.

SPW 5934 SELECTED TOPICS
PR: UPPER-LEVEL OR GRADUATE STANDING. STUDY OF AN AUTHOR, MOVEMENT, OR THEME.

SPW 6313 SEMINAR ON GOLDEN AGE DRAMA
A SPECIALIZED STUDY OF A MAJOR GOLDEN AGE THEME OR DRAMATIST.

SPW 6910 DIRECTED RESEARCH
PR: GR. MASTER'S LEVEL. REPEATABLE. (S/U ONLY.)

SPW 6934 SELECTED TOPICS
STUDY OF AN AUTHOR, MOVEMENT, OR THEME.

SPW 6936 GRADUATE SEMINAR
TOPICS VARY. MAY BE REPEATABLE.

SPW 6971 THESIS: MASTER'S
REPEATABLE. (S/U ONLY.)

UNDERGRADUATE COURSES

GEA 3000 WORLD REGIONAL GEOGRAPHY
COMPARATIVE AND ANALYTICAL ANALYSIS OF REPRESENTATIVE REGIONS OF


GEOGRAPHY 221

SPT 3131 LATIN AMERICAN LITERATURE IN TRANSLATION
OUTSTANDING WORKS OF BRAZIL AND SPANISH AMERICA, IN ENGLISH. OPEN TO ALL NON-MAJORS.

SPN 1100 BEGINNING SPANISH I
THE FIRST COURSE IN THE STUDY OF ELEMENTARY SPANISH. EMPHASIS ON THE DEVELOPMENT OF BASIC SKILLS IN SPEAKING, READING, AND WRITING. THIS COURSE IS ALSO AVAILABLE ON WUSF-TV CHANNEL 16 BY THE Y.O.U. PROGRAM.

SPN 1101 BEGINNING SPANISH II
PR: SPN 1100 OR EQUIVALENT. A CONTINUATION OF SPN 1100.

SPN 1102 BEGINNING SPANISH III
PR: SPN 1101 OR EQUIVALENT. A CONTINUATION OF SPN 1101.

SPW 4100 SURVEY OF SPANISH
PR: SPN 2201 OR EQUIVALENT. FROM THE ORIGINS THROUGH THE 17TH CENTURY.

SPW 4101 SURVEY OF SPANISH LITERATURE I
PR: SPN 2201 OR EQUIVALENT. FROM THE 18TH CENTURY TO THE PRESENT.

SPW 4102 SURVEY OF SPANISH LITERATURE II
PR: SPN 2201 OR EQUIVALENT. FROM THE 18TH CENTURY TO THE PRESENT.

SPW 4130 SURVEY OF SPANISH-AMERICAN LITERATURE
PR: SPN 2201 OR EQUIVALENT. AN INTRODUCTION TO THE STUDY OF SPANISH-AMERICAN LITERATURE FROM THE COLONIAL PERIOD TO THE PRESENT. EMPHASIS ON MODERN WRITERS SINCE DARION.

SPW 4390 SELECTED TOPICS
STUDY OF AN AUTHOR, MOVEMENT, OR THEME.

SPW 4900 DIRECTED STUDY
DEPARTMENTAL APPROVAL REQUIRED.
the world with emphasis on cultural, political, economic, and physical diversity.

GEA 3002 GENERAL GEOGRAPHY (5)
Selected topics in regional and topical geography offered as survey courses. Open to all students.

GEA 4194 REGIONAL GEOGRAPHY (5)
PR: GEO 3013 recommended or CI. Variable title course to systematically study and compare special regions identified by the instructor.

GEA 4202 GEOGRAPHY OF ANGLO-AMERICA (5)
PR: GEO 3013 recommended or CI.

GEA 4260 GEOGRAPHY OF THE SOUTHEAST UNITED STATES (5)
PR: GEO 3013 recommended or CI.

GEA 4270 GEOGRAPHY OF FLORIDA (5)
PR: GEO 3013 recommended or CI.

GEA 4300 GEOGRAPHY OF MIDDLE AMERICA (5)
PR: GEO 3013 recommended or CI.

GEA 4360 GEOGRAPHY OF THE GULF OF MEXICO (5)
PR: GEO 3013 recommended or CI.

GEA 4369 GEOGRAPHY OF LATIN AMERICA (5)
PR: GEO 3013 recommended or CI.

GEA 4410 GEOGRAPHY OF SOUTH AMERICA (5)
PR: GEO 3013 recommended or CI.

GEA 4500 GEOGRAPHY OF EUROPE (5)
PR: GEO 3013 recommended or CI.

GEA 4554 GEOGRAPHY OF THE USSR (5)
PR: GEO 3013 recommended or CI.

GEA 4600 GEOGRAPHY OF AFRICA (5)
PR: GEO 3013 recommended or CI.

GEA 4703 GEOGRAPHY OF ASIA (5)
PR: GEO 3013 recommended or CI.

GEA 4930 GEOGRAPHY OF THE AMERICAN HEARTLAND (5)
PR: GEO 3013 recommended or CI.

GEO 1930 GEOGRAPHY OF CURRENT EVENTS (4)
Application of basic geographic principles of the analysis of contemporary events in various parts of the world.

GEO 3013 SYSTEMATIC GEOGRAPHY (5)
Principles and concepts of the discipline; maps, earth-sun relations, weather, and climate.

GEO 3370 SYSTEMATIC GEOGRAPHY (5)
PR: GEO 3013 or CI. Landforms and conservation of resources. Latter part of course deals with man's use of the natural environment.

GEO 3402 HUMAN GEOGRAPHY (5)
PR: GEO 3013 or CI. Systematic treatment of man's activities on earth; population, settlement, agriculture, industry, trade, transportation, and political aspects are among those considered.

GEO 3901 ELEMENTS OF GEOGRAPHY (1)
An independent study program in the basic elements of physical and cultural geography. Topics include maps and map reading, history of geography. Topics include maps and map reading, history of geography, earth form, weather, climate, soils, water, plants and animals, landforms and minerals, conservation, political, economic, language and religion, settlement and population, and urban. Course is designed primarily for nonmajors. A student may enroll for a maximum of five hours (5 sections) during any quarter. (5/30 only.)

GEO 3931 WEATHER AND MAN (5)
The inter-relationship between the atmospheric environment and man.

GEO 4040C MAP INTERPRETATION (5)
PR: GEO 3013 recommended or CI. Analysis and synthesis of various types of maps and map projections.

GEO 4100C CARTOGRAPHY (5)
PR: GEO 3013 recommended or CI. Cartographic techniques of map compilation and presentation, including generalization, symbolization, reproduction, and utilization.

GEO 4114C GEOGRAPHIC TECHNIQUES AND METHODOLOGY (5)
PR: GEO 3013 recommended or CI. Selected topics in various geographic techniques and methodologies and their application.

GEO 4124C AIR PHOTO INTERPRETATION (5)
PR: GEO 3013 recommended or CI. Use of air photos and other remote sensing devices in detecting, identifying, and analyzing objects on the earth's surface from the perspective of space.

GEO 4164C QUANTITATIVE METHODS (5)
PR: GEO 3013 recommended or CI. Use of statistical analysis in geographic research.

GEO 4200C PHYSICAL GEOGRAPHY (5)
PR: GEO 3013 recommended or CI. Man's interaction with the physical environment, including any one or a combination of the following topics: landforms, weather, climate, soils, vegetation, water.

GEO 4210 PHYSIOGRAPHY (5)
PR: GEO 3013 recommended or CI. Regional analysis of the physical complex of North America, including a detailed study of landforms and their distribution and processes of landform evolution.

GEO 4260 SOILS (5)
PR: GEO 3013 recommended or CI. An introduction to the study of soils with emphasis on soil morphology, conservation, classification, and world distribution of basic soil groups.

GEO 4280C HYDROLOGY (5)
PR: GEO 3013 recommended or CI. An in-depth study of the hydrologic cycle with emphasis on surface water components. Particular topics may include precipitation, evapotranspiration, water budget, streamflow, and probability analysis.

GEO 4300 BIOGEOGRAPHY (5)
PR: GEO 3013 recommended or CI. Study of the distribution of animal life and vegetation with emphasis on their economic and geographic significance to man.

GEO 4340 MAN AND NATURAL HAZARDS (5)
PR: GEO 3013 recommended or CI. An examination of environmental hazards; their influence on man and man's attempt to overcome them. Some of the topics considered are hurricanes, tornadoes, earthquakes, tidal waves, fire, freezes, and droughts.

GEO 4372 CONSERVATION (5)
PR: GEO 3013 recommended or CI. The distribution, exploitation, and conservation of physical and human resources, ecology.

GEO 4390 WATER RESOURCES (5)
PR: GEO 3013 recommended or CI. A general overview of the hydrologic cycle and the impact of cultural development on its various components. May also include a survey of regional water problems.

GEO 4391 AMERICAN WATER RESOURCES (5)
PR: GEO 3013 recommended or CI.

GEO 4420 CULTURAL GEOGRAPHY (5)
PR: GEO 3013 recommended or CI. A study of the temporal-spatial relationship of culture and nature. Emphasis is placed on man's role in using and modifying the landscape and the effect of his global distribution on his economic activities, political development, and cultural differentiation.

GEO 4450 SETTLEMENT GEOGRAPHY (5)
PR: GEO 3013 recommended or CI. The interrelationships of human settlement types and their natural habitats; site, situation, form, and function are examined. Emphasis is on rural settlement, but urbanization is considered.

GEO 4440 POPULATION GEOGRAPHY (5)
PR: GEO 3013 recommended or CI. An analysis of contemporary patterns in world and regional distributions of people and geographical factors underlying these patterns and their changes.
study of the components of the earth's atmosphere and the interrelated processes involved. Weather elements included are temperature, atmospheric moisture, pressure, winds, clouds, precipitation, and storms. Basic weather forecasting and analysis.

URP 4052 URBAN AND REGIONAL PLANNING (5)
PR: GEO 3013 recommended or CI. The geographic foundations of the modern city, metropolitan development, and the trend toward megalopolis. Examined are the political problems of conflicting jurisdictions at the local, county, state, national, and international levels.

GRADUATE COURSES

GEO 6195 SEMINAR IN ADVANCED REGIONAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a selected region of the world. May be repeated once for credit, but region may not be repeated.

GEO 5065 GEOGRAPHIC LITERATURE AND HISTORY (4)
PR: Senior or graduate standing in geography, or CI. The origins and development of the discipline as revealed through an examination of the principal written sources. Special attention paid to leading personalities and modern periodicals.

GEO 5105C METHODOLOGY II: CARTOGRAPHIC (4)
PR: Senior or graduate standing in geography, GEO 4100C (Cartography), or CI. Application of various techniques for presenting graphic illustrations as research tools.

GEO 5166C METHODOLOGY I: QUANTITATIVE (4)
PR: Senior or graduate standing in geography, and a course in statistics, or CI. The application of quantitative techniques to geographic problems; factor, sensitivity, and spatial analysis.

GEO 5945C METHODOLOGY III: FIELD WORK (4)
PR: Senior or graduate standing in geography. Data collection in a field situation, including observation, classification, interpretation, and presentation of the data.

GEO 6119 SEMINAR IN ADVANCED TECHNIQUES & METHODOLOGY (4)
PR: Graduate standing in geography. Analytic study of a selected geographic technique (such as remote sensing, graphics, photo interpretation, or computer applications) or an investigation into an aspect of methodology. May be repeated once for credit but topic may not be repeated.

GEO 6209C SEMINAR IN ADVANCED PHYSICAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a problem selected from one or more aspects of the atmosphere, biosphere, hydrosphere, or lithosphere. May be repeated once for credit, but topic may not be repeated.

GEO 6428 SEMINAR IN ADVANCED CULTURAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a problem selected from one or more aspects of the cultural landscape (urban, political, economic, population, settlement). May be repeated once for credit.

GEO 6908 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

GEO 6918 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

GEO 6919 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 five credits per student. (S/U only.)

GEO 6945 METHODOLOGY IV: ACADEMIC (4)
PR: Graduate standing in geography. Current trends in college
geography, with the emphasis on the junior college program. Not available to thesis students.

GEO 6947 DIRECTED TEACHING  
(1-9)  
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.)

GEO 6948 GRADUATE INSTRUCTION METHODS  
(1-5)  
Repeatable. (S/U only.)

GEOLOGY

Chairperson: R. A. Davis, Jr.; Professors: R. A. Davis, Jr., W. J. Ragan; Visiting Professor: A. Rosenzweig; Associate Professor: S. B. Upchurch; Assistant Professors: T. V. Mayou, M. T. Stewart, R. N. Strom.

UNDERGRADUATE COURSES

GLY 2000 INTRODUCTION TO GEOLOGY  
(4)  
An introduction to the materials, processes, and history of the earth. Students may elect to enroll in GLY 2000L concurrently. No credit for geology majors or students with credit in GLY 3006.

GLY 2000L BASIC GEOLOGY LABORATORY  
(1)  
Laboratory examination of mineral and rock specimens, topographic and geologic maps, aerial photographs, and fossils. To be taken in conjunction with GLY 2000, GLY 2850, or GLY 3006. May not be repeated for credit. No credit for geology majors.

GLY 2016 GEOLOGY I: EARTH MATERIALS  
(4)  
Study of minerals and rocks that comprise the earth's crust. Basic introduction to the origin and classification of earth materials. Fundamentals of the rock cycle. Designed for science majors. Lec.-lab.

GLY 2017 GEOLOGY II: EARTH PROCESSES  
(4)  
Study of surface and subsurface processes of the earth including weathering and transportation of sediment, earthquakes, and other crustal movement, and movements of fluids. Emphasis on streams, coasts, glacial environments, and aeolian environments, and the resulting landforms. Designed for science majors. Lec.-lab.

GLY 2100 GEOLOGY III: EARTH HISTORY  
(4)  
Study of the physical and biological history of the earth including evolution of the major groups of organisms, continental drift, and interpretation of ancient environments. Designed for science majors. Lec.-lab.

GLY 2850 ENVIRONMENTAL GEOLOGY  
(4)  
A first course in geology emphasizing environmental aspects of the earth's crust such as earthquakes, depletion of the earth's resources, water supply problems, and geologic land use and planning. Students may enroll in GLY 2000L concurrently. No credit for geology majors.

GLY 3005 ROCKS, MINERALS, AND GEMS  
(4)  
A general course in the occurrence, classification, and economics of earth materials. Designed for the non-science student or rockcollector who is interested in something beyond a basic introductory course. Although no prerequisites are necessary, it is recommended that either GLY 2000, GLY 2850, or GLY 3006 be taken prior to enrollment in GLY 3005. No credit for geology majors.

GLY 3006 GEOLOGY OF OUR NATION'S PARKS  
(4)  
Representative parks used to illustrate current concepts in geology. Students may enroll in GLY 2000L concurrently. For the non-science student. No credit for geology majors or students with credit in GLY 2000.

GLY 3400 STRUCTURAL GEOLOGY  
(4)  
PR: 12 hours of geology, MAC 1114 or equivalent or CI. Study of the origin and development of structural features of the earth's crust. Applications of principles of geology, physics, and mathematics to understanding relationships of strata and interpreting structural features. Lec.-lab.

GLY 3610 PRINCIPLES OF INVERTEBRATE PALEONTOLOGY  
(5)  
PR: GLY 2100 or CI. Emphasis on morphology and habits of fossils invertebrate groups as they evolved through geologic time. Comparisons with modern examples or similar organisms. Stratigraphic distribution of major groups. Lec.-lab.

GLY 3650 LIFE OF THE GEOLOGIC PAST  
(4)  
General course in development of organisms through geologic time including invertebrates, vertebrates, and plants. Designed for non-science majors interested in fossils, their origins, and scientific value in the rock record. Although no prerequisite is necessary, it is recommended that either GLY 2000, GLY 2850, or GLY 3006 be taken prior to enrollment in GLY 3650. No credit for geology majors.

GLY 3820 INTRODUCTION TO HYDROGEOLOGY  
(5)  
PR: Eight hours of geology, MAC 1114 or equivalent, or CI. Occurrence, circulation and distribution of subsurface water, its chemical and physical properties, relation to the geologic environment, exploration and development. Lec.-field lab.

GLY 4040 CONCEPTS IN EARTH SCIENCE  
(5)  
Earth's environment in space, including a selected study of its materials, processes, climate, oceans, soils, and history. Lec.-dis. field trips.

GLY 4200 MINERALOGY  
(4)  
PR: Crystal Chemistry and Crystallography or CI. Properties, origin, and occurrence of geologically and economically important minerals. Laboratory practice in the identification of common minerals on the basis of their physical properties and simple chemical tests. Lec.-lab.

GLY 4210 CRYSTAL CHEMISTRY AND CRYSTALLOGRAPHY  
(4)  
PR: Geology I: Earth's Materials, one year of chemistry and College Trigonometry or equivalent or CI. Principles of crystal chemistry including chemical bonding and coordination, and the fundamentals of crystal structures. Crystal symmetry and morphology and their recognition. Particular emphasis is placed on mineralogically important examples. Lec.-lab.

GLY 4220 OPTICAL MINERALOGY  
(4)  
PR: Mineralogy or CI. Theory and use of polarized light microscopy as a means of mineral identification. Special emphasis is placed on the identification of rock forming minerals in thin section. Lec.-lab.

GLY 4511 PRINCIPLES OF STRATIGRAPHY  
(4)  
PR: GLY 4550. Emphasis on classical principles of litho-and biostratigraphy, stratigraphic nomenclature, development of stratigraphic philosophy, and paleogeographic reconstruction of sedimentary basins. Lec.-lab.-field trips.

GLY 4550 DEPOSITIONAL SYSTEMS  
(4)  
PR: GLY 2017, GLY 2100 or equivalent. Study of modern sedimentary environments and their relationships to one another in order to understand environments preserved in the rock record. Physical chemical, and biological aspect of terrestrial, transitional and marine sedimentary environments will be examined in light of their eventual preservation in rocks.

GLY 4555 SEDIMENTOLOGY  
(4)  
PR: GLY 4220, GLY 4550 or CI. Analysis of sedimentary rock and sedimentary structures as related to their environments of deposition. Textural and mineralogical study of sediments and statistical applications of sediment analysis. Lec.-lab.-field trips.
GLY 4700 GEOMORPHOLOGY
PR: Senior or advanced junior standing and CC. Origin, evolution and distribution of landforms.

GLY 4710 GEOLOGY OF SOILS
PR: Junior standing. Soil genesis, morphology, and mapping. Soil classification, world soil distribution. Applications of soil science to geology, engineering, land use planning, and anthropology.

GLY 4730 MARINE GEOLOGY
PR: 20 hours of geology or CI. General survey of the geology of the ocean floor from beaches to oceanic trenches including sediments, processes, tectonics and history.

GLY 4750 FIELD METHODS
PR: 20 hours of geology courses or CI. Fundamentals of geology in the field; compass and plane table mapping, mapping of aerial photos, reconnaissance surveys, interpretation of geologic structure. Lec.-lab.-field trips.

GLY 4816 ECONOMIC MINERAL DEPOSITS
PR: 20 hours of geology or CI. Principles involved in the origin, occurrence, recovery, and use of mineral resources. Lec.-lab.-field trips.

GLY 4821 HYDROGEOLOGY AND HUMAN AFFAIRS
PR: Open to all junior and senior level students. Geologic analyses of the present critical and urgent problems of water resources, pollution control, water supply, flood control, and underground waste disposal as they relate to economic, legal, and other social aspects of modern society. Field trips. No credit for geology majors.

GLY 4905 INDEPENDENT STUDY
PR: CI. Specialized independent study determined by the students' needs and interests. May be repeated. (S/U only.)

GLY 4915 UNDERGRADUATE RESEARCH
PR: Senior or advanced junior standing and written permission of department prior to registration. Individual experimental investigations with faculty supervision. (S/U only.)

GLY 4920 GEOLOGY COLLOQUIUM
PR: Senior standing in Geology. Weekly topical lectures by faculty, graduate students and invited speakers. Required of all senior geology majors, to be repeated for a total of 3 credit hours. (S/U only.)

GLY 4930 SELECTED TOPICS IN GEOLOGY
Each topic is a course under the direction of a faculty member with the content depending on the interests of the students and faculty involved. All areas of geology included. Departmental permission required prior to registration.

GRADUATE COURSES

GLY 5241 GENERAL GEOCHEMISTRY
PR: One year college chemistry, GLY 4200 or CI. Age, formation and evolution of the earth with application of basic chemical concepts and processes that govern the distribution of elements in geologic environments.

GLY 5245 ANALYTICAL TECHNIQUES IN GEOLOGY
PR: One year college chemistry, GLY 4220 or CI. Use and application of modern analytical methods including X-ray, atomic absorption, and other geochemical techniques. Interpretation and statistical analysis of data acquired. Lec.-lab.

GLY 5310 IGNEOUS AND METAMORPHIC PETROLOGY
PR: GLY 4220. Systematic study of igneous and metamorphic rocks and complexes, including origin, composition, and classification. Use of the polarizing microscope for thin section analysis will be emphasized, and other modern methods of study will be employed.

GLY 5341 PETROLOGY OF CHEMICAL ROCKS
PR: GLY 3610, GLY 4220 or CI. Origin, mineralogy, and petrology of chemical and organic sedimentary deposits including evaporites, carbonates, clays, oil and gas, coal and sedimentary iron ores. Lec.-lab.-field trips.

GLY 5450 PRINCIPLES OF APPLIED GEOPHYSICS
PR: Senior or advanced junior standing, one year of Physics or CI. Elementary treatment of gravimetric, magnetic, electric, and seismic geophysical techniques as applied to site investigations and mineral deposits. Lec.-lab.-field trips.

GLY 5615 ADVANCED STRATIGRAPHIC PALEONTOLOGY
PR: GLY 3610, GLY 4550 or CI. Morphology, geologic distribution, and stratigraphic ranges of important invertebrate guide fossils. Lec.-lab.-field trips.

GLY 5825 ADVANCED HYDROGEOLOGY
PR: GLY 3820, MAC 2244 or MAC 3212 or CI. Advanced hydrogeology: ground water hydraulics. Quantitative aspects of ground water flow, ground water flow systems, finite difference methods. Lec.-lab.-field trips.

GLY 5932 SELECTED TOPICS IN GEOLOGY
PR: Senior or advanced junior standing and CC. Each topic is a course in directed study under supervision of a faculty member. All areas of geology included. Departmental permission required prior to registration.

GLY 6246 CHEMICAL EQUILIBRIA IN THE EARTH
PR: GLY 5241 or CI. Application of basic solution geochemistry and equilibria concepts to geologic problems with emphasis on geochemical reactions at low temperatures and pressures.

GLY 6250 CLAY MINERALOGY
PR: Graduate standing in geology or CI. Composition, structures, origin, and diagenesis of clay minerals. Identification of clay minerals by X-ray diffraction techniques.

GLY 6290 SEDIMENTARY GEOCHEMISTRY
PR: GLY 5241 or CI. Fundamentals of aqueous geochemistry in relation to chemical and biochemical precipitation of sedimentary materials. Geochemistry of fluids with emphasis on diagenesis.

GLY 6349 SANDSTONE PETROGRAPHY
PR: GLY 4220, GLY 4555 or CI. Origin and environmental interpretation of sandstones including fine grained terrigenous sediments. Emphasis on thin-section study of sandstones as means of interpreting ancient depositional and diagenetic environments. Lec.-lab.

GLY 6351 CARBONATE PETROGRAPHY
PR: GLY 4220, GLY 5341 or equivalent or CI. Origin and environmental interpretation of carbonate rocks with emphasis on thin section study as means of interpreting ancient depositional and diagenetic environments. Lec.-lab.

GLY 6575 COASTAL SEDIMENTATION
PR: GLY 4555 or CI. Study of modern coastal sedimentary environments with emphasis on beaches, inlets, deltas, estuaries, and marshes. Analysis of sedimentary processes and resulting morphology of sediment bodies. Lec.-lab.-field trips.

GLY 6660 MARINE PALEOECOLOGY
PR: GLY 3610, GLY 4555 or CI. Interpretation of the relationships between ancient organisms and their environment with emphasis on the substrate. Applications of modern benthic marine environments and sediment-organism relationships to the fossil record. Lec.-field trips.

GLY 6735 SELECTED TOPICS IN GEOLOGY
PR: CI. May be repeated for credit.

GLY 6826 DEVELOPMENT OF GROUND-WATER RESOURCES
PR: Advanced Hydrogeology or CI. Ground-water exploration and evaluation. Aquifer evaluation, geophysical and geochemical exploration, hydrogeologic systems analysis. Lec.-lab.-field trips.
AMH 3170 THE CIVIL WAR AND RECONSTRUCTION (4) The events and personalities of the 1850's; the Civil War and Reconstruction including politics, slavery, reform, and expansion are examined in addition to the military conflict.

AMH 3110 AMERICAN HISTORY TO 1750 (4) A study of American development from the formation of the American national state, the American national system as an outgrowth of revolution and counter-revolution.

AMH 3101 THE UNITED STATES SINCE 1877 (4) A study of the transition of American society from the era of Reconstruction to WWI focusing on industrialization, expansion, and urbanization.

AMH 3102 THE UNITED STATES, 1877-1914 (4) A study of the development of American Foreign Relations in the period from the presidency of Woodrow Wilson through the presidency of Franklin Roosevelt.

AMH 3120 THE UNITED STATES, 1914-1945 (4) A study of American society from the end of World War II to the present. Developments in the political, economic, social, and intellectual spheres will be studied and related to the role of the United States in international politics.

AMH 3130 THE AGE OF JACKSON (4) A study of the development of the American national state, the development of political parties, continental expansion and reform movements. Focuses upon the years from 1828 to the Compromise of 1850.

AMH 3140 THE AGE OF JEFFERSON (4) A study of the development of the American national state, the development of political parties, continental expansion and reform movements. Covers the period from 1783 to 1828.

AMH 3150 AMERICAN LABOR HISTORY (4) A study of American workers with emphasis on the period from the 1860's to the present. The course examines the impact of industrial change of workers and their responses as expressed in strikes, unions, and political action.

AMH 3151 AMERICAN LABOR HISTORY SINCE 1898 (4) A study of American workers with emphasis on the period from the 1860's to the present. The course examines the impact of industrial change of workers and their responses as expressed in strikes, unions, and political action.

AMH 3160 AMERICAN FOREIGN RELATIONS TO 1898 (4) The development of American Foreign Relations in the Agricultural era.

AMH 3170 UNITED STATES MILITARY HISTORY (4) A study of United States military history from the American colonial period to the present. The United States military experience is studied within the context of related international developments.
and domestic developments and integrated with European antecedents.

AMH 3800 HISTORY OF CANADA (4)
A study of the major themes in the political and social development of Canada, with particular emphasis on the origins and development of French-Canadian nationalism, continentalism, and dominion-provincial relations.

AMH 4300 SOCIAL AND INTELLECTUAL HISTORY OF THE U.S. (4)
A study of the major social and intellectual developments in American history.

ASH 3403 ANCIENT AND IMPERIAL CHINA (4)
A survey of Chinese history from the earliest agrarian societal forms through the height of Chinese civilization in the Ming Dynasty (ca. 15th-16th Centuries).

ASH 3404 MODERN CHINA (4)
A survey of the 19th and 20th Centuries up to the creation of the Chinese People's Republic in 1949.

EUH 2101, 2102 ANCIENT HISTORY I, II (4, 4)
A survey study of the ancient civilization. EUH 2101 treats Near Eastern and Greek history to the beginning of the career of Alexander the Great; EUH 2102 treats the career of Alexander, the Hellenistic World, and Rome to the death of Constantine. Attention is drawn to the correlative work in CLA 3000, Ancient Civilizations.

EUH 2121, 2122 MEDIEVAL HISTORY I, II (4, 4)
A thematic survey of the Middle Ages. EUH 2121 deals with the nascent, Christian civilization of Europe, circa 300-1050 A.D.; EUH 2122 treats the mature medieval civilization of Europe, circa 1050-1500.

EUH 2200, 2201 MODERN EUROPEAN HISTORY I, II (4, 4)
A thematic survey of Europe in the modern age. EUH 2200 treats the period from the Renaissance to the French Revolution; EUH 2201, from the French Revolution to the present.

EUH 3140 HISTORY OF THE RENAISSANCE (4)
A social and cultural view of Europe during the Renaissance. Specific attention will be given to the artistic and philosophical developments in relation to the social, economic, and political situation.

EUH 3145 THE REFORMATION AND THE WARS OF RELIGION (4)
A social and cultural approach to European history from Luther to the Thirty Years War, (1517-1648). Religious and political conflicts and solutions will be examined in light of the cultural, social, and economic characteristics of the period.

EUH 3188 MEDIEVAL SOCIETY (4)
An investigation into the daily life and attitudes of the medieval peasant and townsmen, and the agrarian-urban economy and society which affected their lives.

EUH 3189 MEDIEVAL POLITICS (4)
An inquiry into the nature, distribution, and use of political power in the middle ages. Studies of the Ecclesiastical and secular nobility, their political actions, attitudes, and lives.

EUH 3204 HISTORY OF THE ENLIGHTENMENT (4)
The history of Europe from the Peace of Westphalia (1648) to the outbreak of the French Revolution.

EUH 3205 HISTORY OF NINETEENTH CENTURY EUROPE (4)
A comparative study of major economic, political and sociocultural developments in 19th Century Europe.

EUH 3206 HISTORY OF TWENTIETH CENTURY EUROPE (4)
A comparative study of major economic, political, and sociocultural developments in 20th Century Europe.

EUH 3382 BYZANTINE HISTORY TO 867 (4)
A thematic treatment of the history of Byzantium from 324 A.D. to 867. Course explores social, economic, religious, and political developments together with consideration of literature, learning, and the arts.

EUH 3383 IMPERIAL BYZANTIUM (4)
A study of the Byzantine Empire during the period 867-1453. Emphasizing causes for its decline and fall.

EUH 3401 HELLINIC GREECE (4)
A study of Greece in the Ancient period focusing on the Pre-Hellenic and Hellenic periods to the death of Philip of Macedon.

EUH 3402 HELLINISTIC GREECE (4)
A study of the career of Alexander The Great and of major developments in the Hellenistic period.

EUH 3412 ROMAN REPUBLIC (4)
A study of the Roman Republic in the period from its establishment in 509 B.C. to the death of Julius Caesar in 44 B.C. A prelude deals with Roman origins in the Regal period.

EUH 3413 ROMAN EMPIRE (4)
A study of the Roman Empire in the period from the death of Julius Caesar in 44 B.C. to the death of Marcus Aurelius, A.D. 180.

EUH 3431 ITALIAN HISTORY 1861 TO PRESENT (4)
A study of the major developments in Italian History from 1861 to the present.

EUH 3442 FRENCH HISTORY TO 1789 (4)
A study of major developments in French History from the Renaissance to the French Revolution.

EUH 3451 FRENCH HISTORY 1789 TO PRESENT (4)
A study of major developments in French History from the French Revolution to the present.

EUH 3461 GERMAN HISTORY TO 1870 (4)
A study of major developments in German History from the Reformation to 1870.

EUH 3462 GERMAN HISTORY 1870 TO PRESENT (4)
A study of major developments in German History from 1870 to the present.

EUH 3501 BRITISH HISTORY TO 1715 (4)
A study of major developments in British History from the 15th century to 1715.

EUH 3502 BRITISH HISTORY 1715 TO PRESENT (4)
A study of major historical developments in British History from 1715 to the present.

EUH 3530 BRITISH EMPIRE (4)
British Empire and Commonwealth. A study of the first and second British Colonial Empires, the emergence of the British Commonwealth into the Commonwealth of Nations.

EUH 3571 RUSSIAN HISTORY TO 1855 (4)
A study of major developments in Russian History from pre-Kievian times to 1855.

EUH 3572 RUSSIAN HISTORY 1855 TO PRESENT (4)
A study of the major developments in Russian History from 1855 to the present.

EUH 4600 SOCIAL AND INTELLECTUAL HISTORY OF THE ANCIENT WORLD (4)
A study of the major social and intellectual developments in the Ancient World.

EUH 4601 SOCIAL AND INTELLECTUAL HISTORY OF MEDIEVAL EUROPE (4)
A study of the culture and major intellectual developments of the Medieval World.

EUH 4603 SOCIAL AND INTELLECTUAL HISTORY OF MODERN EUROPE (4)
A study of the major social and intellectual developments in Modern Europe.

HIS 3930 SPECIAL TOPICS (4)
This course is designed to emphasize a selected historical problem.
or issue that is meaningful and challenging to the student. A variety of instructional approaches will be taken to the material. Topics will be changed each quarter.

**HIS 4070 RESEARCH IN HISTORY**
PR: CI. Introduction to the methods of historical research and writing, bibliography, and directed research in special topics designed to meet the particular needs and interests of individual students. Should be taken in the term immediately following enrollment in HIS 4936.

**HIS 4152 THEORY OF HISTORY**
PR: To be taken during the senior year. An investigation of the philosophical problems of history, with emphasis on the evolution of the discipline.

**HIS 4461 SCIENCE AND CIVILIZATION**
A thematic study of the interrelationship of science and society in modern history, science as a social institution in history.

**HIS 4900 DIRECTED READING**
PR: CI. Arrangement with instructor prior to registration. Readings in special topics.

**HIS 4936 PRO-SEMINAR IN HISTORY**
PR: CI. Advanced topics in the fields emphasizing readings, discussion, research, and writing. One pre-seminar is required of all history majors. Non-majors may enroll with the consent of the instructor. Topic vary within each field.

**LAH 3021 SPAIN, PORTUGAL AND THE IBERIAN EMPIRES**
A study of the peoples of the Iberian peninsula from the late medieval period to 1898 with emphasis on the Spanish Portuguese empires in the Western Hemisphere.

**LAH 3022 MODERN LATIN AMERICA**
A study of the emergency of the Latin American state. Emphasis is on Latin America since the wars of emancipation with special attention to the Third World character of the region, including independence, underdevelopment, imperialism, and revolution.

**LAH 3430 MEXICO**
A thematic study of Mexican history from Pre-Columbian cultures to the 20th Century, with special emphasis on colonial society, the emergence and development of the Mexican state and the Mexican Revolution.

**LAH 3470 CARIBBEAN HISTORY**
A thematic study of major political and socio-economic developments in the Caribbean area.

**LAH 3480 HISTORY OF CUBA**
An examination of Cuban history from Columbus to Castro. Emphasis on a thematic study of Cuba, including conquest and colonization, the 19th century struggles for independence, the political-economy of the Republic, and the revolutionary processes of the 20th century.

**LAH 3600 HISTORY OF BRAZIL**
A study of the social, economic, military, and political development of Portuguese Brazil in an otherwise Spanish American continent. Emphasis is on the 19th and 20th centuries.

**LAH 4730 SOCIAL AND INTELLECTUAL HISTORY OF LATIN AMERICA**
A study of the origins and development of major social and intellectual trends affecting the histories of the Latin American people.

**WOH 4270 REVOLUTIONS IN THE MODERN WORLD**
A comparative study of the major revolutions in world history and a study of the relationship between revolution and other forms of social change.

**GRADUATE COURSES**

**HIS 6112 ANALYSIS OF HISTORICAL KNOWLEDGE**
PR: Graduate Standing. A study of History as a form of knowledge with emphasis on explanatory devices and models of the discipline and the application of Social Science theory to the problems of Historical thought.

**HIS 6113 THEORY AND INTERPRETATION**
A systematic examination and evaluation of various schools of historical interpretation.

**HIS 6904 DIRECTED RESEARCH**
PR: GR. Master's level. Repeatable. (S/U only.)

**HIS 6908 INDEPENDENT STUDY**
PR: Independent study in which students must have a contract with an instructor. Repeatable. (S/U only.)

**HIS 6920 COLLOQUIUM IN HISTORY**
Reading and discussion of selected topics within the fields. Subject and scope to be determined by the instructor. May be repeated for credit.

**HIS 6939 SEMINAR IN HISTORY**
Research in selected problems within the fields. Subject and scope to be determined by the instructor. May be repeated for credit. The master's candidate is required to satisfactorily complete work in at least one graduate seminar to fulfill the requirement for the Master's degree in History.

**HIS 6971 THESIS: MASTER'S**
Repeatable. (S/U only.)

**HONORS PROGRAM**

*Director: M. V. Angrosino*

**UNDERGRADUATE COURSES**

**IDS 3331 HONORS PROGRAM SELECTED TOPICS**
PR: Admission to University Honors Program. Seminar focused on one major problem central to a selected discipline outside a student's major. The purpose of the seminar is to demonstrate in some depth how another discipline defines, attacks and resolves its major problem.

**IDS 3901 HONORS PROGRAM READING SEMINAR**
PR: Admission to University Honors Program. Reading seminar in which students read one major work a week and participate in discussions led by a specialist in a chosen field (topics vary). First of a two-part sequence.

**IDS 3902 HONORS PROGRAM READING SEMINAR**
PR: Admission to University Honors Program. Reading seminar in which students read one major work a week and participate in discussions led by a specialist in a chosen field (topics vary). Second of a two-part sequence.

**IDS 4332 HONORS PROGRAM SENIOR SEMINAR**
PR: Admission to University Honors Program. This seminar serves to integrate the many strands of a student's college experience through analysis of a problem of contemporary concern as approached by the various disciplines represented by students in the seminar.
HUMAN SERVICES


UNDERGRADUATE COURSES

HUS 3010 INTRODUCTION TO HUMAN SERVICES
An introduction to the field of human services. Study of the professions and agencies involved in providing human services. Analysis of the values and ethics of various professional associations.

HUS 3300 SOCIAL POLICY IN THE UNITED STATES
PR: HUS 3010 or CI. Historical development of social policy in the United States. The impact of industrialization and urbanization on the individual and family. The changing roles of family, community, state and nation. Analysis of current issues.

HUS 4020 THE LIFE CYCLE
An examination of individuals as they move through the various stages of the life-cycle—from birth until death. Attention is given to the physiological and psychosocial changes which occur during infancy, childhood, adolescence, young adulthood, middle age, old age, etc. Identification of major needs of individuals at different stages of life cycle.

HUS 4500 PLANNING AND EVALUATION OF HUMAN SERVICES PROGRAMS
PR: HUS 3010 or CI. Review of approaches to planning, coordination, and evaluation of human services programs. Methods of determining efficiency and effectiveness of health, rehabilitation, welfare and community action programs. Application of planning and evaluation techniques to human services fields.

MHT 4302 INTERVIEWING
PR: HUS 3010 or CI. The principles and techniques of interviewing. Use of interviewing in information gathering, research and helping relationships. Attention given to developing skills in communication across cultural, social, economic and age barriers.

SOW 4332 COMMUNITY ORGANIZATION AND DEVELOPMENT
PR: HUS 3010 or CI. An interdisciplinary approach to community organization and development. A synthesis of social, cultural, psychological, economic, and political information concerning community structure and change. Approaches to the introduction of community change.

GRADUATE COURSE

HUS 5224 INTERVENTION TECHNIQUES
PR: HUS 3010 or CI. Attention will be given to techniques of intervention at individual, small group, and community levels. The need for crisis intervention program in modern society.

HUMANITIES


UNDERGRADUATE COURSES

HUM 3024 THE HUMANITIES
The Arts. Analyses of selected works of film, literature, music, and visual arts, including a variety of periods, nationalities and art forms, emphasizing artistic diversity. Especially recommended for students intending to take 4000 and 5000 level Humanities courses at a future date.

HUM 3214 THE HUMANITIES
Studies in Culture: The classical and medieval periods. Analyses of selected works of classical and medieval architecture, drama, sculpture, intellectual prose, and other art forms. Typical course focus is on architecture, drama, and intellectual prose.

HUM 3226 THE HUMANITIES
Studies in Culture: The Renaissance and the 19th Century. Analyses of selected fiction, drama, painting, architecture, music, and other art forms. Typical course focus is on painting and music.

HUM 3251 THE HUMANITIES
Studies in Culture: The 20th Century. Analyses of selected works of 20th Century art, primarily emphasizing film, with secondary emphases on painting and fiction.

HUM 3271,3272,3273 HUMANITIES AND HUMANE VALUES
Masterpieces of music, visual arts, theater, literature, and philosophy in varying cultural and historical situations.

HUM 3580 THE CURRENT SCENE
Live performances in contemporary media will be followed by discussions. The course is designed to bring students into direct contact with artists and their work and to establish an environment for the free exchange of ideas, reactions and judgments of the works presented. The course will emphasize recent developments in the arts with some special attention to current innovations; film environments, mixed-media, improvisational theatre, random composition, kinetic art, and others. (S/U only.)

HUM 4433,4434 CLASSICAL ARTS AND LETTERS
PR: Sophomore standing or CI. Case studies in the arts and letters of the ancient world.

HUM 4435,4436 MEDIEVAL ARTS AND LETTERS
PR: Sophomore standing or CI. Case studies in the arts and letters of the middle ages.

HUM 4437,4438 RENAISSANCE ARTS AND LETTERS
PR: Sophomore standing or CI. Case studies in the arts and letters of the Renaissance.

HUM 4440,4441 THE ENLIGHTENMENT
PR: Sophomore standing or CI. Case studies in the arts and letters of the Enlightenment.

HUM 4442,4443 ARTS AND LETTERS OF THE ROMANTIC PERIOD
PR: Sophomore standing or CI. Case studies in the arts and letters of the romantic period.

HUM 4444,4445 NINETEENTH-CENTURY ARTS AND LETTERS
PR: Sophomore standing or CI. Case studies in the arts and letters of the nineteenth century.

HUM 4471,4473 TWENTIETH-CENTURY ARTS AND LETTERS
PR: Sophomore standing or CI. Case studies in the arts and letters of the twentieth century.

HUM 4813 HUMANITIES: THEORY AND PRACTICE
PR: Humanities major or CI. Study of theory and methodology of interdisciplinary Humanities, including workshop in which student begins planning Senior paper. (S/U only.)
HUM 4905 DIRECTED STUDY  
(1-5)  
Specialized individual study determined by the student's needs and interests.

HUM 4906 SELECTED PROBLEMS IN HUMANITIES  
(4)  
Problems in the interrelationships among the fine arts and the natural, social and behavioral sciences. A senior essay for humanities majors.

HUM 4930 SELECTED TOPICS IN HUMANITIES  
(1-5)  
PR: Sophomore standing or CI. This course will deal with a recurrent theme in the arts as, for example, love or death, or will focus on artistic centers such as Renaissance Florence or Paris in the 1920's. Topics will vary; course may be repeated for credit with change of content.

GRADUATE COURSES

HUM 5412 HUMANITIES IN THE ORIENT: INDIA  
(4)  
Examples from the arts and letters of India and the relationship of these arts to the Hindu and Buddhist philosophy-religions.

HUM 5414 HUMANITIES IN THE ORIENT: CHINA  
(4)  
Examples from the arts and letters of China; their relationship to Taoism, Confucianism and other Chinese philosophies; Western influences on 20th-century Chinese arts and letters.

HUM 5415 HUMANITIES IN THE ORIENT: JAPAN  
(4)  
Examples from the arts and letters of Japan, their relationship to Zen Buddhism and other Japanese philosophy-religions; Western influences on 20th-century Japanese arts and letters.

HUM 5422 AFRICAN ARTS AND LETTERS  
(4)  
Examples from both the traditional and contemporary arts and letters of Africa. Africa as a subject in Western art.

HUM 5452,5454,5456 HUMANITIES IN AMERICA  
(4,4,4)  
Case studies in the arts and letters of the United States.

HUM 5465 LATIN AMERICAN ARTS AND LETTERS  
(4)  
Analysis of selected Latin American works of art in their cultural context.

HUM 5485,5486 SELECTED NON-WESTERN HUMANITIES  
(4,4)  
Materials chosen from arts and letters of Asia, Oceania, and the Middle East. May be repeated for credit with change of content.

INTERDISCIPLINARY LANGUAGE-LITERATURE

UNDERGRADUATE COURSE

ENG 3930 SELECTED TOPICS  
(3-5)  
Course contents depend on student's need and instructor's interest. Agreement with instructor required prior to registration.

GRADUATE COURSE

ENG 5934 SELECTED TOPICS  
(2-5)  
Course contents depend on student's need and instructor's interest. Agreement with instructor required prior to registration.

LIBERAL STUDIES

Director: J. B. Camp,

UNDERGRADUATE COURSES

IDS 3300 STRUCTURES OF KNOWLEDGE AND KNOWING  
(4)  
The distinctive modalities of human knowledge and consciousness as reflected in the classic distinctions between: sensory/motor, qualitative/quantitative, logical/mathematical, normative/descriptive, ethical/physical, substance/function, etc., apart and in relation to non-rational knowledge.

IDS 3310 PROGRESS AND UTOPIA  
(4)  
Examination of the modern backgrounds of contemporary awareness: particularly the development of historical awareness of ourselves as scientifically, technologically, and sociologically

HUM 6475 STUDIES IN CONTEMPORARY ARTS AND LETTERS  
(4)  
Concentration on major artists and recent trends.

HUM 6493 STUDIES IN CLASSICAL ARTS AND LETTERS  
(4)  
PR: Graduate standing. Examples from the arts and letters of ancient Greece and their relationship to Aegean myths, religions, and philosophies. Classical Greek influences on later cultures.

HUM 6494 STUDIES IN MEDIEVAL ARTS AND LETTERS  
(4)  
PR: Graduate standing. Studies in medieval philosophies and their artistic and social expression. Concentrations on early Christian music and manuscript, the communal and monastic ideal (400-1000 A.D.); Romanesque architecture, neo-Platonism and emerging humanism (1000-1200 A.D.); Gothic visual arts—literature, and architecture in relation to philosophical determinism and political absolution.

HUM 6495 STUDIES IN RENAISSANCE ARTS AND LETTERS  
(4)  

HUM 6496 STUDIES IN ENLIGHTENMENT ARTS AND LETTERS  
(4)  
PR: Graduate standing. Studies in painting, sculpture, music, literature, and architecture in relation to philosophical determinism and political absolution.

HUM 6497 STUDIES IN NINETEENTH CENTURY ARTS AND LETTERS  
(4)  
PR: Graduate standing. Examples from the arts and letters of the nineteenth century, their relationship to philosophical, social, and historical developments, and to the arts and letters of the twentieth century.

HUM 6909 INDEPENDENT STUDY  
(var.)  
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

HUM 6915 DIRECTED RESEARCH  
(var.)  
PR: GR. Master's level. Repeatable. (S/U only.)

HUM 6934 SELECTED TOPICS IN HUMANITIES  
(1-4)  
Each topic is a course of study in a subject not covered by a regular course. May be repeated for credit with change of content.

“progressive” — in relation to both utopic and dystopic futures.

IDS 3320 FREEDOM AND THE SELF  
(4)  
Analysis of the notion of the self in relation to the idea of freedom, involving comparative treatment of the variety of standpoints of conceiving the individual personality in relation to the social context.

IDS 4344 SEMINAR: MAN AND NATURE  
(4)  
PR: Senior standing or CI. Examination of aspects of contemporary theories of nature and man deriving in the liberal arts, to the purpose of developing a general assessment of contemporary knowledge and methods of knowing.

IDS 4930 SELECTED TOPICS  
(2-5)  
Course content determined by student's and instructor's interest and need.
MARINE SCIENCE

Chairperson: J. C. Briggs (Acting); Professor: H. J. Humm; Associate Professors: R. C. Baird, P. R. Betzer, N. J. Blake, K. L. Carder, L. J. Doyle, K. A. Fanning, T. L. Hopkins; Assistant Professor: J. C. Steinmetz. Courtesy Faculty: W. W. Behrens, Jr., J. N. Ott, S. Schott.

UNDERGRADUATE COURSES

OCE 3001 INTRODUCTION TO OCEANOGRAPHY (3)
Topics in biological, chemical, geological, and physical oceanography presented in lectures by a number of specialists in these fields.

GRADUATE COURSES

EOC 6080 SCIENTIST-IN-THE-SEA I, HYPERBARIC OPERATIONS (4)
PR: CI and diver certification (NAVI or equivalent). Basic principles, physiology, and psychology involved in submarine hyperbaric operations, inside and outside habitats. Lec.-lab. (Also listed under Engineering.)

EOC 6081 SCIENTIST-IN-THE-SEA II, MARINE SCIENCES (4)
PR: CI and diver certification (NAVI or equivalent). Research equipment and techniques for underwater work in oceanography presented by practicing research workers in the field. Lec.-lab. (Also listed under Engineering.)

EOC 6082 SCIENTIST-IN-THE-SEA III, UNDERWATER ENGINEERING (4)
PR: CI and diver certification (NAVI or equivalent). The ocean as a constraint for construction and devices. Factors involved in planning and design of underwater operations and experimental devices. Lec.-lab. (Also listed under Engineering.)

OCE 5050 BIOLOGICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI, BSC 2010C, BSC 2011C, BSC 2012. The study of life in the sea with special reference to distribution, reproduction, adaptation, competition, and populations. Lec.-lab. For students who have not majored in a biological science.

OCE 6671 METHODS IN BIOLOGICAL OCEANOGRAPHY (2)
PR: CI. To acquaint students with field and laboratory equipment and techniques currently used in biological oceanography. Emphasis will be on field problems especially those requiring research at sea.

OCC 5050 CHEMICAL OCEANOGRAPHY (4)
PR: CHM 2047 and CI. The ocean as a chemical system, including composition, physical-chemical aspects, role of nutrients, trace metals, interaction between bottom and overlying water, modern methods of analysis in routine use in oceanography. Lec-lab.

OCC 6057 METHODS IN CHEMICAL OCEANOGRAPHY (2)
PR: OCC 5050 or CI. An intensive study of the use and limitations of field and laboratory equipment which is a standard part of chemical oceanographic research into the behavior of dissolved and particulate constituents in seawater.

OCE 5085 MARINE POLICY (3)
PR: OCE 3001 or CI. Course explores marine problems and their impact on society. Topics of interest include financing and organization of marine science; regulation (local, state, and Federal) of use of marine waterways, and the sea; political, social, and legal problems associated with marine pollution and the recovery and development of marine resources; conservation and public decision-making in the marine sphere.

OCE 5934 SELECTED TOPICS IN OCEANOGRAPHY (1-4)
PR: CI. Special topics in biological, chemical, geological, and physical oceanography.

OCE 6908 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

OCE 6934 SELECTED TOPICS IN OCEANOGRAPHY (1-4)
PR: CI. Special topics in biological, chemical, geological, and physical oceanography.

OCE 6939 GRADUATE SEMINAR IN OCEANOGRAPHY (1)
PR: Graduate standing. May be repeated. (S/U only.)

OCE 6942L FIELD STUDIES IN MARINE SCIENCE (4)
PR: One of the following: OCB 5050, OCB 6671, OCC 5050, OCC 6057, OCG 5050, OCG 6075, OPG 5051, OCP 6056 or CI. Combination of classroom study with the collection, analysis, and interpretation of field data to attack specific problems in marine science both for deep sea and nearshore environments.

OCE 6971 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)

OCE 6972 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

OCG 5050 GEOLOGICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI. An introduction to the physical, historical sedimentary, and structural geology of the ocean basins and their borders. Lec.-lab.

OCG 6075 METHODS IN GEOLOGICAL OCEANOGRAPHY (2)
PR: OCG 5050 or CI. Description and application of the modern techniques of geology and geophysics used to investigate the marine environment. Included in the subject matter are basic remote sensing techniques, sampling problems, seismic profiling, laboratory methods and interrated data analysis. Lec.-lab.-field trips.

OCP 5051 PHYSICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI, PHY 3042. The world ocean including its morphology, physical properties, currents, waves, tides, heat budget, and related topics. Lec.-lab.

OCP 6056 METHODS IN PHYSICAL OCEANOGRAPHY (2)
PR: MAC 3414, OCG 5050 or OCP 5051, and CI. Field and laboratory techniques for acquisition, reduction, display, and discussion of physical oceanographic data (e.g., waves, tides, currents, dissolved and suspended constituents).

PCB 6476 DYNAMICS OF MARINE BENTHIC COMMUNITIES (4)
PR: EGN 2210, ZOO 5555C, or CI. Theoretical approach to the study of benthic communities in fluctuating and constant environments. Methods of analysis of benthic data will be evaluated and discussed. Computer programs will be utilized for analysis wherever possible. Lec.-lab.

ZOO 5456C Ichthyology (5)
PR: CI or senior or graduate status: BSC 2010C, BSC 2011C, BSC 2012, PCB 4674 (helpful), ZOO 3713C (helpful). The evolution, systematics, and ecology of fishes. (Also listed under Zoology.)

MASS COMMUNICATIONS

UNDERGRADUATE COURSES

ADV 3000 INTRODUCTION TO ADVERTISING (4)
PR: MMC 3100 and MMC 3602. A study of the structures, functions, and persuasive language of advertising in mass media with attention to social, political, economic, and legal aspects.

ADV 3101 ADVERTISING COPY (4)
PR: ADV 3000, ECO 1000 or ECO 2023, MAR 3023, or CI. Study of laboratory experience in preparation of advertising copy for newspapers, magazines, radio, television, direct mail, outdoor displays, and special items.

ADV 3201 RADIO-TELEVISION ADVERTISING (4)
PR: ADV 3000 or CI. An intensive study and analysis of radio and television for advertising purposes, including copywriting, script and storyboard preparation, time buying and selling techniques, audience research methods, and basic production concepts.

ADV 3300 ADVERTISING MEDIA STRATEGY (4)
PR: ADV 3000 or CI. Problems, techniques, strategy of media research, planning, budgeting and effective utilization in advertising.

ADV 3700 RETAIL ADVERTISING PLANNING AND EXECUTION (4)
PR: ADV 3000 and ADV 3101 or CI. A study of retail advertising, including management decisions, processes, procedures, media planning, production techniques, and problems affecting the development of advertising to fulfill retail objectives.

ADV 4801 ADVERTISING CAMPAIGNS (4)
PR: ADV 3101, ADV 3300, MAR 3503. Advanced advertising course requiring planning and production of complete general advertising campaign, including research, production methods, budgeting, and media schedules.

ADV 4901 ADVERTISING PRACTICUM (1-2)
PR: Senior standing and CI. For selected Advertising Sequence majors. Practical experience outside the classroom in a live advertising situation where the student works for academic credit under the tutelage of a professional practitioner.

ENG 3130 LITERATURE AND THE FILM (3)
PR: ENC 1135. A study of what happens when a novel is adapted for the movies; of the insights of modern writers and literary critics into the motion picture as an art form analogous to, yet distinct from, literature and of the impact of literature on film-making. Not open for credit to Mass Communication majors.

FIL 3004 THE FILM AS MASS COMMUNICATION I: SYNTAX (4)
PR: MMC 3100 and MMC 3602. The language, conventions, elements, and patterns of the film medium as related to current models of effective mass communication and new theories of non-verbal communication. Concurrent laboratory experiences in control of light and line.

FIL 3100 INTRODUCTION TO FILM WRITING (4)
PR: FIL 3004 or CI. An introduction to the techniques of writing for the film employing adaptations from fiction and examinations of scripts as models and as subjects for critical analysis. Special emphasis on learning the Language of the Camera.

FIL 3200 THE FILM AS MASS COMMUNICATION II: RHETORIC AND STYLISTICS (4)
PR: FIL 3004. A continuation of FIL 3004 to include the effective arrangements of scenes and sequences in motion picture and television films. Concurrent laboratory experiences in sound and editing.

FIL 3201 THE FILM AS MASS COMMUNICATION III: WORKSHOP (4)
PR: FIL 3200. Practical exercises, demonstrations, and experiences in applying material covered in FIL 3004 and FIL 3200.

FIL 3401 CLASSICS OF THE SILENT FILM (4)
Examples of the silent film studies from social, intellectual, and artistic points of view.

FIL 3402 CLASSICS OF THE SOUND FILM (4)
Examples of the sound film studies from social, intellectual, historical, and artistic points of view.
planning and evaluation; ethical and legal problems of the editor.

**JOU 3205 TYPOGRAPHY I** (4)
PR: MMC 3100 and MMC 3602. The history and design of type, major classifications of type faces, typographic nomenclature, printer's measurements, and the science of type design and identification. Laboratory work.

**JOU 3206 TYPOGRAPHY II** (4)
PR: JOU 3205 or CI. A study of the history of typesetting, the emergence of computers and coldtype composition; extensive study and use of copyfitting methods for body type, display, and headlines; principles of typography and photocomposition including readability and legibility. Laboratory work.

**JOU 3300 MAGAZINE ARTICLE AND FEATURE WRITING** (4)
PR: ENC 3486, JOU 3100, or CI. Planning, researching, writing, and marketing articles for general and special interest magazines and newspaper magazine supplements; experience in developing article ideas; inductive analysis of contemporary magazine articles.

**JOU 3306 CRITICAL WRITING: EDITORIALS, REVIEWS, COLUMNS** (4)
PR: JOU 3101, JOU 4200. Interpretive and opinion writing for the mass media. Analysis and discussion of current events as a basis for critical thinking and editorial writing; evaluation of editorial pages of leading newspapers. Study of journalistic techniques involved in writing art, drama, music, and book reviews and satire, sports, or personal columns.

**JOU 3940 REPORTING PRACTICUM** (1-2)
PR: JOU 4104 and CI. For selected News-Editorial Sequence majors. Practical experience outside the classroom in a live newspaper reporting situation where the student works for academic credit under the tutelage of a professional practitioner.

**JOU 4104 PUBLIC AFFAIRS REPORTING** (4)
PR: JOU 3101 or RTV 3300, POS 2041 and POS 3142. Covering court meetings, city council meetings, city council, city hall, courts, society, and other special assignments. Emphasis is on coverage of major governmental units of all levels of government, including examination and interpretation of public documents and records.

**JOU 4200 NEWS EDITING I** (4)
PR: ECO 1000, JOU 3100, and SOC 1020 or CI. Evaluating news and its display; editing and rewriting copy for the mass media, with emphasis on the daily newspaper; news judgment, headlines, makeup; ethical problems.

**JOU 4202 NEWS EDITING II** (4)
PR: JOU 4200, POS 2041. Continuation of JOU 4200, with more intensive practice on the copydesk in evaluating, processing, editing, and headlining live wire copy and local copy; experimental makeup; managing the copy desk. Current events and analysis of selected daily newspapers.

**JOU 4208 MAGAZINE PLANNING AND PRODUCTION** (4)
PR: JOU 3203, VIC 3100, JOU 3205. Research in new magazine design and production techniques; training in the creative use of typography, photography, art work, text in the "area concept"; letterpress and offset production; financial management of magazines; preparation of a detailed dummy for a model magazine.

**JOU 4800 MASS MEDIA STUDIES** (4)
PR: Junior standing, JOU 3100, MMC 3000 or CI. Intensive review of mass communications theory, practice, and content as they relate to teaching mass media in secondary schools, with some emphasis also on supervision of school publications. Not open to Mass Communications majors or those who have completed JOU 5891.

**JOU 4931 NEWSPAPER ORGANIZATION AND MANAGEMENT** (4)

**JOU 4941 EDITING PRACTICUM** (1-2)
PR: Senior standing. JOU 4202 and CI. For selected News-Editorial Sequence majors. Practical experience outside the classroom at a daily newspaper copydesk, where the student works for academic credit under the tutelage of a professional news editor.

**JOU 4944 MAGAZINE PRACTICUM** (2)
PR: Senior standing and CI. For selected Magazine Sequence majors. Practical experience outside the classroom in a live magazine or industrial publication situation where the student works for academic credit under the tutelage of a professional practitioner.

**MMC 3000 SURVEY OF MASS COMMUNICATIONS** (3)
The functions of agencies of mass communication and their impact upon society; critical analyses of press performance in relation to current events; evaluation of the press through a study of its history. Not open for credit to Mass Communications majors.

**MMC 3100 WRITING FOR THE MASS MEDIA** (4)
PR: Sophomore standing; 2.5 GPR; grade of "C" in ENC 1102, ENC 1135, ENC 1168; typing proficiency. An introduction to the basic skills of writing for the mass media with practice in library research, persuasive writing, and informational writing.

**MMC 3602 MASS COMMUNICATIONS AND SOCIETY** (4)
PR: Sophomore standing; 2.5 GPR; grade of "C" in ENC 1102, ENC 1135, ENC 1168; typing proficiency. A survey of the history, theory processes, and philosophy of mass communications and the mass media in the United States, and their relationship to the other major institutions of American society.

**MMC 3700 THE POPULAR ARTS IN AMERICA** (4)
A survey of the growth of the popular arts (motion pictures, radio, television, art, best sellers, jazz and other forms of music, the comics, etc.) as mirrors, transmitters and transformers of American cultural values.

**MMC 3936 SELECTED TOPICS IN MASS COMMUNICATIONS STUDIES** (1-4)
Courses designed to meet current or specific topics of interest to the instructor and students.

**MMC 4200 HISTORY AND PRINCIPLES OF COMMUNICATIONS LAW** (4)
PR: MMC 3100 and MMC 3602. Historic and Constitutional backgrounds of freedom and control of expression, statutory enactments, major Supreme Court cases, court decisions and administrative rulings which have shaped legal control of communications.

**MMC 4201 GOVERNMENT AND THE MEDIA** (4)
PR: MMC 4200. The relationships between government and the media, with emphasis on current activities of some regulatory agencies as the Federal Communications Commission, the Federal Trade Commission and other commissions; the courts, the Congress and the Executive; examination of media and industry codes and standards.

**MMC 4300 INTERNATIONAL COMMUNICATION** (4)
Mass communications as internal and international systems; flow of the news; international communications networks; satellite communications; overseas activities of American media interests; international propaganda; communication and national development; international media organizations and their activities.

**MMC 4900 DIRECTED READING IN MASS COMMUNICATIONS** (1-4)
PR: Junior standing, CC and CI. Reading and directed study in special topics.

**MMC 4910 INDIVIDUAL RESEARCH IN MASS COMMUNICATIONS** (1-4)
PR: CC and CI. The course provides means for a student to do
independent study in an area not covered by a numbered course.

MMC 4931 SENIOR SEMINAR: INTERCOMMUNICATION—THE MASS MEDIA IN PERSPECTIVE (4)
PR: Senior standing; open only to Mass Com. majors. The inter-relationships among the mass media and institutions; their effect upon each other and upon contemporary society.

MMC 4936 SELECTED TOPICS IN MASS COMMUNICATIONS STUDIES (1-4)
PR: Junior standing. Courses designed to meet current or specific topics of interest to instructors and students.

PUR 3000 PRINCIPLES OF PUBLIC RELATIONS (4)
PR: ECO 1000 and MAR 3023, MMC 3100 and MMC 3602. The functions of public relations within corporate and institutional structures; ethical standards of practice, and relationships of the practice to the public media and other modes of contemporary communication.

PUR 4001 ADVANCED PUBLIC RELATIONS (4)
PR: PUR 3000 and PUR 4100 or Cl. As final course in PR sequence, it involves intensive study of counseling and problem solving techniques used in professional practice. Analysis of case studies and preparation of complete PR program. Extensive reading in the literature of contemporary practice.

PUR 4100 WRITING FOR PUBLIC RELATIONS (4)
PR: JOU 3100, PUR 3000. Persuasive writing techniques unique to the practice of public relations; application of principles and ethical practices to problem-solving situations drawn from case studies; writing formats used in promotional and publicity literature.

PUR 4601 PUBLIC INFORMATION (4)
PR: AMH 2010 or AMH 2020, POL 2112, POS 2041, and PUR 4100, or Cl. The nature of government public information organization, practices, and criticisms thereof; the role of information specialists in reporting government at all levels to the public; conceptual differences in approach and techniques between governmental and private sector public relations.

PUR 4700 PUBLIC RELATIONS PRACTICUM (2)
PR: Senior standing and CI. For selected Public Relations Sequence majors. Practical experience outside the classroom in a professional public relations situation where the student works for academic credits under the tutelage of a professional practitioner.

RTV 3000 INTRODUCTION TO BROADCASTING (4)
PR: MMC 3100 and MMC 3602. A survey of the organization, structure, and function of the broadcasting industry.

RTV 3100 WRITING FOR RADIO AND TV (4)
PR: ENC 3466 or ENC 3486, RTV 3000. The writing of radio and television scripts such as documentaries, children's programs, commercials, dramas, talks, and demonstrations.

RTV 3210 RADIO PRODUCTION AND DIRECTION (4)
PR: RTV 3000. Radio production and direction; laboratory and broadcast experiences.

RTV 3230 BROADCASTING ANNOUNCING (4)
PR: ORI 3000, RTV 3000, SPC 2023 or LIN 2200 or THE 2020. Development of skills required for effective announcing and other appearances before microphone and camera.

RTV 3300 BROADCAST NEWS (4)
PR: JOU 3100, RTV 3000. The study and methods in gathering, writing, and editing newscasts for radio and television.

RTV 3941 RADIO PRACTICUM (1-2)
PR: RTV 3210 and CI. The study, rehearsal, and production of radio programs and materials.

RTV 4205 ADVANCED TV PRODUCTION AND DIRECTION (4)
PR: RTV 4220 and junior standing. Intensive study and practice of the techniques of TV production and direction with emphasis on both creative and experimental aspects of TV programming.

RTV 4220 TV PRODUCTION AND DIRECTION (4)
PR: RTV 3000 and junior standing. A basic course in the techniques of producing and directing TV programs.

RTV 4301 TV NEWS FILM (4)
PR: RTV 3300 or Cl. Techniques in writing and filming for television news.

RTV 4402 MEDIA CRITICISM: BROADCASTING (4)
PR: RTV 3000. A critical study of contemporary broadcast content.

RTV 4500 THE BROADCAST PROGRAM (4)
PR: RTV 3000. Program concepts, resources, costs, selection and scheduling. Analysis of programming in terms of structure, appeals and strengths.

RTV 4700 BROADCAST LAW (4)
PR: RTV 3000 or Cl. A study of the broadcasting industry from the perspective of governmental regulation and the political process with special emphasis on how regulatory policy is determined.

RTV 4942 TV PRACTICUM (1-2)
PR: RTV 4220 or Cl. The study, rehearsal and production of television programs and materials.

VIC 3000 INTRODUCTION TO VISUAL COMMUNICATIONS (4)
PR: MMC 3100 and MMC 3602. The survey of visual communication theory, techniques, and their contemporary application and social influences as applied to the visual media with emphasis on still photography, motion pictures, video tape, and graphics.

VIC 3100 PHOTOJOURNALISM I (4)
PR: MMC 3100 and MMC 3602. Camera operation, darkroom techniques, picture composition; editing, ethics, history, and laws in connection with photojournalism.

VIC 3102 PHOTOJOURNALISM II (4)
PR: VIC 3100 or Cl. Advanced process and practice of photography for publication. Content includes advanced camera and laboratory techniques, publication requirements and theory of photochemical color separation used in magazine and newspapers. Emphasis is placed on student production.

VIC 4103 COLOR PHOTOGRAPHY (4)
PR: VIC 3102 or Cl. Development of knowledge and skills of color photography for publication and presentation. Emphasis will be on the use of transparency and negative color materials in their application to the media. Laboratory required.

GRADUATE COURSES

FIL 5504 FILM STUDIES (4)
PR: Senior standing. Not open for credit to Mass Communications majors. An intensive review of film theory and practice as they relate to content in secondary school subjects such as English, social studies, history of journalism. Lab.

FIL 5601 FILM PRODUCTION MANAGEMENT (4)
PR: FIL 3201. The planning and management of motion picture productions.

MMC 5400 THEORY OF MASS COMMUNICATION (4)
PR: Senior standing. The nature of the mass communication process, its effects on individuals and groups; the moral, ethical, social and political implications in influencing and directing behavior. Analyses of theories of mass communication.

MMC 5900 DIRECTED READINGS IN MASS COMMUNICATIONS (1-4)
PR: Senior standing, CC and CI. Reading and directed study in special topics.

MMC 5910 INDIVIDUAL RESEARCH IN MASS COMMUNICATIONS (1-4)
PR: Senior standing, CC and CI. The course provides means for a student to do independent study in an area not covered by a numbered course.
MMT 5936 SELECTED TOPICS IN MASS COMMUNICATIONS STUDIES (1-4)
PR: Senior standing. Courses, including summer workshops, designed to meet current or specific topics of interest to the instructor and students.

MATHEMATICS


UNDERGRADUATE COURSES

MAA 4211 ADVANCED CALCULUS I (3)
PR: MAC 3414 with a grade of "C" or better. Concepts of limit, continuity, differentiation, and integration of functions in one and several variables. Major topics include partial differentiation, Rieman-Stieljes integrals, improper integrals, infinite series, uniform convergence, implicit-function theorems, line and surface integrals.

MAA 4212 ADVANCED CALCULUS II (3)
PR: MAA 4211. Continuation of MAA 4211.

MAA 4213 ADVANCED CALCULUS III (3)
PR: MAA 4212. Continuation of MAA 4212.

MAC 1104 COLLEGE ALGEBRA (4)
Real numbers and their properties, algebraic expressions, equations and inequalities, functions, polynomials, exponential and logarithmic functions. (No credit for students with credit in MAC 2242.)

MAC 1114 COLLEGE TRIGONOMETRY (3)
Angles, Trigonometric functions, properties and graphs of trigonometric functions, right triangles, laws of sines and cosines, polar coordinates.

MAC 2242 PRE-CALCULUS MATHEMATICS (4)
PR: Two years of secondary school mathematics including one year of algebra or HCC mathematics course taught on USF campus or CC. Students with a strong secondary school mathematics preparation should take MAC 2243. Basic algebraic concepts, functions, and graphs. The sequence MAC 2242, MAC 2243, MAC 2244 is primarily for students from Biological Sciences, Social Sciences, and Business.

MAC 2243 ELEMENTARY CALCULUS I (4)
PR: MAC 1104 or MAC 2242 or four years of secondary school mathematics or CC. The derivative, techniques of differentiation, curve sketching, applications of the derivative. (No credit for Mathematics majors or students with credit in MAC 3282 or MAC 3412.)

MAC 2244 ELEMENTARY CALCULUS II (4)
PR: MAC 2243. Antiderivatives, the definite integral, techniques of integration, logarithmic and exponential functions, applications. (No credit for Mathematics majors or students with credit in MAC 3282 or MAC 3412.)

MAC 3281 ENGINEERING CALCULUS I (4)
PR: Pass diagnostic test in algebra and trigonometry. Differentiation, limits, differentials, extrema, indefinite integral. (No credit for students with credit in MAC 2243 or MAC 3411.)

MAC 3282 ENGINEERING CALCULUS II (4)
PR: MAC 3281. Definite integral, trigonometric functions, log. exponential, applications. (No credit for students with credit in MAC 2244 or MAC 3412.)

MAC 3283 ENGINEERING CALCULUS III (3)
PR: MAC 3282. Techniques of integration, numerical methods, analytic geometry, polar coordinates, vector algebra, applications. (No credit for students with credit in MAC 3413.)

MAC 3284 ENGINEERING CALCULUS IV (3)
PR: MAC 3283. Multivariate calculus, series, applications. (No credit for students with credit in MAC 3414.)

MAC 3411 CALCULUS I (5)
PR: MAC 1104, MAC 1114 with a grade of "C" or better or CC. Limits, derivatives, applications. (No credit for students with credit in MAC 2243 or MAC 3281.)

MAC 3412 CALCULUS II (4)
PR: MAC 3411 with a grade of "C" or better or CC. Antiderivatives, the definite integral, applications, log. exponential, and trig functions. (No credit for students with credit in MAC 2244 or MAC 3282.)

MAC 3413 CALCULUS III (4)
PR: MAC 3412 with a grade of "C" or better or CC. Integration, polar coordinates, conic sections, vectors, interdeterminate forms and improper integrals. (No credit for students with credit in MAC 3283.)

MAC 3414 CALCULUS IV (4)
PR: MAC 3413 with a grade of "C" or better or CC. Vectors in 3-space, partial derivatives, multiple integrals. (No credit for students with credit in MAC 3284.)

MAD 4401 NUMERICAL ANALYSIS I (4)
PR: MAS 3103; ability to program a digital computer. Interpolation and quadrature, finite differences, numerical solution of algebraic and transcendental equations, numerical solution of differential equations, computer techniques.

MAD 4402 NUMERICAL ANALYSIS II (4)
PR: MAD 4401 and MAP 4302. Continuation of MAD 4401.

MAE 3810 NUMBER SYSTEMS (5)
The counting numbers, their properties and operations. The integers, their properties and operations. Prime numbers, modular arithmetic. Rational numbers, their properties and operations. (No credit for science majors.)

MAE 3811 BASIC ALGEBRAIC CONCEPTS (4)
PR: MAE 3810. Equations, systems of equations and inequalities. The real numbers as a complete ordered field. Complex numbers. (No credit for science majors.)

MAP 4302 DIFFERENTIAL EQUATIONS (4)
PR: MAC 3414. First order linear and nonlinear differential equations, higher order linear equations, applications.

MAS 3103 LINEAR ALGEBRA (4)
PR: MAC 3411 or CC. Vectors, matrices, systems of linear equations, linear transformations.

MAS 3114 MATRICES AND APPLICATIONS (4)
Vectors and matrices with applications selected from linear programming, game theory and graph theory. Emphasis on applications to business and the social sciences. (Credit for all science majors except Mathematics.)

MAS 4156 VECTOR ANALYSIS (3)
PR: MAC 3414. The algebra and calculus of vectors, applications, general coordinates, introduction to tensor analysis. (No credit for both MAE 4213 and MAS 4156.)

MAS 4301 ELEMENTARY ABSTRACT ALGEBRA (3)
PR: MHF 3102 or CC. Groups, rings integral domain, fields, integers, the rational, real, and complex number systems.

MAT 4906 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.)

MAT 4930 SELECTED TOPICS IN MATHEMATICS (1-6)
PR: CI. The course content will depend on the interest of faculty members and student demand.

MGF 1113,1114 MATHEMATICS AND THE MODERN WORLD I, II (4,4)
Illustrates the relationship of mathematics to our world and puts the development of mathematics in a historical perspective.

MGF 1202,1203 FUNCTIONAL MATHEMATICS I, II (4,4)
PR: Two years of secondary school mathematics including one year of algebra or MAT 1033 (HCC course taught on USF campus) or CC. Designed as a terminal course for general cultural purposes. Explores the language of mathematics, set theory, linear programming, matrices, probability, statistics, applications.

MHF 3102 SET THEORY (3)
PR: MAC 3411 or CC. Relations, functions, order, cardinal numbers.

MTG 3204 INFORMAL GEOMETRY (4)
Concepts of length, congruence, similarity, transformations in the plane. Ruler and compass constructions, impossible constructions coordinate systems, graphs, lines and curves. (No credit for science majors.)

MTG 4212 GEOMETRY I (3)
PR: MAC 3411. Emphasis on axiomatics, advanced Euclidean geometry, elements of projective geometry, non-Euclidean geometries.

MTG 4213 GEOMETRY II (3)
PR: MTG 4212. Continuation of MTG 4212.

STA 3023 INTRODUCTORY STATISTICS I (5)
Hypothesis testing, estimation; normal, Chi-square, t, F, binomial, multinomial, distributions; ANOVA, CR, RCB designs; single df, regression, correlation, contingency tables. Students who successfully complete this course may not also receive credit for either ECO 4402 and GEB 3121 or STA 3122.

STA 3024 INTRODUCTORY STATISTICS II (5)
PR: STA 3023 or CC. Factorials, ANCOV; multiple curvilinear regression; response surfaces; Latin square, Split Plots, incomplete blocks designs; distribution free methods.

STA 3404 ELEMENTARY PROBABILITY (4)
Counting techniques, probability, expectation, probability distributions, the law of large numbers. (No credit for Mathematics majors. Credit for Department of Biology majors.)

STA 4442 INTRODUCTORY PROBABILITY THEORY I (3)
PR: MAC 3414 and MHF 3102 or CC. Probability spaces, discrete and continuous probability distributions, expectations.

STA 4443 INTRODUCTORY PROBABILITY THEORY II (3)
PR: STA 4442. Joint distributions, sums of random variables, weak and strong laws of large numbers, limit theorems.

GRADUATE COURSES

MAA 5405 COMPLEX ANALYSIS AND APPLICATION (3)
PR: MAC 3414 or CC. Complex numbers, analytic and harmonic functions, power series, contour integrals, residues and poles with emphasis on applications.

MAA 6406 COMPLEX ANALYSIS I (3)

MAA 6407 COMPLEX ANALYSIS II (3)
PR: MAA 6406. Continuation of MAA 6406.

MAA 6408 COMPLEX ANALYSIS III (3)
PR: MAA 6407. Continuation of MAA 6407.

MAA 6516 INTRODUCTION TO FUNCTIONAL ANALYSIS I (4)

MAA 6517 INTRODUCTION TO FUNCTIONAL ANALYSIS II (4)
PR: MAA 6516. Continuation of MAA 6516.

MAA 6616 MEASURE AND INTEGRATION I (3)

MAA 6617 MEASURE AND INTEGRATION II (3)
PR: MAA 6616. Continuation of MAA 6616.

MAA 6618 MEASURE AND INTEGRATION III (3)
PR: MAA 6617. Continuation of MAA 6617.

MAD 5305 INTRODUCTION TO GRAPH THEORY (3)
PR: CC. Brief introduction to classical graph theory (4-color conjecture, etc.), directed graphs, connected digraphs, condensations, incidence matrices, Polya's Theorem, networks.

MAD 5407 ANALYSIS OF NUMERICAL METHODS I (4)

MAD 5408 ANALYSIS OF NUMERICAL METHODS II (4)
PR: MAD 5407. Continuation of MAD 5407.

MAD 6616 ADVANCED ALGEBRA I (4)
PR: MAS 5312 or CC. Algebraic automata theory.

MAD 6617 ADVANCED ALGEBRA II (4)
PR: MAD 6616 or CC. Algebraic coding theory.

MAD 5872 GEOMETRY FOR TEACHERS (3)
PR: MTG 4212 and MTG 4213 and bachelor's degree or CC. Vectors, measures, perpendicularity and parallelism, properties of geometric figures, induction and deduction. (No credit for Mathematics majors.)

MAD 5874 ABSTRACT ALGEBRA FOR TEACHERS (3)
PR: MAS 3103 and MAS 4301 and bachelor's degree or CC. Groups, fields, vector spaces as they relate to high school algebra and geometry. (No credit for Mathematics majors.)

MAD 5875 COMPLEX VARIABLES FOR TEACHERS (3)
PR: MAC 3414 and MAS 4301 and bachelor's degree or CC. Algebra and geometry of the complex numbers, functions of a complex variable, limits, derivatives, integrals, elementary functions and their geometry, fundamental theorem of algebra. (No credit for Mathematics majors.)
MAE 5876 MATHEMATICAL ANALYSIS I FOR TEACHERS
PR: MAC 3414 and bachelor's degree or CC. Advanced consideration of limits, continuity, derivatives, differentials. (No credit for Mathematics majors.)

MAE 5877 MATHEMATICAL ANALYSIS II FOR TEACHERS
PR: MAE 5876 or CC. Advanced considerations of the definite integral, fundamental theorem of calculus, infinite series. (No credit for Mathematics majors.)

MAP 5316 ADVANCED DIFFERENTIAL
EQUATIONS I
PR: MAP 4302, MAS 3103 or CC. Existence and uniqueness of solutions, oscillation and comparison theorems, asymptotic behavior solutions, stability, perturbation theory, applications.

MAP 5317 ADVANCED DIFFERENTIAL
EQUATIONS II
PR: MAP 5316. Continuation of MAP 5316.

MAP 5403 ANALYSIS OF ALGORITHMS
PR: MAD 4402 or CC. Mathematical Theory associated with algorithms for computer information processing; expected time and space requirements of algorithms, comparison of algorithms, construction of optimal algorithms, theory, underlying particular algorithms.

MAP 5404 ANALYSIS OF ALGORITHMS II
PR: MAP 5403. Continuation of MAP 5403.

MAP 5406 PARTIAL DIFFERENTIAL
EQUATIONS AND APPLICATIONS
PR: MAP 4302 and CC. Separation of variables, the heat equation, wave equation, Laplace's equation, classification, Green's functions with emphasis on applications.

MAP 5407 METHODS OF APPLIED
MATHEMATICS

MAP 5413 FOURIER ANALYSIS
PR: MAC 3414 or CC. Trigonometric Fourier series, orthogonal systems, convergence of trigonometric Fourier series, operations on Fourier series.

MAP 5423 INTEGRAL TRANSFORMS I
PR: MAA 4211, MAP 4302 or CC. Introduction to integral transforms with special emphasis on the Laplace and Fourier transforms, applications to differential equations.

MAP 5424 INTEGRAL TRANSFORMS II
PR: MAP 5423. Continuation of MAP 5423.

MAP 5426 SPECIAL FUNCTIONS
PR: MAP 4302. Orthogonal functions, the gamma functions, Bessel functions, applications.

MAP 5449 ASYMPTOTIC METHODS
PR: MAA 5405 and MAP 5316 or MAP 5407. Asymptotic series, applications to differential equations and integrals, and perturbation theory.

MAP 6207 MATHEMATICAL OPTIMIZATION
THEORY III
PR: MAA 6517, STA 5647 or CC. Linear programming in abstract spaces; integer programming; stochastic programming. Recent research in mathematical programming and related areas.

MAP 6216 CALCULUS OF VARIATIONS
PR: MAA 5307 and CC. Maxima and minima of functionals, problems of Lagrange, Bolza and Mayer and other topics.

MAP 6336 THEORY OF ORDINARY DIFFERENTIAL EQUATIONS I
PR: MAP 5316 or CC. Existence theorems, topics in oscillation theory, asymptotic behavior, stability and boundedness of solutions of differential equations.

MAP 6337 THEORY OF ORDINARY DIFFERENTIAL EQUATIONS II
PR: MAP 6336. Continuation of MAP 6336.

MAP 6356 PARTIAL DIFFERENTIAL
EQUATIONS I
PR: MAP 5406 or CC. Classification of second order equations, Cauchy problems, Dirichlet and Neumann problems, mixed problems, properties of solutions.

MAP 6357 PARTIAL DIFFERENTIAL
EQUATIONS II
PR: MAP 6356. Continuation of MAP 6356.

MAP 6447 PARTIAL DIFFERENCE
EQUATIONS

MAP 6456 TRIGONOMETRIC SERIES I
PR: MAA 5307. Selected Topics in Fourier Series and summability, orthogonal polynomials, almost periodic functions, completeness of sets of functions.

MAP 6457 TRIGONOMETRIC SERIES II
PR: MAP 6456. Continuation of MAP 6456.

MAS 5146 ADVANCED LINEAR ALGEBRA
PR: MAS 3103, MHF 3102 or CC. Vector spaces, linear independence, dimensions, matrices, linear transformations.

MAS 5147 MATRIX COMPUTATIONS

MAS 5158 TENSOR ANALYSIS
PR: MAS 4156 or CC. The calculus of tensors, applications to differential geometry and physics.

MAS 5215 NUMBER THEORY
PR: CC. Congruences, quadratic residues, selected topics.

MAS 5311 ALGEBRA I
PR: MAC 3414, MAS 5146, MHF 3102. An introduction to group theory.

MAS 5312 ALGEBRA II
PR: MAS 5311. An introduction to Galois theory.

MAS 6218 TOPICS IN NUMBER THEORY I
PR: MAS 5312 or CC. Continued fractions, approximations of irrational numbers, lattices, geometric theory, algebraic numbers, density of sequences of integers, analytic number theory, the prime number theorem.

MAS 6219 TOPICS IN NUMBER THEORY II
PR: MAS 6218. Continuation of MAS 6218.

MAS 6226 ALGEBRAIC NUMBER THEORY
PR: MAS 5312 or CC. Algebraic number fields, algebraic integers, basic and discriminant of algebraic number fields, ideals, decomposition of ideals. Theorem of Minkowski, Applications of Galois Theory to the Theory of Ideals, Units.

MAT 5932 SELECTED TOPICS
(1-6)
PR: Senior or junior standing and CC. Each topic is a course of study. 01-History of Mathematics, 03-Logic and Foundations, 05-Number Theory, 07-Topics in Algebra, 09-Mathematics for Physics, 11-Topics in Probability and Statistics, 13-Topics in Analysis, 15-Topics in Topology.

MAT 6908 INDEPENDENT STUDY
(var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

MAT 6911 DIRECTED RESEARCH
(var.)
PR: GR. Master's level. Repeatable. (S/U only.)

MAT 6915 GRADUATE RESEARCH METHODS
(1-5)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a
MAT 6932 SELECTED TOPICS (1-6)
PR: CC. 01-Topology, 02-Analysis, 03-Algebra, 04-Applied Mathematics, 05-Graph Theory, 06-Number Theory, 07-
Mathematics for Physics, 08-Probability, 09-Statistics, 10-
Complex Analysis.

MAT 6938 RECENT ADVANCES IN MATHEMATICS WITH EMPHASIS ON THEIR IMPACT ON COLLEGE-LEVEL COURSES (3-6)
A course designed to consider and study the recent developments of mathematics, especially those developments that have an effect on altering the basic concepts and ideas of mathematics and imply a change in the presentation of introductory material in the field. (Credit not applicable toward thesis degree requirements.) (S/U only.)

MAT 6939 GRADUATE SEMINAR (1-6)
Direction of this seminar is by a faculty member. Students are required to present research papers from the literature. (S/U only.)

MAT 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.)

MAT 6971 THESIS: MASTER'S (var.)
Repeattable. (S/U only.)

MAT 7912 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

MAT 7980 DISSertation: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

Mhf 5302 ELEMENTARY MATHEMATICAL LOGIC (3)
PR: CC. Truth tables, tautologies, quantifiers, rules of inference, informal proofs in mathematics.

Mhf 6306 LOGIC AND FOUNDATIONS I (4)
PR: CC. Propositional calculus, Post's theorem, first order and equality calculi, models, completeness and consistency theorems, Godel's theorem, recursive functions.

Mhf 6307 LOGIC AND FOUNDATIONS II (4)
PR: Mhf 6306. Continuation of Mhf 6306.

MTG 5316 TOPOLOGY I (4)

MTG 5317 TOPOLOGY II (4)
PR: MTG 5316. Continuation of MTG 5316.

MTG 5356 CALCULUS ON MANIFOLDS (4)
PR: MAA 5507 and MAS 5146. Calculus of several variables.

MTG 6256 DIFFERENTIAL GEOMETRY (3)
PR: CC. Local differential geometry, curvature, evolutes and involutes, calculus of variations.

MTG 6326 ADVANCED TOPOLOGY I (4)
PR: MTG 5317 and CC. Function spaces, compactifications, covering spaces, other topics.

MTG 6327 ADVANCED TOPOLOGY II (4)
PR: MTG 6326. Continuation of MTG 6326.

MTG 6346 ALGEBRAIC TOPOLOGY (3)
PR: MTG 6327 or CC. Homotopy, homology groups, local homology groups.

MTG 6356 TOPOLOGICAL ALGEBRA I (4)
PR: MTG 6327 and CC. Topological semigroups, topological groups, topological rings and fields, Haar measure.

MTG 6357 TOPOLOGICAL ALGEBRA II (4)
PR: MTG 6356. Continuation of MTG 6356.

STA 5166 APPLIED STATISTICAL METHODS I (4)
PR: STA 4442 and CC. Statistical inference in physical and engineering sciences utilizing sample probability distributions, point and interval estimation and test of significance. 3 lecture periods and 1 lab period.

STA 5167 APPLIED STATISTICAL METHODS II (4)
PR: STA 5166. Applications of analysis of variance and covariance, regression analysis use of \( x^2 \) for contingency tables and goodness of fit procedures. 3 lecture periods and 1 lab period.

STA 5206 STOCHASTIC PROCESS I (3)

STA 5326 MATHEMATICAL STATISTICS I (3)
PR: STA 5447. Sample distribution theory, point & interval estimation theory and theory of hypothesis testing.

STA 5327 MATHEMATICAL STATISTICS II (3)
PR: STA 5326. Statistical decision theory to include admissibility of Bayes rules, risk functions, minimax invariant rules and most powerful tests.

STA 5446 PROBABILITY THEORY I (4)
PR: MAA 4212 or MAA 5306. Concepts of probability theory, axioms of probability, random variables, probability distributions and distributions of functions of stochastic variables.

STA 5447 PROBABILITY THEORY II (4)

STA 5526 NON-PARAMETRIC STATISTICS I (3)
PR: STA 5526, CC. Theory and methods of non-parametric statistics, order statistics, tolerance region and their applications.

STA 5546 MATHEMATICAL OPTIMIZATION THEORY I (3)

STA 5647 MATHEMATICAL OPTIMIZATION THEORY II (3)
PR: STA 5646 or CC. Theory of nonlinear programming, Convexity, duality, and optimality criteria. Convergence of solution algorithms. Unconstrained optimization and search techniques.

STA 6346 ADVANCED MATHEMATICAL STATISTICS (3)

STA 6466 ADVANCED PROBABILITY THEORY I (3)
PR: MAA 6617 or CC. Measure theoretic approach to probability, random variables, distribution functions, expectation and characteristic functions.

STA 6467 ADVANCED PROBABILITY THEORY II (3)
PR: STA 6466. Convergence of sequence of random variables, weak and strong laws of large numbers, limit theory of probability distributions.

STA 6527 NON-PARAMETRIC STATISTICS II (3)
PR: STA 5526 or CC. Theory and applications of advanced non-parametric methods to include order statistics Kolmokoror- Smirron and Cramer statistics.

STA 6746 MULTIVARIATE STATISTICAL ANALYSIS I (3)
PR: STA 6876. The multivariate normal, estimation of mean
vector and covariance matrix, correlation analysis, generalized T-statistics and testing of the general linear hypothesis.

**STA 6827 STOCHASTIC PROCESS II** (3)
PR: STA 5206 or CC. Continuous parameter Markov chains, martingale theory, stationary processes with discrete and continuous increments.

**STA 6876 TIME SERIES ANALYSIS I** (3)
PR: STA 5326. Basic concepts of the theory and applications of time series analysis to include filtering, forecasting modeling, spectral analysis of univariate realizations with applications.

**MEDICAL TECHNOLOGY**

Director: E. D. Olsen; Professors: E. D. Olsen, W. S. Silver; Associate Professor: J. R. Linton; Assistant Professor: S. L. Vandor.

**UNDERGRADUATE COURSES**

**MLS 3031 INTRODUCTION TO MEDICAL TECHNOLOGY** (1)
PR: Senior standing and acceptance into an approved affiliated hospital. An introduction to the principles and practices of medical technology and their relationship to patient care. A hospital internship course for medical technology majors.

**MLS 4215 CLINICAL MICROSCOPY I** (5)
PR: Senior standing and acceptance into an approved affiliated hospital. Lecture and laboratory instruction such as urinalysis, parasitology, and histological technique. A hospital internship course for medical technology majors.

**MLS 4216 CLINICAL MICROSCOPY II** (5)
PR: Senior standing and acceptance into an approved affiliated hospital. A continuation of MLS 4215. A hospital internship course for medical technology majors.

**MLS 4309 HEMATOLOGY** (6)
PR: Senior standing and acceptance into an approved affiliated hospital. Lecture and laboratory instruction in the methods of study of hematological disorders. A hospital internship course for medical technology majors.

**MEDICINE**

Course listings for the College of Medicine may be found under the appropriate departmental headings: Anatomy, Biochemistry, Comprehensive Medicine, Family Medicine, Medical Microbiology, Medicine, Obstetrics and Gynecology, Ophthalmology, Pathology, Pediatrics, Pharmacology, Physiology, Psychiatry, Radiology, and Surgery.

**Anatomy**


**BMS 6100 GROSS ANATOMY** (7)
PR: Admission to College of Medicine.

**BMS 6110 MICROSCOPIC ANATOMY** (4)
PR: Admission to College of Medicine.

**BMS 6150 NEUROANATOMY** (4)
PR: Admission to College of Medicine.

**BMS 6160 ANATOMY SEMINAR** (0)
PR: Consent of Chairman, Department of Anatomy.

**BMS 7170 REGIONAL ANATOMY I—Head and Neck** (5)
PR: Enrolled in College of Medicine.

**BMS 7171 REGIONAL ANATOMY II—Thorax, Abdomen, Pelvis and Perineum** (5)
PR: Enrolled in College of Medicine.

**BMS 7172 REGIONAL ANATOMY III—Extremities** (5)
PR: Enrolled in College of Medicine.

**BMS 7173 SYSTEMIC ANATOMY** (20)
PR: Enrolled in the College of Medicine.

**BMS 7174 MEDICAL DEVELOPMENT ANATOMY AND TERATOLOGY** (5)
PR: Enrolled in College of Medicine.

**BMS 7175 ADVANCED NEUROANATOMY** (5)
PR: Enrolled in College of Medicine.

**BMS 7176 ADVANCED MICROSCOPIC ANATOMY** (5)
PR: Enrolled in College of Medicine.

**BMS 7177 APPLIED NEUROANATOMY** (10)
PR: Enrolled in College of Medicine.

**GMS 6600 CORE COURSE IN HUMAN ANATOMY** (7)
PR: Admission to Ph.D. Program in Medical Sciences.

**GMS 6609 ADVANCED HUMAN GROSS ANATOMY** (8-16)
PR: GMS 6600-GMS 6300 or consent of Chairman.

**GMS 6608 ADVANCED MICROSCOPIC ANATOMY** (4-8)
PR: GMS 6600-GMS 6300 or consent of Chairman.
GMS 6601 METHODS OF ELECTRON MICROSCOPY IN MEDICAL RESEARCH (4)
PR: 6600-GMS 6300, GMS 6608, GMS 6602 or consent of Chairman.

GMS 6602 NEURAL CORRELATES OF BEHAVIOR (4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6603 COMPARATIVE NEUROANATOMY (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6604 HUMAN EMBRYOLOGY (4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6605 COMPARATIVE HEMATOLOGY (3)
PR: GMS 6600-GMS 6609, 6608 or consent of Chairman.

GMS 6606 ANATOMICAL ILLUSTRATIONS AND METHODS (3)
PR: GMS 6600-GMS 6300, GMS 6609, 6608, 6602 or consent of Chairman.

GMS 6607 HISTORY OF ANATOMY (2)
PR: GMS 6600-GMS 6300 or consent of Chairman.

Biochemistry


BMS 6200 BIOCHEMISTRY (9)
PR: Admission to College of Medicine.

BMS 6230 BIOCHEMISTRY SEMINAR (0)
PR: Consent of Instructor.

BMS 7260 RESEARCH IN BIOCHEMISTRY (var.)
PR: Enrolled in College of Medicine.

BMS 7262 MOLECULAR BASIS OF METABOLIC REGULATION (5)
PR: Admitted to College of Medicine.

GMS 6200 CORE COURSE IN MEDICAL BIOCHEMISTRY (7)
PR: Admission to Ph.D. Program in Medical Sciences.

GMS 6103 METABOLIC BASIS OF DISEASE (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6414 BIOLOGICAL MEMBRANES-STRUCTURE AND FUNCTION (4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6415 LIPID METABOLISM AND REGULATION (4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6416 MACROMOLECULAR METABOLISM (4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

Comprehensive Medicine


MEL 8203 FACTORS AFFECTING MEDICAL PRACTICE (10)

MEL 8204 MEDICAL BIOLOGICAL STATISTICS (var.)

MEL 8205 COMMUNITY MEDICINE—PUBLIC HEALTH (var.)

MEL 8206 BASIC EPIDEMIOLOGY FOR MEDICAL STUDENTS (var.)

Family Medicine


MEL 7255 OUT-PATIENT FAMILY MEDICINE (var.)
PR: Enrolled in College of Medicine.

MEL 7256 IN-PATIENT FAMILY MEDICINE (var.)
PR: Enrolled in College of Medicine.

BCC 8171 FAMILY PRACTICE PRECEPTORSHIP (var.)

BCC 8172 ADVANCED FAMILY MEDICINE (5-20)

Interdisciplinary

MEL 7320 EXTRAMURAL CLERKSHIP (var.)
PR: Enrolled in College of Medicine.

MEL 7100 EXPERIMENTAL ONCOLOGY (20)
PR: Enrolled in College of Medicine.

MEL 7102 PERINATOLOGY (10)
PR: Enrolled in College of Medicine.

MEL 7103 PEDIATRIC CARDIOLOGY (10)
PR: Enrolled in College of Medicine.

MEL 7105 RESEARCH AND CLINICAL EXPERIENCE IN ALLERGY (20)
PR: Enrolled in College of Medicine.

MEL 7104 DEPARTMENTAL OVERVIEWS (5-20)
PR: Enrolled in College of Medicine.

BCC 9180 AMBULATORY CARE ROTATION (20)

GMS 7418 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

GMS 7930 SELECTED TOPICS (1-4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 7939 GRADUATE SEMINAR (1)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 7980 DISSERTATION: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

Internal Medicine


BMS 6810 INTRODUCTION TO MEDICINE (14)
PR: Admission to College of Medicine.

BMS 6830 PHYSICAL DIAGNOSIS (20)
PR: Admission to College of Medicine.

BCC 6110 MEDICINE CLERKSHIP (var.)
PR: Admission to College of Medicine.

MEL 7303 ELECTRO-CARDIOGRAPHIC INTERPRETATION (10)
PR: Enrolled in College of Medicine.

MEL 7321 CLINICAL DERMATOLOGY (10)
PR: Enrolled in the College of Medicine.
MEL 7305 CLINICAL ENDOCRINOLOGY AND METABOLISM
PR: Enrolled in College of Medicine.

MEL 7306 GASTROENTEROLOGY ELECTIVE
PR: Enrolled in College of Medicine.

MEL 7310 INFECTIOUS DISEASE
PR: Enrolled in College of Medicine.

MEL 7313 CLINICAL NEPHROLOGY
PR: Enrolled in College of Medicine.

MEL 8308 HEMATOLOGY-ONCOLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6107 ADVANCES IN VIROLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6108 MICROBIAL PHYSIOLOGY AND GENETICS
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6109 REGULATORY CONTROL MECHANISMS IN ANIMAL CELL SYSTEMS
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6110 HOST-PARASITE INTERACTIONS
PR: GMS 6600-GMS 6300 or consent of Chairman.

Obstetrics/Gynecology

Chairperson: J. M. Ingram; Professor: J. M. Ingram; Associate Professors: W. R. Anderson; Assistant Professors: F. J. Bouis, A. M. Messina, H. Prapath, B. S. Verkauf.

BCC 6130 OBSTETRICS-GYNECOLOGY CLERKSHIP
PR: Admission to College of Medicine.

MEL 7404 GYNECOLOGIC-ONCOLOGY
PR: Enrolled in College of Medicine.

MEL 7440 RESEARCH IN OBSTETRICS-GYNECOLOGY
PR: Enrolled in College of Medicine.

MEL 7411 PREPARATION FOR PRACTICE
PR: Enrolled in College of Medicine.

MEL 7410 THE INFERTILE COUPLE
PR: Enrolled in College of Medicine.

Ophthalmology

Chairperson: W. C. Edwards; Professor: W. C. Edwards; Associate Professor: W. E. Layden; Assistant Professors: T. Holekamp, R. Gstaider, J. Older, L. D. Perry, E. Torczynski.

MEL 7503 TUTORIAL COURSE OF ADVANCED OPHTHALMOLOGY
PR: Enrolled in College of Medicine.

MEL 7501 MEDICAL OPHTHALMOLOGY
PR: Enrolled in College of Medicine.

MEL 8524 OPHTHALMIC RESEARCH
PR: Enrolled in College of Medicine.

Pathology


GMS 6111 HUMAN SYSTEMIC PATHOLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6112 BIOCHEMICAL PATHOLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6113 IMMUNOPATHOLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6300 CORE COURSE IN PATHOLOGY
PR: Admission to the Ph.D. Program in Medical Sciences.

GMS 6301 ADVANCED GROSS PATHOLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6302 ADVANCED MICROSCOPIC PATHOLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6303 ELECTRON MICROSCOPY OF DISEASE STATES
PR: GMS 6600-GMS 6300 or consent of Chairman.
GMS 6304 AUTORADIOGRAPHIC TECHNIQUES (2)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6417 ANIMAL RESEARCH METHODS (4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

Pediatrics

BCC 6142 PEDIATRICS CLERKSHIP (13)
PR: Admission to College of Medicine.

MEL 7551 INPATIENT PEDIATRICS, TAMPA GENERAL HOSPITAL (10)
PR: Enrolled in College of Medicine.

MEL 7565 NEONATOLOGY (10)
PR: Enrolled in College of Medicine.

MEL 7591 RESEARCH IN PEDIATRIC MEDICINE AND GENETICS (20)
PR: Enrolled in College of Medicine.

MEL 7596 METABOLIC DISEASE RESEARCH (10)
PR: Enrolled in College of Medicine.

MEL 8555 ALL CHILDREN'S HOSPITAL (10)

MEL 8566 PEDIATRIC ENDOCRINOLGY (CLINICAL) (10)

MEL 8567 PEDIATRIC PRACTICE (10)

MEL 8568 PEDIATRIC HEMATOLOGY-ONCOLOGY (10)

MEL 8569 PEDIATRIC NEUROLOGY (var.)

MEL 8570 GENETICS ELECTIVE (var.)

MEL 8590 NEONATAL RESEARCH (10)

MEL 8595 PEDIATRIC ENDOCRINE RESEARCH (20)

Pharmacology
Chairperson: A. Szentivyani; Professors: D. L. Smith, A. Szentivyani; Associate Professors: D. F. Fitzpatrick, J. J. Krzanowski, Jr., J. B. Polson; Assistant Professors: J. F. Williams.

BMS 6400 PHARMACOLOGY (9)
PR: Admission to College of Medicine.

BMS 6420 PHARMACOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Pharmacology.

BMS 6469 AUTONOMIC PHARMACOLOGY (3-6)
PR: GMS 6600C-GMS 6300C or CI. Designed to provide an extensive discussion of the biochemical and physiologic basis of current concepts in autonomic pharmacology.

BMS 7460 CLINICAL PHARMACOLOGY (5)
PR: Enrolled in College of Medicine.

BMS 7461 IMMUNOPHARMACOLOGY (1½)
PR: Enrolled in College of Medicine.

BMS 7462 PULMONARY PHARMACOLOGY (5)
PR: Enrolled in College of Medicine.

BMS 7463 DRUG METABOLISM AND PHARMACOCINETICS (5)
PR: Enrolled in College of Medicine.

GMS 6500 CORE COURSE IN PHARMACOLOGY (7)
PR: Admission to Ph.D. program in Medical Sciences.

GMS 6501 THEORETICAL PHARMACOLOGY (5-10)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6502 CLINICAL PHARMACOLOGY (5-10)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6503 PHARMACOLOGY LABORATORY (2-4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6504 IMMUNOPHARMACOLOGY (3-6)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6505 PHARMACOLOGY OF BACTERIAL PRODUCTS (4-8)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6506 THE PHARMACOLOGY OF BIOLOGICAL MEMBRANES (4-8)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6507 DRUG METABOLISM (3-6)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6508 DRUG ADDICTION, TOLERANCE AND PHYSICAL DEPENDENCE (2-4)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6509 THE HISTORY OF PHARMACOLOGICAL THOUGHT (1-2)
PR: GMS 6600-GMS 6300 or consent of Chairman.

Physiology

BMS 6500 MEDICAL PHYSIOLOGY (9)
PR: Admission to College of Medicine.

BMS 6530 PHYSIOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Physiology.

BMS 7560 RESEARCH IN PHYSIOLOGY (var.)
PR: Enrolled in College of Medicine.

BMS 7561 CARDIO-PULMONARY-RENAL PHYSIOLOGY (5)
PR: Enrolled in College of Medicine.

GMS 6400 CORE COURSE IN PHYSIOLOGY (7)
PR: Admission to Ph.D. program in Medical Sciences.

GMS 6401 KIDNEY, FLUIDS AND ELECTROLYTES (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6402 RESPIRATION (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6403 ENDOCRINE MECHANISMS (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6404 NEUROPHYSIOLOGY (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6405 NERVE, MUSCLE AND SYNAPSE (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6406 CARDIAC MUSCLE (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6407 SMOOTH MUSCLE (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6408 SKELETAL MUSCLE (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6409 PERIPHERAL CIRCULATION (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6410 CARDIOVASCULAR REGULATION (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6411 CARDIOPULMONARY CIRCULATION (3)
PR: GMS 6600-GMS 6300 or consent of Chairman.

GMS 6412 HEMODYNAMICS (3)
MUSIC 243

GMS 6413 PHYSIOLOGICAL BASIS OF CARDIOLOGY
PR: GMS 6600-GMS 6300 or consent of Chairman.

Psychiatry


BCC 6840 INTRODUCTION TO PSYCHIATRY
BMS 6850 PSYCHIATRY SEMINAR (0) PR:

BMS 6840 INTRODUCTION TO PSYCHIATRY (3) PR: Admission to College of Medicine.
BMS 6850 PSYCHIATRY SEMINAR (0) PR: Consent of Chairman, Department of Psychiatry.
BMS 6880 BIOSTATISTICS (1) PR: Admission to College of Medicine.
BCC 6150 PSYCHIATRY CLERKSHIP (13) PR: Admission to College of Medicine.
MEL 7602 ELECTIVE IN CHILD PSYCHIATRY (10) PR: Enrolled in College of Medicine.
MEL 7607 INTRODUCTION TO PSYCHOSOMATIC MEDICINE (10) PR: Enrolled in College of Medicine.
MEL 7611 ADVANCED CLERKSHIP IN PSYCHIATRY (var.) PR: Enrolled in College of Medicine.
MEL 8664 PSYCHIATRIC RESEARCH (var.)

Radiology


MEL 7700 GENERAL RADIOLOGY (var.) PR: Enrolled in College of Medicine.

Surgery


BCC 6160 SURGERY CLERKSHIP (20) PR: Admission to College of Medicine.
MEL 7750 ANESTHESIOLOGY ELECTIVE (11) PR: Enrolled in College of Medicine.
MEL 7800 GENERAL SURGERY ELECTIVE (var.) PR: Enrolled in College of Medicine.
MEL 7801 GENERAL SURGERY PRECEPTORSHIP (11) PR: Enrolled in College of Medicine.
MEL 7806 PLASTIC SURGERY PRECEPTORSHIP (11) PR: Enrolled in College of Medicine.
MEL 7807 THORACIC SURGERY ELECTIVE (20) PR: Enrolled in College of Medicine.
MEL 7812 NEUROSURGERY ELECTIVE (10) PR: Admission to College of Medicine.
MEL 7813 OTOLARYNGOLOGY ELECTIVE (var.) PR: Enrolled in College of Medicine.
MEL 7816 OTOLARYNGOLOGY PRECEPTORSHIP (var.) PR: Enrolled in College of Medicine.
MEL 7817 ORTHOPEDIC ELECTIVE (var.) PR: Third year student enrolled in College of Medicine.
MEL 7822 CLINICAL UROLOGY ELECTIVE (20) PR: Enrolled in College of Medicine.
MEL 8809 PEDIATRIC ORTHOPEDIC ELECTIVE (12) PR: Enrolled in College of Medicine.
MEL 8893 ORTHOPEDIC RESEARCH ELECTIVE (12)

MILITARY SCIENCE

UNDERGRADUATE COURSES
MIS 3410C FUNDAMENTALS OF LEADERSHIP (4) PR: AMH 3540, MIS 1010C, or CI. The dual role of the military officer as leader and manager; problems of military leadership in the volunteer army; examination of classical leadership traits and principles, and the role of officers in the various branches of the Army.

MIS 4421C SEMINAR IN LEADERSHIP AND MANAGEMENT (4) PR: MIS 3410C, CI. Obligations and responsibilities of a commissioned officer, with emphasis on application of sound leadership to all situations. Uniform Code of Military Justice and its relation to civilian law; Fundamentals of both offensive and defensive tactics and role of various branches of the Army in tactical operations. Role of the U.S. in world affairs in the 1970's.

MUSIC


UNDERGRADUATE COURSES
MUC 2202 COMPOSITION (3) PR: MUT 1113 and CI. Private instruction in original composition with composition lab meeting 5 times each quarter. Required of composition majors. May be repeated for four quarters.
MUC 2301 INTRODUCTION TO ELECTRONIC MUSIC
History and repertory of electronic music; standard sound studio techniques; basic electronics as applied in electronic sound synthesis; mathematics for music, composition and electronic music.

MUC 3203 COMPOSITION
PR: Necessary competency at MUC 2202 level determined by faculty jury. Private instruction in original composition with composition lab meeting 5 times each quarter. Required of composition majors. May be repeated for four quarters.

MUC 3401,3402,3403 ELECTRONIC MUSIC-ANALOG SYNTHESIS
PR: MUC 2301 and CI. Composition for tape medium with analog synthesizers; use of sound recording studio; repertory or analog music synthesis; technical basis of analog systems design and construction.

MUC 3441,3442,3443 ELECTRONIC MUSIC-DIGITAL SYNTHESIS
PR: MUC 2301 and CI. Computer assisted composition for conventional instruments; composition for tape medium with computer controlled analog synthesizers; direct digital synthesis; digital systems design and construction.

MUC 3601,3602,3603 CONTEMPORARY TECHNIQUES OF COMPOSITION
PR: CI. Instruction in the use of major Twentieth-Century compositional techniques; tonal, unordered set, and serial composition and the use of indeterminacy in composition and performance.

MUC 4204 COMPOSITION
PR: Necessary competency at MUC 3203 level determined by faculty jury. Private instruction in original composition with composition lab meeting 5 times each quarter. Required of composition majors. Must be repeated for credit for a minimum of 9 hours for majors.

MUC 4405,4406,4407 ELECTRONIC MUSIC—REAL-TIME PERFORMANCE
PR: MUC 3403 and MUC 3443 or equivalent. Composition for analog and digital equipment for real-time performance applications; sound synthesis, interfacing electronics with conventional instruments, in-performance-directed composition, and design and construction of electronic composing/performing machines; use of scores, system flexibility and event-detail prediction.

MUC 4501 SEMINAR IN NEW MUSICAL SYSTEMS
PR: CI. Experimental sound sources and ensemble groupings; creating of new instruments; unfamiliar sonic materials and unique social contexts for music. May be repeated for credit.

MUG 3101 BASIC CONDUCTING
PR: CI. The study and practical application of basic conducting techniques. Development of skills related to the conducting of musical scores.

MUG 4201 CHORAL CONDUCTING
PR: MUG 3101 or its equivalent and CI. Practical application of conducting techniques to choral works, score study, performance practices, and rehearsal techniques. Class serves as performing group.

MUG 4301 INSTRUMENTAL CONDUCTING
PR: MUG 3101 & CI. A study of those techniques of conducting unique to instrumental music ensembles: Baton technique, score reading, terminology, rehearsal management.

MUL 3016 HISTORY OF POPULAR MUSIC
Popular music in the U.S. from 1820 to the present. Units on the big band era, country and western, jazz, black music, and the rock scene beginning in 1955. May be used for University General Distribution Requirements and may be used to satisfy part of the 9 hours in-College Requirement for Fine Arts majors in Art, Dance, Theatre and as a music elective.

MUS 2111,2112,2113 INTRODUCTION TO MUSIC LITERATURE
PR: MUT 1113 or CI. A survey of representative music examples of the past and present with emphasis on the study of styles and form. Required for music majors.

MUS 3001 ISSUES IN MUSIC
Open only to non-music majors; lectures and live performances by artist faculty of significant works from the literature for the piano; analysis and illustration in performance of the abstract and aesthetic elements in music which vitally concern the artist-performer. This course is also available on WUSF/TV Channel 16 by the Y.O.U. Program. (S/U only.)

MUS 3011,3012 THE ENJOYMENT OF MUSIC
Open only to non-music majors; a study in the art of music and its materials, designed to develop an understanding of basic principles of music and a technique for listening to music.

MAJOR PERFORMING ORGANIZATIONS COURSES (below)
PR: CI. Open to all university students with the necessary proficiency in their performing media; study and performance of music for large combinations of voices, string, woodwind, brass, or percussion instruments; may be repeated for credit.

MAN 3340 CHAMBER SINGERS
MUN 3140 WIND ENSEMBLE
MUN 3210 UNIVERSITY ORCHESTRA
MUN 3310 UNIVERSITY SINGERS
MUN 3380 UNIVERSITY-COMMUNITY CHORUS
MUN 3390 JAZZ-POP CHOIR
MUN 3501 OPERA WORKSHOP

CHAMBER MUSIC ENSEMBLES COURSES (below)
PR: CI. Open to all university students with the necessary proficiency in their performing media; study and performance of music for small combinations of voices, string, woodwind, brass, or percussion instruments, and piano; may be repeated for credit.

MUN 3340 CHAMBER SINGERS
MUN 3411 STRING QUARTET
MUN 3421 FLUTE CHOIR
MUN 3423 CLARINET CHOIR
MUN 3426 WOODWIND QUINTET
MUN 3430 BRASS CHOIR
MUN 3423 HORN QUARTET
MUN 3436 BRASS QUINTET
MUN 3440 PERCUSSION ENSEMBLE
MUN 3441 MARIMBA ENSEMBLE
MUN 3451 PIANO ENSEMBLE
MUN 3470 COLLEGIUM MUSICUM
MUN 3490 NEW MUSIC ENSEMBLE
MUN 3710 JAZZ LABORATORY BAND

MUS 4900 DIRECTED READING
PR: CI and CC. Readings in a topic of special interest to the student. Selection of topic and materials 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 topics only.

MUS 4905 DIRECTED STUDY
PR: CC. Independent studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

MUS 4930 SELECTED TOPICS IN MUSIC
PR: CI and CC. The content of the course will be governed by development of musical styles and of the music representative of those styles.
### MUS 4931 selected studio topics in music (1-6)
- **Pr:** CI. The content of the study will be governed by individual student demand and instructor interest. May be repeated for credit for different topics only.

### MUS 4935 music senior seminar (3)
- **Pr:** CI. To aid majors to understand, appraise and perfect their own art through critical and aesthetic judgments of their colleagues. (S/U only).

### MUT 1001 rudiments of music (3)
- Open to non-music majors; development of skills in hearing and performing music and in basic notation, will not count as degree credit for music majors.

### MUT 1111, 1112, 1113 music theory (3, 3, 3)
- **Pr:** CI. Required of music majors; development of skills in perceiving and writing music through the use of aural and visual analysis of examples from all historical periods of music literature.

### MUT 1241, 1242, 1243 aural theory (2, 2, 2)
- **Pr:** CI. Course designed to begin training in aural recognition and vocal realization of materials used in music composition. Includes rhythmic, melodic and harmonic dictation, and sight-singing. To be taken concurrently with MUT 1111, 1112, 1113.

### MUT 2116, 2117, 2118 music theory (3, 3, 3)
- **Pr:** MUT 1113. Required of music majors; continuation of MUT 1111-1113.

### MUT 2246, 2247, 2248 advanced aural theory (2, 2, 2)
- **Pr:** MUT 1243. Course designed to continue training in aural recognition and vocal realization of materials used in music composition. Includes rhythmic, melodic and harmonic dictation, and sight-singing. To be taken concurrently with MUT 2116, 2117, 2118.

### Improvisation Courses (below)
- **Pr:** MUT 1113 and CI. A studio course of study designed to acquaint the student with basic improvisational techniques; emphasis on individual performance. May be repeated for credit.

### MUT 3631 improvisation: fundamental techniques (1)
### MUT 3642 improvisation: jazz techniques (1)

### MUT 4311, 4312 orchestration (3, 3)
- **Pr:** CI. Intensive study and practice in scoring music for various combinations of instruments, including symphony orchestra, band, and smaller ensembles of string, woodwind, brass, and percussion instruments.

### MUT 4411 sixteenth century practice (3)
- **Pr:** MUT 2118. A study of the music of the 16th century from a theoretical standpoint; development of skills in perceiving and writing music in the style of the period through the use of aural and visual analysis.

### MUT 4421 eighteenth century practice (3)
- **Pr:** MUT 2118. An intensive study of the contrapuntal practice of the 18th century; development of skills in perceiving and writing music in the style of the period through the use of aural and visual analysis.

### MUT 4431 twentieth century practice (3)
- **Pr:** MUT 2118. A study of 20th century theoretical concepts; development of skills in perceiving and writing music in contemporary styles through the use of aural and visual analysis.

### Secondary Applied Music Courses (below)
- **Pr:** CI. One half-hour private lesson or one hour class per week for music students wishing to gain proficiency in an area other than their applied performance major and for a limited number of non-music majors who have had prior musical training. Course is open by audition only.

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MVB 1211</td>
<td>Applied Trumpet</td>
<td>1</td>
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<tr>
<td>MVB 1212</td>
<td>Applied French Horn</td>
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<td>MVP 1211</td>
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<td>MVS 1211</td>
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<td>MVS 1214</td>
<td>Applied Double Bass</td>
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<td>Applied Bassoon</td>
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<tr>
<td>MVY 1215</td>
<td>Applied Saxophone</td>
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### Class Piano Courses (below)
- **Pr:** CI. Class is elementary piano and music fundamentals designed for students with limited keyboard experience. Primary emphasis is placed on sight-reading, accompanying, transposition, harmonization, basic technique, and appropriate literature.

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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<td>MVK 1121</td>
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<td>MVK 2111</td>
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<td>Non-Music Majors, Level III</td>
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<tr>
<td>MVK 2821</td>
<td>Non-Music Majors, Level IV</td>
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</table>

### Applied Music Courses (below)
- **Pr:** CI. Required of all applied music majors; open to a limited number of non-music majors by audition only. Private and class instruction in string, woodwind, brass and percussion instruments, voice and piano. May be repeated for credit.

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<td>MVB 1412</td>
<td>Applied French Horn</td>
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<td>MVP 1411</td>
<td>Applied Percussion</td>
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<td>MVS 1411</td>
<td>Applied Violin</td>
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<td>MVS 1412</td>
<td>Applied Viola</td>
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<td>MVS 1413</td>
<td>Applied Violoncello</td>
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<td>MVS 1414</td>
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<tr>
<td>MVY 1415</td>
<td>Applied Saxophone</td>
<td>3</td>
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</tbody>
</table>

### Applied Music Courses (below)
- **Pr:** Necessary competency at freshman level determined by
MUSIC COURSES

APPLIED MUSIC COURSES

MVB 2421 APPLIED TRUMPET (3)
MVB 2422 APPLIED FRENCH HORN (3)
MVB 2423 APPLIED TRÔMBONE (3)
MVB 2424 APPLIED BARITONE (3)
MVB 2425 APPLIED TUBA (3)
MVK 2421 APPLIED PIANO (3)
MVP 2421 APPLIED PERCUSSION (3)
MVS 2421 APPLIED VIOLIN (3)
MVS 2422 APPLIED VIOLONCELLO (3)
MVS 2423 APPLIED VIOLONCELLO (3)
MVS 2424 APPLIED VIOLONCELLO (3)
MVS 2425 APPLIED VIOLONCELLO (3)
MVW 2423 APPLIED VIOLONCELLO (3)
MVW 2424 APPLIED VIOLONCELLO (3)
MVW 2425 APPLIED VIOLONCELLO (3)

APPLIED MUSIC COURSES (below)

PR: Necessary competency at sophomore level determined by faculty jury examination. Required of all applied music majors. Private and class instruction in string, woodwind, brass, and percussion instruments, voice and piano. May be repeated for credit four quarters only.

MVB 3431 APPLIED TRUMPET (3)
MVB 3432 APPLIED FRENCH HORN (3)
MVB 3433 APPLIED TRÔMBONE (3)
MVB 3434 APPLIED BARITONE (3)
MVB 3435 APPLIED TUBA (3)
MVK 3431 APPLIED PIANO (3)
MVP 3431 APPLIED PERCUSSION (3)
MVS 3431 APPLIED VIOLIN (3)
MVS 3432 APPLIED VIOLONCELLO (3)
MVS 3433 APPLIED VIOLONCELLO (3)
MVS 3434 APPLIED VIOLONCELLO (3)
MVS 3435 APPLIED VIOLONCELLO (3)
MVW 3431 APPLIED VIOLONCELLO (3)
MVW 3432 APPLIED VIOLONCELLO (3)
MVW 3433 APPLIED VIOLONCELLO (3)
MVW 3434 APPLIED VIOLONCELLO (3)
MVW 3435 APPLIED VIOLONCELLO (3)

APPLIED MUSIC COURSES (below)

PR: Necessary competency at junior level determined by faculty jury examination. Required of all applied music majors. Private instruction in string, woodwind, brass, and percussion instruments, voice and piano. May be repeated for credit for a minimum of 9 hours for majors.

MVB 4441 APPLIED TRUMPET (3)
MVB 4442 APPLIED FRENCH HORN (3)
MVB 4443 APPLIED TRÔMBONE (3)
MVB 4444 APPLIED BARITONE (3)
MVB 4445 APPLIED TUBA (3)

MVK 4441 APPLIED PIANO (3)
MVP 4441 APPLIED PERCUSSION (3)
MVS 4441 APPLIED VIOLIN (3)
MVS 4442 APPLIED VIOLA (3)
MVS 4443 APPLIED VIOLONCELLO (3)
MVS 4444 APPLIED VIOLONCELLO (3)
MVS 4445 APPLIED HARP (3)
MVW 4441 APPLIED VOICE (3)
MVW 4442 APPLIED OBOE (3)
MVW 4443 APPLIED CLARINET (3)
MVW 4444 APPLIED BASSOON (3)
MVW 4445 APPLIED SAXOPHONE (3)

MUSIC STUDIO PEDAGOGY COURSES (below)

PR: CI. May be elected by undergraduate music majors; emphasis on the business management of the music studio, the musical responsibilities of the studio teacher, the techniques of private instruction. May be repeated for credit for a maximum of 6 hours for the same section.

MVK 4640 CLASS PIANO (3)
MVK 4641 PIANO (3)
MVS 4640 STRINGS (3)
MVV 4641 VOICE (3)
MVW 4640 WINDS AND PERCUSSION (3)

GRADUATE COURSES

MUC 6251 COMPOSITION (4)
PR: CI. Private instruction in original composition with composition lab meeting 5 times each quarter. Required of composition majors. May be repeated for four quarters.

MUC 6444,6445,6446 ELECTRONIC MUSIC—ANALOG/DIGITAL SYSTEMS RESEARCH (4,4,4)
PR: CI. State-of-the-art compositional and performance applications; new concepts of electronic music synthesis; documentation and critical analysis of new repertory.

MUG 6256,6257,6258 CHORAL LITERATURE AND CONDUCTING (6,6,6)
PR: CI. A study of the literature, compositional techniques and musical philosophies of the major 20th Century composers from Debussy to the present.

MUG 6930 SEMINAR IN CONDUCTING (3)
PR: CI. A survey and stylistic analysis of chamber music repertory

MUL 6375 TWENTIETH CENTURY MUSIC LITERATURE (4)
PR: CI. A study of the literature, compositional techniques and musical philosophies of the major 20th Century composers from Debussy to the present.

MUL 6410,6411,6412 KEYBOARD REPERTOIRE (3,3,3)
PR: CI. A study of style, history and performance practice in keyboard repertory including masterworks of all periods.

MUL 6505 SYMPHONIC LITERATURE (4)
PR: CI. A chronological study of the development of orchestral music; analysis and study of major works from a stylistic and biographical perspective.

MUL 6505 CHAMBER MUSIC LITERATURE (4)
PR: CI. A survey and stylistic analysis of chamber music repertory through 1750 through the present day; emphasis on aural recognition of the music literature.

MUL 6524,6625,6626 SONG LITERATURE (3,3,3)
PR: CI. Solo song literature from the 17th century through the
MUL 6663,6664 OPERA LITERATURE (4,4)
PR: CI. A chronological study of the development of opera from 1600 to the present; emphasis on the technical, stylistic, and performance aspects of opera.

MUL 6687 SOLO VOCAL LITERATURE IN ORATORIO (4)
PR: CI. A survey of literature for the solo voice in oratorio from the 17th century to the present. Includes allied forms such as solo voice in cantatas and orchestra music.

MAJOR ENSEMBLE PERFORMANCE COURSES (below)
PR: CI. Open to all university students with the necessary proficiency in their performing media; study and performance of music for large combinations of voices, string, windwood, brass or percussion instruments; may be repeated for credit.
MUN 6100 UNIVERSITY BAND (1)
MUN 6140 WIND ENSEMBLE (1)
MUN 6210 UNIVERSITY ORCHESTRA (1)
MUN 6310 UNIVERSITY SINGERS (1)
MUN 6380 UNIVERSITY-COMMUNITY CHORUS (1)
MUN 6390 CHORAL UNION (1)
MUN 6501 OPERA WORKSHOP (1)

CHAMBER MUSIC ENSEMBLES COURSES (below)
PR: CI. Open to all university graduate students with the necessary proficiency in their performance media; study and performance of music for small combinations of voices, string, woodwind, brass or percussion instruments, and piano; may be repeated for credit.
MUN 6340 CHAMBER SINGERS (1)
MUN 6411 STRING QUARTET (1)
MUN 6421 FLUTE CHOIR (1)
MUN 6423 CLARINET CHOIR (1)
MUN 6426 WOODWIND QUINTET (1)
MUN 6430 BRASS CHOIR (1)
MUN 6432 HORN QUARTET (1)
MUN 6436 BRASS QUINTET (1)
MUN 6440 PERCUSSION ENSEMBLE (1)
MUN 6441 MARIMBA ENSEMBLE (1)
MUN 6451 PIANO ENSEMBLE (1)
MUN 6470 COLLEGIUM MUSICUM (1)
MUN 6490 NEW MUSIC ENSEMBLE (1)
MUN 6710 JAZZ LABORATORY BAND (1)

MUS 5905 DIRECTED STUDY (1-6)
PR: CC. Independent studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

MUSIC WORKSHOP COURSES (below)
PR: CI. Intensive study in the specialized areas indicated below; open to teachers, University students, and secondary students; credit available to qualified students.
MUS 5924 BAND WORKSHOP (1-3)
MUS 5925 CHAMBER MUSIC WORKSHOP (1-3)
MUS 5926 CHOIR WORKSHOP (1-3)
MUS 5927 ORCHESTRA WORKSHOP (1-3)
MUS 5929 STRING WORKSHOP (1-3)

MUS 6793 TECHNIQUES OF RESEARCH IN MUSIC (3)
PR: CC. A study of the methods of research and professional bibliography and with an individual, formal project as a terminal requirement.

MUS 6906 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

MUS 6910 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

MUS 6971 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)

MUS 6976 GRADUATE RECITAL (3)

MUS 6994 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.)

MUS 6995 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.)

MUT 5051 GRADUATE REVIEW OF MUSIC THEORY (3)
A graduate level review of basic theoretical concepts with emphasis on the common practice period. The course serves to satisfy deficiencies in music theory and as such does not count toward the degree.

MUT 6535,6547,6558 CRITICAL ANALYSIS OF MUSIC REPERTORY (4,4,4)
PR: CI. Required of music theory majors; study of the development of musical styles in western civilization from Antiquity to the present, includes analysis and performance of representative works.

MUT 6751,6752 TEACHING OF MUSIC THEORY (4,4)
PR: CI. Comparative study of teaching techniques, procedures, and materials used in teaching the individual student in performance.

APPLIED MUSIC COURSES (below)
PR: Necessary competency determined by faculty jury audition. Required of all applied music majors. Private and class instruction.

MVB 6251 APPLIED TRUMPET, SECONDARY (2)
MVB 6252 APPLIED FRENCH HORN, SECONDARY (2)
MVB 6253 APPLIED TROMBONE, SECONDARY (2)
MVB 6254 APPLIED BARITONE, SECONDARY (2)
MVB 6255 APPLIED TUBA, SECONDARY (2)
MVB 6451 APPLIED TRUMPET (4)
MVB 6452 APPLIED FRENCH HORN (4)
MVB 6453 APPLIED TROMBONE (4)
MVB 6454 APPLIED BARITONE (4)
MVB 6455 APPLIED TUBA (4)
MVK 6251 APPLIED PIANO, SECONDARY (2)
MVK 6451 APPLIED PIANO (4)

MVP 6251 APPLIED PERCUSSION, SECONDARY (2)
MVP 6451 APPLIED PERCUSSION (4)
MVS 6251 APPLIED VIOLIN, SECONDARY (2)
MVS 6252 APPLIED VIOLA, SECONDARY (2)
MVS 6253 APPLIED VIOLONCELLO, SECONDARY (2)
MVS 6254 APPLIED DOUBLE BASS, SECONDARY (2)
MVS 6255 APPLIED HARP, SECONDARY (2)
MVS 6451 APPLIED VIOLIN (4)
NURSING

NUR 493C  NURSING PRACTICUM III  (5-7)  
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Individually planned experience in a clinical and/or functional area of professional nursing which is related to student's professional goals. Associated seminars and/or institutes. (S/U only.)

NUR 4943L  NURSING INTERVENTION IV  (7)  
PR: All preceding courses in prescribed curriculum plan or permission of Dean. This final course, in a Nursing Intervention sequence of four, will provide opportunity for concentrated clinical nursing experience under faculty guidance. The nature and goals of the experience will be determined collaboratively by students, faculty, and personnel from the clinical settings where students elect to have this experience. (S/U only.)

NUS 3210C  HUMAN ANATOMY  (4)  
PR: Admission to nursing major or permission of Dean. A course in basic human anatomy including cellular and organ system relationships as a foundation for normal and abnormal function. Lec.-lab.

NUS 3211C  HUMAN PHYSIOLOGY  (5)  
PR: Admission to nursing major or permission of Dean. Basic functional features of the normal human body considered on a systematic basis. General content includes the cell and functional organization of the body, the function of the body systems, and limited attention to deviations from normal and application to nursing practice. Lec.-lab.

NUS 3220  BIOPSYCHOSOCIAL PATHOLOGY  (4)  
PR: Admission to nursing major or permission of Dean. Interferences in biopsychosocial organization and function and the ways in which disruptions manifest themselves in signs, symptoms, physical, and laboratory findings.

NUU 321L  NURSING PROCESS LABORATORY  (5)  
PR: All preceding courses in prescribed curriculum plan or permission of Dean. A student self-paced learning laboratory course directed toward development of competence in selected psychomotor and biopsychosocial assessment skills. Also, selected experiences in ambulatory care settings to facilitate application of assessment skills. (S/U only.)

NUU 3210C  NURSING PROCESS I  (6)  
PR: Admission to nursing major or permission of Dean. An overview of the development of nursing and trends which will influence future practice. Attention will be directed to emerging roles and responsibilities of professional nurses in providing health services to individuals and families and relationships of
nurses to clients and other health care personnel. Lecture-discussion sessions and extra-class activities including clinical nursing practice experience.

NUU 3211 NURSING CORE I (5)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Nursing core courses are designed to enable progressive acquisition of concepts, knowledge, and skills essential to clinical nursing practice by building on previous general education, supporting and nursing courses. This sequence will be developed within the framework of the concepts of health to illness within the family. Content will include the family as a system, crises within the system, and developmental tasks throughout the life span.

The student will continue development of the nursing process with particular emphasis on the intervention and planning phases based on theory in pathophysiology, pharmcacoogy, and epidemiology.

NUU 3211L NURSING INTERVENTION I (6)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. This course involves the application of theoretical material in a clinical setting that will include care of hospitalized and non-hospitalized individuals of all ages who represent various levels of wellness and illness. Opportunities are provided for continuing development of the skills in the nursing process.

NUU 3214 SEMINAR IN NURSING II (2)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Description same as NUU 3321, Seminar in Nursing I. (S/U only.)

NUU 3229L NURSING PRACTICUM I (5)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Clinical practice providing experience in application of the nursing process with selected multi-problem clients in selected distributive and/or episodic care settings. (S/U only.)

NUU 3240 CONCEPTUAL FRAMEWORK FOR PROFESSIONAL NURSING PRACTICE (4)
PR: Admission to nursing major or permission of Dean. Exploration of the major concepts underlying professional nursing practice, the trends and issues relating to the role and responsibility of nursing in the health care system, and introduction to the nursing process.

NUU 3241C PLANNING, IMPLEMENTING, AND EVALUATING NURSING INTERVENTION (4)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Focuses on using assessment skills as basis for planning, implementing, and evaluating nursing intervention for multi-problem clients in both distributive and episodic settings.

NUU 3320 NURSING PROCESS II (3)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Restricted to nursing majors. An introduction to the nursing process with emphasis on the initial phase of assessment of the health status of individuals seeking care in ambulatory settings. Opportunities are provided for continuing development of group process and interviewing skills as tools in the assessment process in nursing. Learning experiences include the application of biopsychosocial concepts and the utilization of selected psychomotor skills in nursing intervention with non-hospitalized individuals.

NUU 3321 SEMINAR IN NURSING I (2)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. This seminar provides opportunities for students to correlate various learning experiences, to exchange experiences, and raise questions for group and faculty exploration. It serves as a vehicle for introducing nursing audit and peer review of nursing practice and as a means of dealing with the human problems characteristic of nursing practice. Issues, trends, legal aspects, management, and leadership principles will be considered within the framework of internal and external forces which structure nursing and determine its role in society. (S/U only.)

NUU 3340C CLIENT ASSESSMENT (5)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Expands knowledge and skills essential for biopsychosocial assessment of needs of clients and families in primary, secondary, or tertiary care settings.

NUU 4220 NURSING CORE II (5)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Continuation of development of the nursing process with particular emphasis on the evaluation phase. Concepts of leadership and the role of the professional nurse as a change agent are emphasized.

NUU 4220L NURSING INTERVENTION II (6)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Application of theory in a clinical setting with clients of all ages who represent various levels of wellness and illness.

NUU 4221 NURSING CORE III (5)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Students continue development of the nursing process with emphasis on synthesis of the four phases based on theory in pathophysiology, pharmcacoogy, and epidemiology. Leadership concepts in the total nursing process introduced.

NUU 4221L NURSING INTERVENTION III (6)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Application of theoretical knowledge in a clinical setting that will include care of hospitalized and non-hospitalized individuals of all ages who represent various levels of wellness and illness. Provision made for the development of skills in the synthesis of all phases of nursing process as well as utilizing leadership concepts.

NUU 4222 SEMINAR IN NURSING III (2)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Description same as NUU 3321, Seminar in Nursing I. (S/U only.)

NUU 4223 SEMINAR IN NURSING IV (2)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Description same as NUU 3321, Seminar in Nursing I. (S/U only.)

NUU 4422 NURSING PROCESS SYNTHESIS (5)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Application of theories developed in NUU 3241C and NUU 3340C with emphasis on the leadership, teaching, and management responsibilities in professional nursing practice.

NUU 4422L NURSING PRACTICUM II (3-5)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Application of theories developed in NUU 4422 to nursing practice in selected settings. Contract learning experiences of individual students. (S/U only.)

NUU 4432 NURSING CORE IV (3)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Students continue development of the nursing process with emphasis on management of nursing assistance to clients.

NUU 4630 NURSING INQUIRY I (3)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. This course will emphasize the relationship between research and the improvement of nursing practice and health care: attention will be directed toward the need for research in nursing, areas currently being investigated, ethical issues, the research process, and the implementation of the results of nursing research.
OFF-CAMPUS TERM

Director: D. K. Lupton.

UNDERGRADUATE COURSES
The following courses are provided for students admitted in the Off-Campus Term Program to work on one of the types of projects indicated.
IDS 4905 OFF CAMPUS TERM
INDEPENDENT STUDY
(S-U only.)
IDS 4910 COMMUNITY INTERACTION
A field course for students in the OCT Program utilizing the community as a learning laboratory to develop sensitivity to the problems of our society.
IDS 4942 OFFICE CAMPUS TERM SOCIAL ACTION PROJECT
(1-2)
(S/U only.)
IDS 4943 OFF CAMPUS TERM SPECIAL PROJECT
(1 or 2)
(S/U only.)
IDS 4955 OFF CAMPUS TERM INTERNATIONAL PROGRAM
(1-2)
(S/U only.)

PHILOSOPHY

Chairperson: W. H. Truitt; Professors: J. A. Gould, W. H. Truitt; Associate Professors: J. A. Bell, B. Silver; Assistant Professors: R. N. Taylor, R. C. Weatherford; Professor Emeritus: C. H. Chen; Visiting Assistant Professor: W. L. Pinto.

UNDERGRADUATE COURSES
PHH 3060 ANCIENT AND MEDIEVAL PHILOSOPHY
A survey of philosophy from Thales through the medieal writers.
PHH 3063 RENAISSANCE AND MODERN PHILOSOPHY
A survey of philosophy from the Renaissance through Kant.
PHH 3070 RECENT PHILOSOPHY
A survey of philosophy from Kant through nineteenth century philosophy.
PHH 4600 CONTEMPORARY PHILOSOPHY
PR: Eight hours of philosophy or CI. Selected schools of twentieth century thought such as idealism, positivism, pragmatism, realism, and existentialism.
PHH 4700 AMERICAN PHILOSOPHY
Major traditions in American thought—Puritanism, the Enlightenment, Transcendentalism, Idealism, Pragmatism, and Analytic Philosophy—in relation to American culture.
PHH 4821 CLASSICAL CHINESE PHILOSOPHY
PR: PHI 3500 or PHI 3300 or PHI 3500 or CI. Examination of the major classical Chinese philosophers from the sixth century through the third century B.C.
PHH 4824 CONTEMPORARY CHINESE PHILOSOPHY
PR: PHI 3050 or PHI 3300 or PHI 3500 or CI. A critical examination of the ideas of Lin Piao, Hu-Shih, Mao Tse-Tung, Sun Yat-Sen, Chiang Kai-Shek, Lin Yu-Tang, and other selected materials.
PHI 1000 GREAT PHILOSOPHERS OF THE WESTERN WORLD
(2)
Lectures and discussions of the great philosophers since Plato, focusing on particular problems.
PHI 1010 PHILOSOPHIC CONTROVERSIES
(2)
A discussion of central controversies in philosophy such as the nature of love, violence, freedom, truth, morality, etc. This course is also available on WUSF-TV Channel 16 by the Y.O. U. Program.
PHI 1103 PRACTICAL LOGIC
(2)
Elementary theory and application of logical fallacies, deductive and inductive logic. Not for majors.
PHI 3050 BASIC PHILOSOPHY II: VALUE AND SOCIETY
An introduction to the major philosophical problems in ethics, aesthetics, and social political philosophy.

PHI 3100 LOGIC
(5)
Language analysis and classical and modern formal logic, including the logic of classes and propositions, and discussion of philosophical issues.
PHI 3300 BASIC PHILOSOPHY III: KNOWLEDGE AND SCIENCE
(4)
An introduction to the major philosophical problems in methodology, epistemology, and the philosophy of science.
PHI 3304 SCIENTIFIC METHOD
(4)
Probability, inductive inference, the hypothetico-deductive method, experimentation, and selected topics in the philosophy of science.
PHI 3500 BASIC PHILOSOPHY I: GOD AND REALITY
(4)
An introduction to the major philosophical problems in religion, metaphysics, and the philosophy of mind.
PHI 3560 ETHICS
(4)
An examination of the writing of the philosophers: Plato, Aristotle, Kant, Sartre, etc., about moral problems and principles.
PHI 3700 PHILOSOPHY OF RELIGION
(4)
Analysis of religious experience and activity and examination of principal religious ideas in light of modern philosophy.
PHI 3905 DIRECTED STUDY
(1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.
PHI 3930 SELECTED TOPICS
(1-5)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.
PHI 4320 PHILOSOPHY OF MIND
(4)
PR: Eight hours of philosophy or CI. A study of historical and current issues in philosophy of mind, including the nature and status of mind, mind/body dualism, the relationship of mind and body, the problem of other minds, the physical basis for intelligence, etc.
PHI 4360 THEORY OF KNOWLEDGE
(4)
PR: Eight hours of philosophy, PHI 3300, or CI. An examination of human knowledge, its scope and limits, and an evaluation of evidence, criteria of truth, the nature of belief, conditions for meaningfulness, theories of perception, and a study of memory and sense perception in the four major fields of nature, history, personal experience, and the a priori.
PHI 4800 AESTHETICS
(4)
A study of traditional and contemporary aesthetic theories with emphasis on creative process, the nature of the art work, the aesthetic response, expressiveness, form and content as well as art and morality.
PHI 4905 DIRECTED STUDY
(1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.
PHI 4930 SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the senior students. Approval slip from instructor required.

PHM 3100 SOCIAL PHILOSOPHY (4)
An analysis of rival theories of social order and their philosophical foundations.

PHM 3222 PHILOSOPHIES OF THE CITY (3)
A study of the current issues in the philosophy of the city including the nature of community, alienation and the city, art and the city, political philosophy of the city, the city and business, nature versus the city, the city and beauty, etc. For majors and non-majors.

PHM 3400 INTRODUCTION TO PHILOSOPHY OF LAW (4)
A study of the fundamental concepts of law from a philosophic standpoint including crime, justice, punishment, free speech, insanity, etc.

PHM 4322 ANCIENT AND MEDIEVAL POLITICAL PHILOSOPHY (3)
A survey of political philosophy from 6 B.C. until 1600 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHM 4331 MODERN POLITICAL PHILOSOPHY (3)
A survey of political philosophy from 1600 A.D. until 1900 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHM 4340 CONTEMPORARY POLITICAL PHILOSOPHY (3)
A survey of political philosophy in the twentieth century, including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHP 3786 EXISTENTIALISM (4)
A study of the religious and atheistic existentialists and the bearing of their views on religion, ethics, metaphysics, and theory of knowledge.

PHP 4000 PLATO (4)
PR: Eight hours of philosophy or CI. The examination of Plato will include the dialogues Protagoras, Gorgias, Meno, Republic, etc.

PHP 4010 ARISTOTLE (4)
PR: Eight hours of philosophy or CI. Study of Aristotle's philosophy.

PHP 4410 KANT (4)
PR: Eight hours of philosophy or CI. Lecture and discussions of Kant's philosophy, especially The Critique of Pure Reason.

PHP 4784 ANALYTICAL PHILOSOPHY (4)
PR: Eight hours of philosophy, PHI 3100. A study of the method devoted to clarifying philosophical problems through analysis of the language in which these problems are stated.

PHP 4788 PHILOSOPHY OF MARXISM (4)

GRADUATE COURSES

PHH 5005 SEMINAR IN THE HISTORY OF PHILOSOPHY (3)
PR: CI. A study of one or more of the central figures or movements in the history of philosophy. This course may be taken more than once for credit with CI and departmental approval.

PHI 5135 SYMBOLIC LOGIC (4)
PR: PHI 3100 or CI. Mathematical treatment of formal logic, including methods of proof, quantification, the logic of relations and an introduction to properties of deductive systems.

PHI 5225 PHILOSOPHY OF LANGUAGE (4)
PR: Eight hours of philosophy, major in linguistics, or CI. An examination of semantical, syntactical, and functional theories of language with special attention given to the problems of meaning, linguistic reference, syntactical form, and the relations between scientific languages and ordinary linguistic usage.

PHI 5325 SEMINAR IN EPISTEMOLOGY I (3)
PR: Major in philosophy or psychology and CI. This course may be taken more than once for credit with CI and departmental approval.

PHI 5365 SEMINAR IN EPISTEMOLOGY II (3)
PR: Major in philosophy and CI. This course may be taken more than once for credit with CI and departmental approval.

PHI 5425 PHILOSOPHY OF THE SOCIAL SCIENCES (4)
PR: Eight hours of philosophy or CI. Philosophic issues arising in the social sciences: value assumptions, laws and theories, models, etc.

PHI 5455 PHILOSOPHY OF NATURAL SCIENCE (4)
PR: Eight hours of philosophy or CI. The function of the course is to investigate (1) problems in the methodology of natural science such as the constructing and testing of hypotheses, confirmation and falsification of theories, explanations and the role of laws and models, (2) philosophical implications of the theories of natural science, especially in the areas of space, time, and matter.

PHI 5505 SEMINAR IN METAPHYSICS II (3)
PR: Major in philosophy or CI. A consideration of the theory of reality. This course may be taken more than once for credit with CI and departmental approval.

PHI 5585 SEMINAR IN METAPHYSICS I (3)
PR: Major in philosophy or CI. Cosmology. This course may be taken more than once for credit with CI and departmental approval.

PHI 5606 SEMINAR IN CONTEMPORARY ETHICS (3)
PR: CI. A study of the central figures and doctrines in Contemporary Ethics. This course may be taken more than once for credit with CI and departmental approval.

PHI 5705 CONTEMPORARY CONTROVERSIES IN PHILOSOPHY OF RELIGION (4)
PR: PHI 3700 or CI. A survey of contemporary philosophical problems in religion such as de-mythologizing, falsification, and the meaning and justification of key concepts, e.g. God immortality, faith, etc.

PHI 5913 RESEARCH (1-5)
PR: CI. Individual research supervised by a faculty member. Approval slip from instructor required.

PHI 5934 SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 6055 STUDIES IN MAJOR PHILOSOPHICAL SYSTEMS (4)
PR: Graduate standing or CI. A detailed study of a metaphysical movement. This course may be taken more than once for credit with CI and departmental approval.

PHI 6105 STUDIES IN LOGIC (4)
PR: Graduate standing or CI. Foundations and basic problems of logic. This course may be taken more than once for credit with CI and departmental approval.

PHI 6366 STUDIES IN THE THEORY OF MEANING (4)
PR: Graduate standing or CI. Theory of meaning in relation to theory of truth, reference, modality, and analyticity; with bearings on problems in epistemology, metaphysics, and value. This course may be taken more than once for credit with CI and departmental approval.

PHI 6405 STUDIES IN THE PHILOSOPHY OF SCIENCE (4)
PR: Graduate standing or CI. A study of the nature and status of
physical theories, some basic problems associated with scientific methodology, and the philosophical implications of modern science. This course may be taken more than once for credit with CI and departmental approval.

PHI 6686 STUDIES IN THE THEORY OF VALUE (4)
PR: Graduate standing or CI. An analysis and critique of traditional and contemporary theories of value, emphasizing those systems which deal with aesthetic, moral, social, economic, and political values. This course may be taken more than once for credit with CI and departmental approval.

PHI 6706 STUDIES IN PHILOSOPHY OF RELIGION (4)
PR: Graduate standing or CI. An analysis of fundamental religious concepts in terms of contemporary philosophy. This course may be taken more than once for credit with CI and departmental approval.

PHI 6808 STUDIES IN AESTHETICS (4)
PR: Graduate standing or CI. An analysis of fundamental special problems of aesthetics; value, perception, communication, technique, context. This course may be taken more than once for credit with CI and departmental approval.

PHI 6908 DIRECTED RESEARCH (var.)
PR: Gr. Master's level. Repeatable. (S/U only.)

PHI 6934 SELECTED TOPICS (1-5)
PR: Graduate standing and CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 6938 GRADUATE SEMINAR (4)
PR: Graduate standing. A seminar in the history of philosophy. The instructor will determine the subject matter.

PHI 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.)

PHI 6971 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)

**PHYSICAL EDUCATION-ELECTIVE**


**UNDERGRADUATE COURSES**

DAA 1374 FOLK & SQUARE DANCE (2)
An opportunity for the development of fundamental skills and knowledges necessary for enjoyment of Folk and Square Dancing. (S/U only.)

PEL 1121L GOLF I (2)
Introductory experience in the sport of golf. Fundamental skills, information, strategy, and participation. (S/U only.)

PEL 1141L ARCHERY (2)
Development and refinement of the essential skills and information necessary for enjoying the sport of Archery. (S/U only.)

PEL 1341L TENNIS I (2)
Introductory experiences in the sport of tennis. Basic skills, playing strategies, lecture, demonstration, and participation. (S/U only.)

PEL 1346L BADMINTON (2)
Progressive experiences in badminton, fundamental skills, strategy, information, and participation. (S/U only.)

PEL 2122L GOLF II (2)
Continuation of PEL 1121L. Emphasis on course play and refinement of strokes. (S/U only.)

PEL 2511L SOCCER (2)
A course designed to present essential knowledge of the game of soccer. Instruction and practice of basic skills, rules, team play, and conditioning. (S/U only.)

PEL 2621L BASKETBALL (2)
Review and refinement of fundamental skills, presentation and practice of the various offensive and defensive strategies. (S/U only.)

PEM 1201L GYMNASTICS I (2)
Introductory experiences in the various gymnastics events. Opportunities to specialize in areas of personal interests. (S/U only.)

**PHM 5505 PHILOSOPHY OF HISTORY** (4)
PR: Eight hours of philosophy, major in history, or CI. A systematic study of historical theories and of the methods of historical explanation. An examination of classical theories from Vico through Herder, Hegel, Marx down to Spengler and Toynbee, etc.

**PHM 6105 STUDIES IN SOCIAL PHILOSOPHY** (4)
PR: Graduate standing or CI. A detailed study of the philosophical theories of society, class societies (Capitalism), advanced technocracy (all types). This course may be taken more than once for credit with CI and departmental approval.

**PHM 6305 STUDIES IN POLITICAL PHILOSOPHY** (4)
PR: Graduate standing or CI. An examination of the main political philosophies. This course may be taken more than once for credit with CI and departmental approval.

**PHM 6406 STUDIES IN THE PHILOSOPHY OF LAW** (4)
PR: Graduate standing or CI. A study of the metaphysical, ethical, and epistemological bases of law. This course may be taken more than once for credit with CI and departmental approval.

**PHM 6506 STUDIES IN PHILOSOPHY OF HISTORY** (4)
PR: Graduate standing or CI. The analysis of language and logic of historical explanation, historical idealism, historical materialism, positivism, and historical sociology. This course may be taken more than once for credit with CI and departmental approval.

**PHP 5787 PHENOMENOLOGY AND EXISTENTIALISM** (4)
PR: Eight hours of philosophy or CI. A study of the methodology, epistemology, and metaphysics of phenomenology and existentialism, with particular reference to the works of Husserl, Heidegger, Merleau-Ponty, and Sartre.
PHYSICS 253

**UNDERGRADUATE COURSES**

**PHS 3101** MATHEMATICAL ANALYSIS OF PROBLEMS IN MECHANICS AND ELECTRICITY (3)

**PHS 4404** SOLID STATE PHYSICS (4)
PR: PHY 3123 or PHY 4124; MAP 4302. Crystal structure, x-ray and electron diffraction, mechanical and thermal properties of solids, electrical and magnetic properties of metals, band theory of metals, insulators, and semiconductors. First quarter of sequence PHS 4404, PHS 5405. Qtr. II.

**PHS 4802** ACOUSTICS FOR COMMUNICOCYOLOGY (4)
Non-mathematical study of general wave motion and associated phenomena. Acoustic resonance and response of the ear. Introduction to harmonic analysis of complex wave-forms with application to testing with pure tones and various types of waves. Acoustic instrumentation. (No credit for science majors.) Qtr. I, II.
course, which tells it like it is, seeks to get students involved, teach them how to conserve energy for profit, and show them how they can personally use solar energy as a complementary energy source for both residential and commercial purposes. Field trips, movies, and current energy-related news articles play important roles in this course. (For non-majors.) Qtr. I, II, III, IV.

PHY 2050, 2050L GENERAL PHYSICS AND LABORATORY
(4:1)
First quarter of a three-quarter sequence of general physics (mechanics, heat, electricity, wave motion, optics, atomic and nuclear physics) and laboratory for science students. Must be taken concurrently and, if dropped, then dropped simultaneously. Qtr. I, II, III, IV.

PHY 2051, 2051L GENERAL PHYSICS AND LABORATORY
(4:1)
PR: PHY 2050, PHY 2050L. Second quarter of general physics and lab for science students. Must be taken concurrently and, if dropped, then dropped simultaneously. Qtr. I, II, III, IV.

PHY 2052, 2052L GENERAL PHYSICS AND LABORATORY
(4:1)
PR: PHY 2050, PHY 2050L. Third quarter of general physics and lab for science students. Must be taken concurrently and, if dropped, then dropped simultaneously. Qtr. I, II, III, IV.

PHY 3020 CONTEMPORARY PHYSICS
(PR: Junior standing. A qualitative, non-mathematical investigation of physics, emphasizing its influence on life today. (No credit for physics or mathematics majors.) Qtr. I, II, III.

PHY 3040, 3040L GENERAL PHYSICS AND LABORATORY
(3:1)
PR: MAC 3281 or MAC 3411. First quarter of a three-quarter sequence of general physics (mechanics, wave motion, sound, thermodynamics, geometrical and physical optics, electricity, and magnetism) and laboratory for physics majors and engineering students. Must be taken concurrently and, if dropped, then dropped simultaneously. Qtr. I, II, III, IV.

PHY 3041, 3041L GENERAL PHYSICS AND LABORATORY
(3:1)
PR: MAC 3282 or MAC 3412, PHY 3040, PHY 3040L. Second quarter of general physics and laboratory for physics majors and engineering students. Must be taken concurrently and, if dropped, then dropped simultaneously. Qtr. I, II, III, IV.

PHY 3042, 3042L GENERAL PHYSICS AND LABORATORY
(3:1)
PR: MAC 3282 or MAC 3412, PHY 3040, PHY 3040L. Third quarter of general physics for physics majors and engineering students. Must be taken concurrently and, if dropped, then dropped simultaneously. Qtr. I, II, III, IV.

PHY 3123 MODERN PHYSICS I

PHY 3223 MECHANICS I

PHY 3323C ELECTRICITY AND MAGNETISM I
(PR: MAC 3284 or MAC 3414. Electromagnetic circuits; resistance, capacitance, inductance, direct-and alternating-current circuits, thermoductivity, and instrumentation. Laboratory. First quarter of sequence PHY 3323C, PHY 4324, PHY 4325. Qtr. II.

PHY 3424 OPTICS
(PR: PHS 3101 or PHY 3042; CR: MAC 3284 or MAC 3414. Reflection, refraction, dispersion, interference, diffraction, polarization, and laboratory. Qtr. I.

PHY 3822L INTERMEDIATE LABORATORY
(2)
CR: PHY 2052C or PHY 3042 or equivalent. Experiments in modern physics, including the area of atomic, nuclear, solid state and wave phenomena. Qtr. I, III.

PHY 4124 MODERN PHYSICS II
(PR: PHY 3123 or CR: MAP 4302. Special theory of relativity, statistical distribution functions, angular momentum, system of identical particles, and properties of matter. Qtr. I.

PHY 4224 MECHANICS II
(PR: MAP 4302 or PHY 3223. Continuation of PHY 3223. Motion of a group of particles, coupled oscillators, normal modes, dynamics of rigid bodies. Lagrange's and Hamilton's equations, principle of least action. Qtr. II.

PHY 4225 MECHANICS III
(PR: PHY 4224. Continuation of PHY 4224. Elastic media, the wave equation, transverse and longitudinal wave motion, the diffusion equation, boundary value problems, and Fourier series. Fourier integral, fluid dynamics. Qtr. III.

PHY 4324 ELECTRICITY AND MAGNETISM II
(PR: PHY 3223, PHY 3323C or CR: MAP 4302. Electrostatic fields, magnetic fields of steady currents, dielectrics and magnetic materials, Maxwell's equations. Second quarter of sequence PHY 3323C, PHY 4324, PHY 4325. Qtr. III.

PHY 4325 ELECTRICITY AND MAGNETISM III
(PR: PHY 4324. Method of images, Laplace's equation, radiation, transmission, reflection and refraction of electromagnetic waves, guided waves. Third quarter of sequence PHY 3323C, PHY 4324, PHY 4325. Qtr. I.

PHY 4526 STATISTICAL PHYSICS
(PR: PHY 4124 or CR: PHY 4224. Statistical approach to thermodynamics and kinetic theory and introduction to statistical mechanics. Qtr. I.

PHY 4604 QUANTUM MECHANICS I
(PR: PHY 4124 or CR: PHY 4224. Wave-particle duality, uncertainty principle, Schrödinger's equation, postulates, angular momentum, and central forces. First quarter of sequence PHY 4604, PHY 5624.

PHY 4744C ELECTRONICS FOR RESEARCH
(PR: General physics or CR: Direct and alternating current circuits, transistors, rectification, amplification; feedback, pulse circuits, and integrated circuits, laboratory. (No credit for physics or mathematics majors.) Qtr. I, III.

PHY 4823L ADVANCED LABORATORY
(PR: PHY 3822L. Experimental work primarily related to nuclear physics. Emphasis on modern physical experimental techniques employing some of the new types of equipment. Qtr. I, III.

PHY 4905 INDEPENDENT STUDY
(PR: CI. Specialized, independent study determined by the student's need and interest. The written contract required by the College of Natural Sciences specifies the regulations governing independent study. May be repeated. (S/U only.) Qtrs. I, II, III, IV.

PHY 4910 UNDERGRADUATE RESEARCH
(PR: Senior or advanced junior standing and CC. Individual experimental work under supervision of instructor. (S/U only.) Qtrs. I, II, III, IV.

PHY 4930 PHYSICS SEMINAR
(PR: Senior or advanced junior standing and CC. Each topic is a course in directed study and under the supervision of a faculty member.

PHY 4936 SELECTED TOPICS IN PHYSICS
(PR: Senior or advanced junior standing and CC. Each topic is a course in directed study and under the supervision of a faculty member.
GRADUATE COURSES

PHS 5113 METHODS OF THEORETICAL PHYSICS I (3)
PR: MAP 4302 or CI. Applications of mathematical techniques to classical and modern physics. Vector spaces including Hilbert space and Dirac notation, elements of vector and tensor analysis, matrices, group representations, eigenvalue problems, and variational calculus. Qtr. I.

PHS 5114 METHODS OF THEORETICAL PHYSICS II (3)
PR: MAP 4302 or CI. Applications of mathematical techniques to classical and modern physics. Elements of complex analysis including conformal mapping and calculus of residues, Fourier analysis, and transform calculus. Qtr. II.

PHS 5115 METHODS OF THEORETICAL PHYSICS III (3)
PR: MAP 4302 or CI. Applications of mathematical techniques to classical and modern physics. Orthogonal and special functions, integral equations, Green's functions, methods of data analysis, and approximation techniques. Qtr. III.

PHS 5304 NUCLEAR PHYSICS (4)
PR: PHY 4604 or CI. Nuclear forces, nuclear models, nuclear structure, decay, nuclear reactions, and high energy physics. Qtr. I.

PHS 5405 SOLID STATE PHYSICS II (3)
PR: PHS 4404. Optical, electrical, and magnetic properties of insulators, superconductivity, imperfections in solids. Second quarter of sequence PHS 4404, PHS 5405. Qtr. III.

PHS 5505 PLASMA PHYSICS I (4)
PR: PHY 4325 or CI. Introduction to Boltzmann, magnetohydrodynamic and orbit approaches to plasmas. Longitudinal and electromagnetic waves in plasmas. Collisions and radiation. Instabilities. Qtr. IV.

PHS 6136 PHYSICAL APPLICATIONS OF GROUP THEORY (4)
PR: PHS 5114 or CI. Introduction to the theory of Lie Groups and Lie Algebras; applications to atomic and molecular physics, solid state physics, nuclear physics, classical physics, and elementary particle physics. (Offered alternate years.)

PHS 6204 ATOMIC AND MOLECULAR SPECTRA (4)
PR: PHY 4604 or CI. Quantitative study of atomic and molecular structure and spectra. Qtr. IV.

PHS 6426 SOLID STATE PHYSICS III (3)
PR: PHS 5405 or CI. Advanced course on Solid State Physics covering material of current interest.

PHS 6525 PLASMA PHYSICS II (4)
PR: PHS 5505 or CI. An analytical study of the various types of wave phenomena in plasmas describable by the continuum equations, the Boltzmann-Vlasov equation or the Boltzmann equation. Qtr. I.

PHS 6607 THEORY OF RELATIVITY (4)
PR: PHS 5113 or CI. The special and general theory of relativity, including the gravitational field equations, applications of the special theory, experimental tests of the general theory and various topics of current research interest. (Offered alternate years.)

PHS 5624 QUANTUM MECHANICS II (3)
PR: PHY 4604 or CI. Matrix mechanics, approximation methods, transformations, scattering and identical particles. Qtr. III.

PHS 5722C ELECTRONICS (4)
PR: PHY 3822L and PHY 4324. Vacuum and gas-discharge tubes, semiconductors, transistors, electronic circuit analysis, and laboratory. Qtr. II.

PHYSICS 5937 SELECTED TOPICS IN PHYSICS (1-6)
PR: Senior or advanced standing and CC. Each topic is a course in directed study under the supervision of a faculty member.

PHS 6246 CLASSICAL MECHANICS I (3)
PR: PHS 5113 or CI. Dynamics of particles and systems of particles, Lagrange's equation, central forces, rigid body dynamics. First quarter of sequence PHY 6246, PHY 6247. Qtr. II.

PHS 6247 CLASSICAL MECHANICS II (3)
PR: PHY 6246 or CI. Hamilton's equations, canonical transformations, Poisson brackets, small oscillations, Hamilton-Jacobi theory, continuous systems. Qtr. III.

PHYSICS 6346 ELECTROMAGNETIC THEORY I (4)
PR: PHY 4325 or CI. Electrostatics, magnetostatics, potential and boundary value problems. Maxwell's equations. First quarter of sequence PHY 6346, PHY 6347. Qtr. I.

PHYSICS 6347 ELECTROMAGNETIC THEORY II (4)
PR: PHY 6346 or CI. Electromagnetic waves, wave guides and resonant cavities, diffraction, relativistic-particle kinematics and dynamics, plasmas and magnetohydrodynamics. Qtr. II.

PHYSICS 6536 STATISTICAL MECHANICS (4)
PR: PHY 4526 or CI. Kinetic theory, configuration and phase space. Boltzmann theorem, Liouville theorem, ensemble theory, quantum statistics. Qtr. III.

PHYSIC 6645 QUANTUM MECHANICS III (3)
PR: PHY 5624 or CI. Dirac equation, quantized fields, collision theory symmetry, and invariance. Qtr. I.

PHYS 6846L EXPERIMENTAL PHYSICS (2)
PR: Graduate standing. Laboratory techniques frequently required in experimental research. Includes manipulation of glass, production and measurement of vacua, production and measurement of thin films, and use of various machine tools. Qtr. I.

PHY 6909 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

PHY 6911 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

PHY 6935 GRADUATE SEMINAR (1)
All physics graduate students are expected to enroll in this course Qtr. I each year. (S/U only.) Qtr. I, II, III, IV.

PHY 6938 SELECTED TOPICS IN PHYSICS (1-15)
PR: CC. Each topic is a course in directed study under the supervision of a faculty member.

PHY 6940 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 five credits per student. (S/U only.)

PHY 6971 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)

POLITICAL SCIENCE


UNDERGRADUATE COURSES

CPO 3002 INTRODUCTION TO COMPARATIVE GOVERNMENT AND POLITICS (4)
Analysis of political systems using the concepts and methods of comparative politics.
CPO 4034 POLITICS OF THE DEVELOPING AREAS (4)
An analysis of the ideologies, governmental structures, and political processes of selected nations of the non-Western world.

CPO 4930 COMPARATIVE GOVERNMENT AND POLITICS OF SELECTED COUNTRIES OR AREAS (4)
Studies a single political system or several political systems with common elements. Structure, process, domestic and foreign policies and regional roles are considered. May be repeated for credit as topics vary. Open to majors and non-majors.

INR 3002 INTRODUCTION TO INTERNATIONAL RELATIONS (4)
Study of contemporary international affairs, including analysis of politics among nations; control of national foreign policies, sovereignty, nationalism and diplomacy; technology, public opinion and war in international relations.

INR 3102 AMERICAN FOREIGN POLICY (4)
Analysis of the development and scope of United States foreign policy focusing upon our aims, decision-making, application of policies, and alternatives for specified problem areas in foreign affairs.

INR 3403 INTERNATIONAL LAW AND DIPLOMACY (4)
Contemporary international norms, agreements and negotiations. Their influence on, and response to, a changing international system.

INR 4334 DEFENSE POLICY (4)
Analytic study of contemporary American defense policy. It includes institutional factors contributing to formulation of defense policy and the impact of such policy on international relations.

INR 4502 INTERNATIONAL ORGANIZATION (4)
The problems of achieving peace through existing international structures, both within and outside the United Nations. The background, achievement and organizational problems of these agencies.

PAD 3003 INTRODUCTION TO PUBLIC ADMINISTRATION (4)
A comprehensive examination of the field of public administration, with emphasis on the development of important theories and practices within the context of the American political system.

PAD 4204 PUBLIC FINANCIAL ADMINISTRATION (4)
Analysis of problems in the growth and development of public budgets, with emphasis on principal techniques and theories of fiscal administration.

POS 2041 AMERICAN NATIONAL GOVERNMENT (4)
Analysis of basic principles and procedures of the American governmental system with emphasis on current issues and trends.

POS 2112 STATE AND LOCAL GOVERNMENT AND POLITICS (4)
Analysis of the structure and function of state and local governments, of the social and political influences that shape them, and of the dynamics of their administrative processes.

POS 3142 INTRODUCTION TO URBAN POLITICS AND GOVERNMENT (4)
An introductory analysis of governmental structures, political process and problems in metropolitan areas. Open to majors and non-majors.

POS 3145 GOVERNING METROPOLITAN AREAS (4)
Examines current governmental institutions and their operating characteristics in light of the formation and growth of metropolitan areas and the need for regional governance, and identifies and analyzes current governance problems and potential institutions for effective governance. Open to majors and non-majors.

POS 3173 SOUTHERN POLITICS (4)
Comparative analysis of selected political patterns and trends in the eleven southern states since 1950.

POS 3182 FLORIDA POLITICS AND GOVERNMENT (4)
A study of Florida political culture, political parties and elections, the legislative, executive, and judicial systems, and policy patterns. Open to majors and non-majors.

POS 3273 PRACTICAL POLITICS (4)
PR: POS 2041 or POS 3453. Field work in local political party activities and election campaigns. Open to majors and non-majors.

POS 3284 JUDICIAL POLITICS (4)
Consideration of selected theories of judicial decision-making. Examination and application of social science methodology to the study of court systems.

POS 3453 POLITICAL PARTIES AND INTEREST GROUPS (4)
Analysis and understanding of the role, functions and processes of political parties and interest groups in American government.

POS 3493 JUDICIAL PROCESS (4)
Studies in the organization, development and function of American court systems, and the roles they play in the process of government. Open to majors and non-majors.

POS 3691 INTRODUCTION TO LAW AND POLITICS (4)
Survey of important aspects of the study of law in political science. Among topics considered are the nature of law and the legal process and the relationship to political life of constitutional law, administrative law, the judicial process and private law. Understanding is sought in the related dimensions of legal theory, behavior, and impact on public policy.

POS 3713 EMPIRICAL POLITICAL ANALYSIS (4)
An introduction to the conduct of empirical political inquiry and to research methods. Techniques of data generation, collection, and analysis will be emphasized. Laboratory exercises required.

POS 4165 CITY POLITICS (4)
Analysis of the politics of cities and suburbs: citizen attitudes, voting, participation; ethnic politics; the political machine; community power structures; interest groups. Open to majors and non-majors.

POS 4204 POLITICAL BEHAVIOR (4)
Analysis of economic, psychological and social dimensions of political behavior; political participation; leadership and elites; political attitudes; voting behavior and decision-making processes.

POS 4233 VOTING BEHAVIOR, PUBLIC OPINION, AND ELECTIONS (4)
Critical analysis of mass voting behavior and the role of elections in formally democratic political systems. Special emphasis on American patterns, with secondary attention to cross-national research. Open to majors and non-majors.

POS 4413 THE AMERICAN PRESIDENCY (4)
Examination of the presidency as a political institution. Analysis of constitutional, statutory and informal powers; legislative and political leadership; presidential decision-making processes; administrative responsibilities; White House staffing; limits on power.

POS 4424 THE AMERICAN CONGRESS (4)
Analysis of the American Congress; organization, procedure, committee system, party leadership, relations with governmental and non-governmental organizations and agencies, oversight and decision-making process.

POS 4614 CONSTITUTIONAL LAW I (4)
Examination of the underlying philosophy of the American Constitution, its principal institutions, their legal relationships to each other and the scope of their powers. Analysis of cases and commentaries from the founding period to the present.
POS 4624 CONSTITUTIONAL LAW II
Analysis of the evolution of individual rights in such areas as property rights, rights of the accused, minority rights, and freedom of expression. Examination of Supreme Court cases and scholarly commentaries.

POS 4693 WOMEN AND LAW
Issues concerning the legal aspects of sex and sex-based discrimination as embodied in statutory and case law. Open to majors and non-majors. (Also offered under Women's Studies.)

POS 4905 INDEPENDENT STUDY
PR: 3.0 average in Political Science. Specialized independent study determined by the students' needs and interests and with CI. (S/U only.)

POS 4910 INDIVIDUAL RESEARCH
PR: 3.0 average in Political Science and CI. Investigation of some aspect of political science culminating in the preparation of an original research paper.

POS 4936 SENIOR SEMINAR
PR: Senior standing. Designed to give the student an opportunity to examine and apply various concepts and methods in the field of political science to some integrated problem area.

POS 4941 FIELD WORK
PR: 3.0 average in Political Science and CI. Opportunity for students to obtain practical experience, knowledge and understanding of local government, politics and administration by becoming involved as research and administrative aides to agencies and institutions of local government.

POS 4970 HONOR THESIS
PR: Admission to Honor Plan and CI. Writing of honor thesis under direction of faculty members.

POT 3003 INTRODUCTION TO POLITICAL THEORY
Survey of the various kinds of theory used by political scientists for understanding political phenomena. Examination of the principal distinctions, contributions and problems in such theories as normative theory, empirical theory, historicist theory and analytic theory. Open to majors and non-majors.

POT 3013 CLASSICAL POLITICAL THEORY
Analysis of basic political ideas from the works of Plato, Aristotle, Cicero, and other leading Greek and Roman political philosophers.

POT 4054 MODERN POLITICAL THOUGHT
Analysis of basic political ideas from the works of Machiavelli, Hobbs, Locke, Rousseau, Burke, Bentham, and Mill.

POT 4064 CONTEMPORARY POLITICAL THOUGHT
Analysis of themes and personalities from 19th and 20th century political thought.

POT 4204 AMERICAN POLITICAL THOUGHT
Analysis of American political thought from the colonial period to the present with emphasis on recent contributions.

PUP 4534 HOUSING AND GOVERNMENT
Examines the role of federal, state, and local government in the formulation and implementation of housing policy. Analyzes the political aspects of housing policy formation and the administrative aspects of the housing delivery system. Open to majors and non-majors.

URP 4050 CITY PLANNING AND COMMUNITY DEVELOPMENT
An introduction to the development, role and components of city planning in local government and to the potential and actual policies of state and local government in attempting to regulate or control urbanization. Open to majors and non-majors.

GRADUATE COURSES

CPO 5934 ISSUES IN COMPARATIVE GOVERNMENT
Selected problems and issues in comparative government. May be repeated for credit as topics vary.

CPO 6007 SEMINAR IN COMPARATIVE GOVERNMENT AND POLITICS
Comparative analysis of political systems in terms of processes, institutions and behavior.

CPO 6008 GOVERNMENT AND POLITICS OF SELECTED COUNTRIES OR AREAS
Examination of the government and politics of one country or a group of countries constituting an area. The specific country or area to be determined by the instructor. May be repeated for credit as topics vary.

CPO 6036 POLITICS OF DEVELOPING AREAS
Advanced study of ideologies, governmental structures and political processes of selected nations of the non-Western world.

INR 5086 ISSUES IN INTERNATIONAL RELATIONS
Selected problems and issues in international relations. May be repeated for credit as topics vary.

INR 6007 SEMINAR IN INTERNATIONAL RELATIONS
Investigation of selected phases of international relations in world politics.

INR 6107 AMERICAN FOREIGN POLICY
A study of U.S. foreign policies with emphasis on decision-making processes, structures; policy outcome; and the evaluation of related political and economic issues.

PAD 5035 ISSUES IN PUBLIC ADMINISTRATION AND PUBLIC POLICY
Selected issues and topics in Public Administration and Public Policy. May be repeated for credit as topics vary.

PAD 5333 CONCEPTS AND ISSUES IN PUBLIC PLANNING
Analysis of planning in the public sector and the various important processes involved, such as policy determination, collection of information, decision-making, and other organizational and political processes.

PAD 5417 PUBLIC PERSONNEL ADMINISTRATION
An analysis of recruitment, testing, training, employee and human relations in the public service.

PAD 5605 ADMINISTRATIVE LAW
An examination of the constitutional bases and limitations of the administrative process, administrative adjudication, rule making and the judicial review of such actions.

PAD 5612 ADMINISTRATIVE REGULATION
An analysis of the regulatory functions and processes in the American political system. The regulatory commissions, their functions, powers, management, and relations with other branches of government are covered.

PAD 5807 ADMINISTRATION OF URBAN AFFAIRS
An analysis of the role of the administrator at the municipal level stressing the division of functions, policy formation, alternative governmental structures and their effect on administrative processes.

PAD 5836 COMPARATIVE PUBLIC ADMINISTRATION
Analysis of Public Administrative systems or institutions cross-nationally with special emphasis on conceptual developments and empirical knowledge from Western and non-Western types of governments.

PAD 6037 BUREAUCRACY AND PUBLIC POLICY
Analysis of the formal, informal and societal characteristics of public bureaucracies and their impact on public policy.

PAD 6600 SEMINAR IN PUBLIC ADMINISTRATION
Examination of major conceptual developments, current research interests, issues, and problems in the theory and process of public administration.

POLITICAL SCIENCE 257
PAD 6207 PUBLIC FINANCIAL ADMINISTRATION
An examination of the fiscal organization of federal, state and local governments. Current problems in budgeting, revenue and indebtedness are considered.

PAD 6228 STATE AND LOCAL BUDGETING
An examination of the budgetary systems and practices of state and local governments with emphasis on preparation, authorization, execution and control.

PAD 6306 URBAN POLICY ANALYSIS
Systematic examination of the organizational and administrative characteristics of planning, program development and reporting activities conducted at local levels by various state, regional and federal agencies.

POS 5994 ISSUES IN AMERICAN NATIONAL AND STATE GOVERNMENT
Selected issues and topics in American National and State Governments. May be repeated for credit as topics vary.

POS 5155 ISSUES IN URBAN GOVERNMENT AND POLITICS
Selected issues and topics in Urban Government and Politics. May be repeated for credit as topics vary.

POS 5699 RESEARCH IN LAW AND POLITICS
Application of basic research tools to problems of case law and legislative history. Actual research experiences are employed to develop skills in such tasks as analyzing judicial opinions, finding points of law and researching legislative intent. The use of these skills is illustrated in a variety of settings, including public, governmental and academic research.

POS 5734 POLITICAL RESEARCH METHODS
An examination of problems and issues of political research methods, including the formulation of research problems, research design, acquisition of data and analysis.

POS 5764 COMPUTER APPLICATIONS IN POLITICAL SCIENCE
An introduction to the applications of computers to the study of politics. Topics include: unit-record equipment, electronic computer, coding of data, statistical packages, data analysis, alternative applications.

POS 6045 SEMINAR IN AMERICAN NATIONAL GOVERNMENT AND POLITICS
Advanced study of the institutions and processes of American national government.

POS 6095 SEMINAR IN INTERGOVERNMENTAL RELATIONS
Advanced study of the interaction between the various levels of government. Emphasis is given to the counties, special districts, C.O.G.'s interlocal agreements, and new fiscal processes.

POS 6127 SEMINAR IN STATE GOVERNMENT AND POLITICS
Advanced study of the institutions and processes of American state government.

POS 6157 SEMINAR IN URBAN GOVERNMENT AND POLITICS
Analysis of the literature in urban government and politics, with special emphasis on urban political behavior and the development of various theories and propositions regarding governmental structure and the formation and implementation of public policy.

POS 6207 POLITICAL BEHAVIOR
Advanced study of determinants and dimensions of political behavior; political participation, voting, attitudes, public opinion, leadership, and elite behavior.

POL 6246 POLITICAL SOCIALIZATION
Seminar in selected phases of the political socialization process.

POS 6415 THE AMERICAN PRESIDENCY
Analysis of problems of modern presidency, with emphasis on staffing and decision-making.

POS 6427 THE LEGISLATIVE PROCESS
Analysis of formal and informal decision-making processes in House and Senate; executive-legislative conflict and cooperation; input/output analysis.

POS 6455 POLITICAL PARTIES AND INTEREST GROUPS
Analysis of role, functions and various special characteristics of political parties and interest groups as well as their interactions with other political institutions in the political process.

POS 6607 CONSTITUTIONAL LAW
Advanced study of legal, political and methodological problems related to constitutional law.

POS 6698 SEMINAR IN LAW AND POLITICS
Advanced study of institutions and processes in the field of law and politics.

POS 6706 SCOPE AND METHODS OF POLITICAL SCIENCE
Advanced study of the scope and methodologies of political science, including their applications to different research areas.

POS 6909 INDEPENDENT STUDY
PR: 3.0 average in Political Science. Specialized independent study determined by the students' needs and interests and with the consent of the instructor. (S/U only.)

POS 6919 DIRECTED RESEARCH
PR: GR. Master's level. Repeatable. (S/U only.)

POS 6934 SELECTED TOPICS IN POLITICAL SCIENCE AND PUBLIC ADMINISTRATION
Selected topics, issues, and problems in political science and public administration for advanced graduate students. May be repeated for credit as topics vary.

POS 6942 FIELD WORK IN POLITICAL SCIENCE AND PUBLIC ADMINISTRATION
PR: 3.0 average in Political Science and CI. Application of research models now employed in governmental agencies, including developing a structured research proposal. Designed to give students practical experience in the administrative and political processes. Required for MPA students.

POS 6971 THESIS: MASTER'S
Repeatable. (S/U only.)

POT 5626 ISSUES IN POLITICAL PHILOSOPHY AND LAW
Selected topics in political philosophy and law. May be repeated for credit as topics vary.

POT 6007 SEMINAR IN POLITICAL THEORY
This course will deal with the major contributions to political theory through the ages. An analysis, both critical and analytical, of the major works will be attempted.

PUP 6007 SEMINAR IN PUBLIC POLICY
An analysis of the background and interpretation of various approaches which influence the formulation and execution of public policy.

PUP 6538 GOVERNMENTAL HOUSING POLICY
This course examines government involvement in housing, with special emphasis on the development and analysis of certain housing programs.

URP 6056 CITY AND REGIONAL PLANNING
An investigation of regional planning and a review of goals, objectives, and interrelationships between regional and city planning; and intergovernmental and policy issues in the regional planning process.
UNDERGRADUATE COURSES

CBH 4004 COMPARATIVE PSYCHOLOGY (4) PR: EXP 4404, PSB 4013, PSY 2012, PSY 3013, PSY 3213, PSY 3214. The study of the evolution of behavior, similarities, and differences in capacities for environmental adjustment and for behavioral organization among the important types of living beings from plants and unicellular organisms to the primates including man.

CLP 3003 PSYCHOLOGY OF ADJUSTMENT (4) Genetic, organic, and learned factors involved in the processes of personal adjustment: applications for mental health principles to everyday living. Not for major credit.


CLP 4433 PSYCHOLOGICAL ASSESSMENT (4) PR: PSY 2012, PSY 3013, PSY 3213, PSY 3214. A consideration of the instruments for intellectual and personality assessment including their applications, development, and potential abuses. Students may not receive credit for both CLP 4433 and EDF 3430. Introduction to Measurement and Evaluation.

DEP 3103 CHILD PSYCHOLOGY (4) Developmental and psychosocial aspects of childhood, including hereditary, maturation, psychological, and social determinants of child behavior. Not for major credit.


EXP 4204C PERCEPTION (4) PR: PSY 2012, PSY 3013, PSY 3213, PSY 3214. How man perceives his environment. Topics include sensory basis of perception, physical correlates of perceptual phenomena, and the effects of individual and social factors on perception. Primary emphasis on vision and audition. Lec.-lab.

EXP 4304 MOTIVATION (4) PR: EXP 4404, PSY 2012, PSY 3013, PSY 3213, PSY 3214. An examination of human and animal motivations from both physiological and psychological viewpoints.


EXP 4523C HUMAN MEMORY (4) PR: PSY 2012, PSY 3013, PSY 3213, PSY 3214. Survey of methods, empirical findings, and theoretical interpretations of human learning and retention, including concept learning, information processing, and verbal learning. Lec.-lab.

INP 3101 APPLIED PSYCHOLOGY (4) The application of psychological principles and the functions of psychologist in education, government, industry, and clinical practice. Not for major credit.

INP 4004 INDUSTRIAL PSYCHOLOGY (4) PR: PSY 2012, PSY 3013, PSY 3213, PSY 3214. Application of psychological principles to industry. Topics include: selection and placement, testing, criterion development, performance appraisal, training, motivation, job attitudes and satisfaction, supervision, decision-making, organizational structure and theory, accidents and safety, human engineering.

PPE 4004 PERSONALITY (4) PR: PSY 2012, PSY 3013, PSY 3213, PSY 3214. Methods and findings of personality theories and an evaluation of constitutional, biosocial, and psychological determinants of personality.


PSY 2012 AN INTRODUCTION TO CONTEMPORARY PSYCHOLOGY (4) Designed as an introductory course in psychology for both majors and non-majors. A broad survey of contemporary psychology with special emphasis on the more applied areas of psychology (e.g., social psychology, clinical psychology, industrial psychology).

PSY 3003 CONTEMPORARY PROBLEMS IN PSYCHOLOGY (4) Selected topics from all areas of psychology designed to give the undergraduate non-major an opportunity to become acquainted with psychological concepts relevant to contemporary problems in our society. Not for major credit.

PSY 3013 GENERAL PSYCHOLOGY (4) PR: PSY 2012 or CI. Designed as an in-depth examination of the basic principles and concepts of psychology. It is intended to provide the student with the necessary knowledge for the more specialized courses that follow. Students will be introduced to the basics of experimental investigations and be given extensive coverage of the basic areas of psychology (e.g., learning, perception, neuropsychology). Three lectures, one discussion/lab.

PSY 3213 RESEARCH METHODS IN PSYCHOLOGY I (5) PR: PSY 3013 or CI. Designed to provide an introduction to the methods employed in psychological research, this course considers the logic of experimental design, the concept of control, and the analysis of experimentally obtained data. Following the discussion of factors common to all experimental designs, the course focuses on one and two group designs, control problems specific to these designs, and the methods of data reduction and evaluation typically applied to these designs. The laboratory section provides experience applying the concepts discussed in the lecture.

PSY 3214 RESEARCH METHODS IN PSYCHOLOGY II (5) PR: PSY 3213. A continuation of the introduction to the methods of psychological research begun in PSY 3213. Consideration of multiple treatment designs and data analysis. Discussions of small-N designs, correlational designs, non-parametric data evaluation, and measurement of sensation. The laboratory section provides experience applying the concepts discussed in lecture.

PSY 3933,3934 RESEARCH METHODS IN PSYCHOLOGY (4,4) PR: PSY 2012, PSY 3013, STA 3122. Scientific research methods and their applications for psychology. Topics include experimental planning, control procedures, and interpretive principles. Lecture plus two hour lab. Must be taken concurrently.

PSY 4205 EXPERIMENTAL DESIGN AND ANALYSIS (4) PR: PSY 2012, PSY 3013, PSY 3213, PSY 3214. Detailed coverage of those research designs and statistical techniques having the greatest utility for research problems in psychology. Emphasis on topics from analysis of variance.
PSY 4604 SYSTEMATIC PSYCHOLOGY (4)
PR: PSY 3123, PSY 3124. The historical roots of modern psychological theories, investigation of the various schools of psychology such as behaviorism, Gestalt psychology, psychoanalysis, and phenomenological psychology.

PSY 4904 DIRECTED READING (1-4)
PR: Upper division standing and CI. A reading program of topics in psychology is conducted under the supervision of a psychology faculty member. May be repeated with a maximum of eight hours credit.

PSY 4913 DIRECTED RESEARCH (1-4)
PR: Upper division standing and CI. The student plans and conducts an individual research project under the supervision of a psychology faculty member. May be repeated with a maximum of eight hours credit.

PSY 4931 SELECTED TOPICS: SEMINAR (4)
PR: Upper division standing and CI. Graduate-type seminar designed to provide the advanced undergraduate student with the opportunity to interact with the faculty and other students for the purpose of developing an in-depth understanding of a selected sub-area within psychology. May be repeated with a maximum of eight hours credit.

PSY 4932 HONORS SEMINAR (4)
PR: Admission to honors program in psychology and CI. Graduate-type seminar designed to provide the honors student with an opportunity to present, discuss, and defend his own research and to explore in-depth topics in several areas of psychology. May be repeated with a maximum of 12 hours credit.

PSY 4970 HONORS THESIS (4)
PR: Admission to honors program in psychology and CI. The student under supervision of a faculty member will formalize, conduct, analyze, and report in writing a research project in psychology.

SOP 4004 SOCIAL PSYCHOLOGY (4)
PR: PSY 3013, PSY 3213, PSY 3214. Survey of methods, empirical findings, and theoretical interpretations in the study of an individual's behavior as it is affected by others.

SOP 4714C ENVIRONMENTAL PSYCHOLOGY (4)
PR: PSY 3213 or CI. This course will explore the influence of environment on behavior. Topics considered will include crowding, privacy, territorial behavior, environmental design, and pollution effects. This course is designed for both psychology majors and non-majors.

SOP 4742 PSYCHOLOGY OF WOMEN (4)
An examination of theories of female personality. Concepts of personality theory regarding sex differences, differential socialization, and sex-typed behavior. Particular attention to research on performance differences, and to developmental tasks of women in our society. (Also offered under Women's Studies.)

SOP 4772 HUMAN SEXUAL BEHAVIOR (4)
The dynamics of human sexuality including biological, constitutional, cultural, and psychological aspects. Exploration of the range of sexual behavior across groups. Sources of beliefs and attitudes about sex, especially female sexuality, current status. Interdisciplinary faculty. (Also offered under Women's Studies.)

GRADUATE COURSES

CLP 6166 PSYCHOPATHOLOGY (5)
PR: Admission to M.A. program in psychology or CI. Exploration of current approaches to the understanding of psychopathological behavior and implications for theories of personality. A survey of treatment methods is included. M.A. core course.

CLP 6438 PSYCHOLOGICAL ASSESSMENT (5)
PR: CI. Courses cover theory, research, and applications of psychological assessment in areas such as interviewing, intellectual and cognitive functioning, neuropsychodiagnostic, and personality testing. May be repeated for credit with different subject matter.

CLP 6477 BEHAVIORAL DISORDERS OF CHILDREN (5)
PR: CI. Causative factors in behavior deviations common to children and adolescents. Thorough study of selected childhood mental disorders and a survey of ameliorative techniques for treating childhood behavior difficulties.

CLP 6937 TOPICS IN CLINICAL-COMMUNITY PSYCHOLOGY (5)
PR: CI. Courses on topics such as humanistic psychology, community psychology, and clinical neuropsychology. May be repeated for credit with different subject matter.

CLP 7188 PSYCHOTHERAPY AND BEHAVIOR CHANGE (5)
PR: Admission to graduate degree program in psychology and CI. Courses to cover the theoretical, empirical, and applied foundations of various systems of psychotherapy. Traditional relationship therapy, client-centered approaches, operant technique, group psychotherapy, and other varieties of therapeutic intervention. May be repeated for credit with different subject matter.

CLP 7379 GRADUATE SEMINAR IN CLINICAL-COMMUNITY PSYCHOLOGY (1-5)
PR: CI. Seminars on topics such as psychopathology, community psychology, clinical issues, personality, and developmental psychology. May be repeated for credit with different subject matter.

DEP 6058 DEVELOPMENTAL PSYCHOLOGY (5)
PR: Admission to M.A. program in psychology or CI. Detailed study of the development of human and animal behavior aimed toward an understanding of ontogenetic contributions to later behaviors. Effects of early experience on later behavior. M.A. core course.

EAB 6717 APPLICATIONS OF LEARNING PRINCIPLES & PROCEDURES (5)
PR: Prior course in learning, or CI. Application of various learning principles and procedures to problems in specialized settings. (Also offered under Rehabilitation Counseling.)

EXP 6208 PERCEPTION (5)
PR: Admission to M.A. program in psychology or CI. Current data and theory of perceptual processes. Consideration of physiological and psychological variables in perception, and applications of information theory and signal detection theory. M.A. core course.

EXP 6307 MOTIVATION AND EMOTION (5)
PR: CI. A detailed examination of human motivation and emotion from both the physiological and psychological viewpoints. M.A. core course.

EXP 6406 LEARNING (5)
PR: Admission to M.A. program in psychology or CI. Habituation, sensitization, classical and instructional conditioning, generalization, discrimination, trial and error learning, problem solving. M.A. core course.

EXP 6526 HUMAN MEMORY (5)
PR: Admission to M.A. program in psychology or CI. Review of methods, findings, and theoretical interpretations associated with the study of acquisition and retention of information. M.A. core course.

EXP 6930 TOPICS IN EXPERIMENTAL PSYCHOLOGY (5)
PR: CI. Courses on topics such as operant behavior, electrophysiological methods, psychophysiology, and memory. May be repeated for credit with different subject matter.

EXP 7099 GRADUATE SEMINAR IN EXPERIMENTAL PSYCHOLOGY (1-5)
PR: CI. Seminars on topics such as learning, perception, physiological psychology, cognitive processes, and quantitative methods. May be repeated for credit with different subject matter.

INP 6856 INDUSTRIAL PSYCHOLOGY (5)
PR: Admission to M.A. program in psychology or CI. An
introduction to the major areas of Industrial-Organizational Psychology including the topics of selection and placement, training, criterion development and performance appraisal, job satisfaction and motivation, and organizational theory and structure. M.A. core course.

**INP 6935 TOPICS IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (5)**
PR: CI. Courses on topics such as industrial psychology, testing in industry, human factors psychology, and training in industry. May be repeated for credit with different subject matter.

**INP 7097 GRADUATE SEMINAR IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (1-5)**
PR: CI. Seminars on topics such as industrial psychology, evaluation of performance in industry, and human factors. May be repeated for credit with different subject matter.

**PPE 6058 PERSONALITY (5)**
PR: Admission to M.A. program in psychology or CI. Neural and traditional and current theory and research in the area of personality. M.A. core course.

**PSB 6056 PHYSIOLOGICAL PSYCHOLOGY (5)**
PR: Admission to M.A. program in psychology or CI. Neural and physiological foundations of behavior. Structure and function of the central nervous system and autonomic nervous system. Physiological basis of learning, motivation in sub-humans and humans. M.A. core course.

**PSY 6217 RESEARCH METHODS AND MEASUREMENT (5)**
PR: Admission to graduate degree program in psychology or CI. Courses designed to cover research methods and strategies and their application to psychology. Topics include logic and purpose of experimentation in psychology, measurement theory, design and analysis of experiments, probability, statistical inference, analysis of variance, correlational methods, interpretation of experimental findings. M.A. core course. May be repeated for credit with different subject matter.

**PSY 6218 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 five credits per student. (S/U only.)

**PSY 6907 INDEPENDENT STUDY (var.)**
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

**PSY 6917 DIRECTED RESEARCH (var.)**
PR: GR. Master's level. Repeatable. (S/U only.)

**PSY 6946 PRACTICUM AND INTERNSHIP IN CLINICAL PSYCHOLOGY (1-15)**
PR: CI. Supervised training in community and university settings in the application of psychology. May be repeated for credit.

**PSY 6947 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 five credits per student. (S/U only.)

**PSY 6971 THESIS: MASTER'S (var.)**
Repeatable. (S/U only.)

**PSY 7908 DIRECTED READINGS IN PSYCHOLOGY (1-15)**
PR: CI. An advanced reading program of selected topics in Psychology under the supervision of a psychology faculty member. The reading program is designed to meet the individual requirements and interest of graduate students in Psychology, with selected topics chosen by the student in close collaboration with a faculty member. May be repeated for credit.

**PSY 7918 DIRECTED RESEARCH (var.)**
PR: GR. Ph.D. level. Repeatable. (S/U only.)

**PSY 7931 SEMINAR IN ETHICS AND PROFESSIONAL PROBLEMS (5)**
PR: Second year in Ph.D. program in psychology or CI. Ethical issues and professional problems in the practice of psychology.

**PSY 7980 DISSERTATION: DOCTORAL (var.)**
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

**SOP 6059 SOCIAL PSYCHOLOGY (5)**
PR: Admission to M.A. program in psychology or CI. Overview of theory and research in social psychology. Attitudes, values, group processes, leadership, conformity, social learning and motivation. M.A. core course.

**SOP 6669 TOPICS IN SOCIAL-ORGANIZATIONAL PSYCHOLOGY (5)**
PR: CI. Courses on topics such as experimental social psychology, organizational psychology, attitudes, and group processes. May be repeated for credit with different subject matter.

**SOP 7609 GRADUATE SEMINAR IN SOCIAL-ORGANIZATIONAL PSYCHOLOGY (1-5)**
PR: CI. Seminars on topics such as social psychology, scientific communication, and decision making. May be repeated for credit with different subject matter.

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**REHABILITATION COUNSELING**

*Director: C. M. Pinkard, Jr.; Associate Professors: J. F. Dickman, P. Gross, M. J. Landsman, C. M. Pinkard, Jr.*

**GRADUATE COURSES**

**EGC 5065 REHABILITATION: CONCEPTS AND THEORETICAL ISSUES (5)**
A look at the historical origin, development, and current understanding of the philosophy of rehabilitation. The rehabilitation process is viewed as an integration of concepts and procedures from the medical, social-psychological, and legal disciplines.

**EGC 5376 MEDICAL ASPECTS OF DISABILITY (5)**
Study of medical information needed by the counselor in integrating medical services into the total rehabilitation process from referral to placement. Examines the effect of a client's physical condition on various areas of adjustment. Includes appraisal of physical capacities in terms of functional limitations and individual differences.

**EGC 5493 SEMINAR IN PRINCIPLES AND PRACTICES OF REHABILITATION COUNSELING I (4)**
PR: CI. Procedures appropriate in meeting the needs of handicapped individuals in the rehabilitation process. Must be taken concurrently with EGC 5850. (S/U only.)

**EGC 5725 INTERPERSONAL ASPECTS OF REHABILITATION COUNSELING I (5)**
PR: CI. Focuses on the effective utilization of one's self in the various counseling and coordinating relationships of the rehabilitation process. An introduction to encounter, body awareness, Gestalt counseling techniques, and related approaches.

**EGC 5850 PRACTICUM I (2)**
PR: CI. Supervised observation experience and participation in counseling services in various rehabilitation agencies. Must be taken concurrently with EGC 5493. (S/U only.)

**EGC 5905 DIRECTED STUDIES (2-5)**
PR: CI. Study in rehabilitation counseling area under the direct supervision of a faculty member. May be repeated for a maximum of 10 hours credit.
EGC 6205 EVALUATION IN THE REHABILITATION PROCESS (5)
PR: EGC 5725. Examine the evaluation procedure from the point of view of providing reliable and valid information for use in the counseling process.

EGC 6374 VOCATIONAL EVALUATION, ADJUSTMENT SERVICES, AND PLACEMENT OF THE HANDICAPPED AND DISADVANTAGED (2-5)
Methods and techniques employed to assess the mental, social, physical, and vocational problems of handicapped and disadvantaged persons. Diagnosis, evaluation, and placement in relation to vocational potential.

EGC 6417 APPLICATIONS OF LEARNING PRINCIPLES AND PROCEDURES (5)
PR: Prior course in learning or CI. Application of various learning principles and procedures to problems in specialized settings. (Also offered under Psychology.)

EGC 6468 PSYCHO-SOCIAL DISABILITY IN REHABILITATION COUNSELING (5)
PR: EGC 5725. Personal, social, and vocational consequences of emotional and social disabilities.

EGC 6494 SEMINAR IN PRINCIPLES AND PRACTICES OF REHABILITATION COUNSELING II (4)
PR: EGC 5493 and EGC 5850. Continuation of EGC 5493. Must be taken concurrently with EGC 6851. (S/U only.)

EGC 6566 GROUP WORK IN REHABILITATION COUNSELING (5)
PR: CI. Examination of group processes as applicable to rehabilitation counseling.

EGC 6567 ADVANCED GROUP WORK IN REHABILITATION COUNSELING (5)
PR: CI. Extension of EGC 6566 with emphasis of field work.

EGC 6727 INTERPERSONAL ASPECTS OF REHABILITATION COUNSELING II (5)
PR: EGC 5725. An extension and intensification of skills developed in EGC 5725.

EGC 6767 RESEARCH METHODOLOGY IN REHABILITATION (5)
PR: CI. The aim of this course is to help students evaluate and utilize available research studies as well as to develop their own research skills. An individual research project is required.

EGC 6851 PRACTICUM II (2)
PR: EGC 5493 and EGC 5850. Continuation of EGC 5850. Must be taken concurrently with EGC 6494. (S/U only.)

EGC 6885 INTERNSHIP IN REHABILITATION (10-15)
PR: EGC 6494 and EGC 6851. Student placement in an approved intern setting for a minimum of 400 hours of supervised experience. (S/U only.)

EGC 6906 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

EGC 6915 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

EGC 6934 SEMINAR IN REHABILITATION COUNSELING (2-5)
PR: CI. Seminar in selected issues and problems in rehabilitation counseling. Subject and scope to be determined by instructor. May be repeated for credit with different content.

RELIGIOUS STUDIES

REL 3131 NEW SECTS AND CULTS (4)
A course designed to allow the student to survey the wide spectrum of contemporary sects and cults and learn what motivates their development.

REL 3132 THE BLACK CHURCH (4)
A critical examination of the Black Church will be made in this course. The significance of religious development and the present condition of Black religious institutions and their relationships to modern movements will be examined. Denominational, interdenominational, and international caucuses will also be examined for their particular religious, political, economic, social, and ideological significance.

REL 3133 BLACK RELIGIOUS EXPERIENCE IN AMERICA (4)
A course designed to stimulate interest in the religious history, experience, and thinking of American Blacks.

REL 3201 LAND OF THE BIBLE (4)
A survey of the natural features, historical forces, and cultural movements of the Holy Land that shaped its peculiar role in history with respect to the ancient Hebrews. Particular attention will be paid to the period from the Hebrew Conquest to the time of Jesus.

REL 3210 INTRODUCTION TO THE OLD TESTAMENT (4)
An introduction to the critical study of the Hebrew Scriptures against the background of the ancient Near East, with attention to the history and religion of the Hebrew people. REL 3210 and REL 4221 may not both be credited toward the major.

REL 3243 INTRODUCTION TO THE NEW TESTAMENT (4)
An introduction to the critical study of the New Testament in context of Christian beginnings in the first century A.D. REL 3243 and REL 4244 may not both be credited toward the major.

REL 3280 BIBLICAL ARCHEOLOGY (4)
An examination in depth of the archaeological data relating to the
background and content of the Bible, including ancient customs, Biblical sites and cities, Biblical history, and material culture of the Biblical period. Special attention will also be given to excavation methods and interpretation of archaeological evidence.

REL 3310 WORLD RELIGIONS—EASTERN
An introduction to and a comparison of the ideas, the literature, the institutions of the major religions of the Eastern World, especially Buddhism (Theravada, Mahayana, Zen), Hinduism, Jainism, Taoism, Confucianism, Shinto.

REL 3320 WORLD RELIGIONS—WESTERN
An introduction to and a comparison of the ideas, the literature, the institutions of the major religions of the Western (Near Eastern origin) World—Judaism, Zoroastrianism, Christianity, and Islam. And a general comparison of Western religious ideas with Eastern religious ideas.

REL 3332 BUDDHISM
The study and comparison of Theravada and Mahayana Buddhism in their philosophical and psychological dimensions.

REL 3335 RELIGIONS OF CHINA AND JAPAN
This course will investigate the philosophy of ancient China and its two major interpreters, Lao Tzu and Confucious. It will also look at the native Japanese Shinto religion.

REL 3342 THE RELIGIONS OF INDIA
The sources of Hindu philosophic thought, an understanding of the psychology of the Yogas, and a study of the Hindu holy men and women are the three main concerns of this course.

REL 3420 CONTEMPORARY RELIGIOUS THOUGHT
An examination of the central ideas of recent theological thinkers; such men as Barth, Brunner, Bultmann, Bonhoeffer, Rahner, Tillich, Cox, Alitzer, Buber, Niebuhr.

REL 3501 HISTORY OF CHRISTIANITY I
The historical development of Christianity, its ideas and institutions, from the first century to the sixteenth century.

REL 3502 HISTORY OF CHRISTIANITY II
The historical development of Christianity, its ideas and institutions from the work of John Wycliff to the rise of "religious modernism" in the 19th century.

REL 3610 HISTORY OF JUDAISM
The historical development of Judaism and Jewish concepts from biblical times to the modern era with emphasis on the formative years from the Prophets to the close of the Talmud.

REL 3612 MODERN JUDAISM
A study of Jewish life in the West since 1789, emphasizing Jewish beliefs, practices, and institutions.

REL 3900 DIRECTED READINGS
PR: Cl. Individual guidance in concentrated reading on a selected topic.

REL 3936 SELECTED TOPICS
PR: Cl. Course contents depend on students' needs.

REL 4141 RELIGIOUS BEHAVIOR AND INSTITUTIONS
PR: One course in sociology or social psychology or Cl. The sources of religious social thought, an understanding of the historical evolution of religious thought about society, and an analytical grasp of the way in which religious insights and values relate to human societal life are the three main objectives of this course.

REL 4158 RELIGION AND DEPTH PSYCHOLOGY
PR: One psychology course or Cl. This course is designed to enhance the student's understanding of human existence by investigating the interrelationships between human dynamics and religion.

REL 4182 COMPARATIVE MYSTICISM
A course designed to acquaint the student with the nature of mystical experience, and some of the varieties of mystical experience recorded in the writings of the mystics.

REL 4221 BIBLE I: LAW
An examination of the Pentateuch or Torah from the point of view of its literary development, internal traditions, historical background, Law, covenant theology, and Hebrew religion.

REL 4224 BIBLE II: PROPHETS
PR: REL 3210 or REL 4221 or Cl. An investigation of the Prophetic literature of the Hebrew Scriptures including the emergence of mantic prophecy in Elijah and Elishah, classical prophecy in Jeremiah, Micah, Amos, and Isaiah, the later twelve prophets, and the role of Samuel and the Book of Kings.

REL 4228 BIBLE III: WRITINGS
PR: REL 3210 or REL 4221 or Cl. An exploration of the poetic and historical writings in the Hebrew canon including the Psalms, Wisdom Literature, Job and the problem of evil, the Five Scrolls, Daniel and apocalypticism, and the religious views of the Chronicler.

REL 4244 NEW TESTAMENT STUDIES (Gospels)

REL 4250 JESUS' LIFE AND TEACHINGS
PR: Cl. An examination of the various historical studies made in the quest of identifying Jesus as an historical figure. The concern is to make a reasonable assessment of who Jesus was and what he was saying to the Jews in Palestine at the beginning of the common era.

REL 4252 NEW TESTAMENT STUDIES II (Pauline Letters)
An investigation of earliest Christianity in its Jewish and Gentile forms, the historical Paul, his proclamation, and his letters as preserved in the New Testament.

REL 4256 NEW TESTAMENT STUDIES III (Later Letters and Revelation)
An examination of the emergence of institutional Christianity in the New Testament, particularly in churchly theology, the Pastoral Epistles, the catholic Epistles, the letters of James and John, and finally Christian apocalypticism in the book of Revelation (Apocalypse).

REL 4295 DEAD SEA SCROLLS
PR: Cl. A survey and study of the literature of the Dead Sea Scrolls in English translation. Examination of the literary, historical, and archaeological evidence for the identification of the Qumran people with the Essenes. Possible connections with the New Testament and early Christian theology.

REL 4910 UNDERGRADUATE RESEARCH
PR: Junior standing and Cl. Individual investigations with faculty supervision.

REL 4931 SEMINAR IN RELIGION
A course designed for persons, especially Religious Studies majors, whose prior religious studies have prepared them for a cooperative creative and/or research effort in the area of religion.

REL 4936 SELECTED TOPICS
PR: Junior standing and Cl. Individual investigations with faculty supervision.

GRADUATE COURSE

REL 5937 SELECTED TOPICS
PR: Senior standing and Cl. Course contents depend on student's needs.
Ancient Studies Sequence

UNDERGRADUATE COURSES

CLA 3000 ANCIENT CIVILIZATIONS (5)
Study of the character, ideas, and cultural achievements of the peoples of the Ancient Middle East and Mediterranean and their relevance for modern Western civilization.

CLA 3801 HISTORY OF ALPHABET (2)
Study, in reasonable detail, of the evolution of our 'Roman' alphabet, as well as of other ancient and modern alphabets, from the writing system of ancient Egypt.

CLA 3851 MID-EASTERN MYTHOLOGY (3)
Study of the more important myths and religious concepts of Egypt, the Fertile Crescent, Crete, Anatolia, and Persia, and of their impact on the Hebrew and Graeco-Roman mythologies as well as on later Western art, literature, and religion.

CLA 4100 GREEK CIVILIZATION (4)
Detailed study of the Aegean and Greek civilizations from their beginning in Crete and Mycenaean to the Roman period. Greek discoveries, exploration, and colonization. (Alternate years.)

CLA 4120 ROMAN CIVILIZATION (4)
Prehistoric Italy and the Etruscan civilization. History of the civilization of Rome and the Empire with emphasis on the Etruscan, Greek, Carthaginian, and Mid-Eastern influences. (Alternate years.)

CLA 4160 EGYPTIAN CIVILIZATION (4)
Study of the Ancient Egyptian civilization, including customs, religion, art and architecture, language and literature, science and the calendar, and an introduction to hieroglyphic writing. (Alternate years.)

CLA 4171 MESOPOTAMIAN CIVILIZATION (4)
Study of the Ancient Mesopotamian (Sumero-Babylonian) civilization, including customs, religion, art and architecture, languages and literatures, science and the calendar, and an introduction to cuneiform writing. (Alternate years.)

CLA 4900 DIRECTED READINGS (2-5)
PR: Consent of coordinator prior to registration. Readings in special topics chosen by the student in cooperation with the instructor. Reading of literature also possible in English translation.

SOCIAL SCIENCES (INTERDISCIPLINARY)


UNDERGRADUATE COURSES

AREA STUDIES
The following five courses (AFS 3930, ASN 3000, ASN 3030, EUS 3000, and LAS 3001), dealing with one or more countries of a given region, will select and emphasize subject matter from the following topics: its history, its people and their cultures, its social psychology and national characteristics, its resources, its economic and industrial characteristics, its literature, religion, and dominant values, its political framework and outlook, its social structure, and its current problems. Each course may be repeated when countries of concentration vary, but the same country may not be repeated for credit.

AFS 3930 AFRICA (4)
ASN 3000 ÁSIA (4)
ASN 3030 THE MIDDLE EAST (4)
EUS 3000 EUROPE (4)
LAS 3001 LATIN AMERICA (4)

CLA 4930 SELECTED TOPICS (2-5)
Course contents depend on student demand and instructor's interest and may range over the whole field of Ancient languages, literatures, and civilizations. Offerings on a semi-regular basis include Tongues of the Bible (2), The Bible as History (4), Basic Sanskrit (3,3,3) and Old Church Slavonic (5).

HEB 3100,3101,3102 BASIC HEBREW I,II,III (3,3,3)
Designed to give students a working knowledge of Classical (Biblical) Hebrew and to introduce them to the Biblical literature in the original language.

HEB 4250,4251,4252 ADVANCED HEBREW I,II,III PR: HEB 3100, HEB 3101, HEB 3102 or equivalent. Study and analysis of selected passages from pre-Exilic, Exilic, and post-Exilic Biblical and extra-Biblical Hebrew texts to the second century B.C.E. Survey of the Hebrew literature from its beginning to the end of the Second Commonwealth.

GRADUATE COURSES
The following entries are intended as service courses for students in related graduate programs, in particular Anthropology, History, and Linguistics. In all of these, permission from the coordinator is required prior to enrollment.

CLA 5900 DIRECTED READINGS (2-5)
Readings in special topics chosen by the student in cooperation with the instructor. Reading of literature also possible in English translation.

CLA 5910 INDIVIDUAL RESEARCH (2-5)
Specialized individual work in particular areas of student's interest.

CLA 5930 SELECTED TOPICS (2-5)
Course contents depend on student demand and instructor's interest and may range over the whole field of Ancient languages (including comparative studies), literatures, civilizations, and epigraphy.

NOTE: In any of the numbers CLA 4900, CLA 4930, CLA 5900, CLA 5910, CLA 5930, enrollment is repeatable for different subject matters.

LEI 4163 LEISURE IN SOCIETY (4)
Facts and trends of changing leisure-time patterns in the USA and other countries; various conceptualizations of leisure; relationships of non-work to work attitudes, personality, family, community, sub-cultures, religion, value systems, social class, and the functions of government.

LEI 4167 SPORT IN SOCIETY (4)
An examination of the broad issues concerning sport in both a historical and contemporary perspective. Sport will be viewed in relation to social institutions, economic considerations, mass media, and the sport group as a micro-social system.

SSI 1211 WORLD PERSPECTIVE (4)
Application of the interdisciplinary approach to the study of the international system, major world regions and problems.

SSI 3151 PSYCHOLOGY AND THE SOCIAL ORDER (4)
Topics to be selected from the following: the quest for personal identity in modern mass society, the problems of mass culture and mass education, the problems of alienation and anomie in the 20th century, psychological factors in political and industrial conflict, man versus the machine in modern life.

SSI 3152 COMMUNICATION (4)
Topics selected from the following: the language of structure,
general semantics, communication networks, language and social perception, diffusion of information, communication and social gamesmanship, Aesopian language and Nu-Think in politics, normative language of clinical psychology, communication and pseudo events, non-verbal communication.

SSI 3153 HUMAN RELATIONS AND PRODUCTIVITY (4)
Topics to be selected from the following: the relation of science, technology, resources, energy, and population change to social, economic, cultural, and political change; social implications of research findings from the social, behavioral, and management sciences.

SSI 3221 AMERICA'S ROLE IN THE WORLD (4)
PR: Upper level standing or CI. Application of the interdisciplinary approach to the study of America's relations with other nations through analysis of political, socio-economic, cultural, and military problems, conflicting, national interests, and the formulation of foreign policy and its implementation.

SSI 3260 COMMUNISM IN THE MODERN WORLD
An interdisciplinary approach to the nature of Communism, its philosophic bases, its anti-religious bias, its economic, social and political theories and practices, the arts and sciences under Communist ideology, its conduct of foreign affairs and associated programs and techniques. Emphasis will be on Soviet and Chinese Communism.

SSI 3930 SELECTED TOPICS IN THE SOCIAL SCIENCES (2-5)
Course content depends on student demand and instructors' interest. Topics will have clear interdisciplinary nature. Course may be repeated as topics vary, but the same topic may not be repeated.

SSI 3955 OVERSEAS STUDY (1-9)
A program of individual or group research in a foreign country. Selection of the student, his preparation for the study, and subsequent evaluation to be supervised by a faculty committee.

SSI 4162 THE CITY AND MAN (4)
Topics to be selected from the following: the city and its ills; proposed new types of community formation; planning and community; the social ecology of the city; conventional versus innovative approaches to the problems of the community.

SSI 4164 SOCIAL ISSUES OF OUR TIME (4)
Topics to be selected from the following: automation and cybernation and the social problems they generate; special problems of a technological civilization; the implications of changing social patterns of Western culture and opportunities for social re-construction.

Director: P. L. Smith; Associate Professor: P. L. Smith; Assistant Professors: W. S. Hutchison, P. A. Maass; Visiting Instructors: H. L. Cohen, A. J. Floyd.

SOcial Work

SSI 4168 SOCIAL VALUES AND SOCIAL ORDER (4)
Topics to be selected from the following: the value-patterns of modern societies; social bases for a world order; the aims and functions of social planning; international transformation created by science and technology.

SSI 4250 THE EMERGING NATIONS
PR: Upper division standing or CI. This course examines the processes and problems involved when an underdeveloped country seeks to develop a modern industrial civilization.

SSI 4900 DIRECTED READINGS (1-4)
PR: CI plus upper division standing. May be repeated. To provide advanced students with intensive reading of interdisciplinary nature in areas of specific interest.

SSI 4910 DIRECTED RESEARCH (1-4)
PR: CI plus upper division standing. May be repeated. To provide advanced students with interdisciplinary research experience in areas of specific interest.

SSI 4936 SENIOR SEMINAR
PR: Senior standing and CI. To provide an integrating seminar experience for International Studies' majors.

STA 3122 SOCIAL SCIENCE STATISTICS
Topics selected from the following: measures of central tendency and variability probability and the normal curve, correlations, curve fitting, scale and index number theory, polling, interview and survey techniques, content analysis. Students who successfully complete this course may not also receive credit for either GEB 2111, Business and Economic Statistics I or STA 3023, Introductory Statistics I.

GRADUATE COURSES

AMS 5021 CONTEMPORARY AMERICAN CULTURE (4)
A social analysis of the leading characteristics, ideals, and values of American life. An effort will be made to deal with a variety of contexts in which American cultural themes, standards and practices receive expression.

SSI 5934 SELECTED TOPICS
PR: CI plus senior standing or graduate status. May be repeated. To provide advanced students with interdisciplinary study of selected topics.

SSI 6900 DIRECTED READINGS
PR: CI and graduate standing. May be repeated. To provide graduate students with an intensive reading of interdisciplinary nature in areas of specific interest.

SSI 6910 DIRECTED RESEARCH
PR: GR. Master's level. Repeatable. (S/U only.)

UNDERGRADUATE COURSES

SOW 3203 INTRODUCTION TO SOCIAL WELFARE (4)
An introductory course in social welfare policy, emphasizing the conceptual basis of social policy formulation, the historical development of social welfare organizations, and various processes related to social policy implementation. Attention is given to economic, political, and social analysis of the development of American social welfare institutions.

SOW 3302 THEORY & PRACTICE OF SOCIAL WORK I (4)
An introductory course to the profession and practice of social work, emphasizing the theoretical and value bases of social work practice. Required prerequisite for admission to the Social Work Program.

SOW 3403 RESEARCH METHODS IN SOCIAL WORK
PR: STA 3122. Restricted to social work majors, others by Program permission. Methods and techniques of social research specifically for social work majors, emphasizing design of studies, collection of data, and interpretation of results. Attention is given to understanding and analyzing specific pieces of research relating to social work.

SOW 4102 BEHAVIOR, ENVIRONMENT, AND PRACTICE
PR: HUS 4020. Restricted to social work majors, others by Program permission. An integrating human behavior-social environment course emphasizing dynamics of behavior and environmental factors as they relate to social work practice. Attention is given to application of knowledge of behavioral phenomena to the practice situation.

SOW 4232 SOCIAL WELFARE: SYSTEMS AND POLICIES
PR: SOW 3203. Restricted to social work majors, others by
Program permission. Advanced social welfare policy course emphasizing contemporary social welfare policies, structures, functions, and programs.

SOW 4341 MULTI-METHODS OF SOCIAL WORK PRACTICE I
PR: HUS 4020, SOW 3203, SOW 3302. SOW 3403 and SOW 4102 may be taken as CR or PR. Restricted to social work majors, others by Program permission. First in a sequence of three practice courses emphasizing the beginning development of skills from practice knowledge. Intervenitive methods with individuals, families, and small groups are emphasized. Some agency field work required.

SOW 4343 MULTI-METHODS OF SOCIAL WORK PRACTICE II
PR: SOW 4341. SOW 4232 may be taken as a CR or PR. Restricted to social work majors, others by Program permission. Second practice course emphasizing interventions at the community and institutional levels. Builds upon a theoretical and practical content of SOW 4341. Some agency field work required.

SOW 4361 THEORY AND PRACTICE OF SOCIAL WORK II
PR: Completion of all social work core courses (or concurrent with completion) except SOW 4510. Restricted to social work majors in Senior year. Others by permission. A course exploring the contributions of the social/behavioral sciences to social work.

Attention is given to various components of social work as objects of analysis in the context of various social science disciplines.

SOW 4510 FIELD PLACEMENT
PR: Completion of all social work core courses except SOW 4361. Restricted to social work majors in Senior year. Supervised field placement in a social welfare organization consisting of 35 hours per week in the field and 3 hours per week in an integrated practice seminar which constitutes the third and final course in the practice sequence.

SOW 4905 DIRECTED RESEARCH
PR: Completion of four social work courses including SOW 3403, upper division standing, and Program permission. Content dependent upon student interest and ability. A contract will be jointly developed by student and instructor specifying nature of work to be completed and approved by Program Director. May be repeated up to 12 credit hours.

SOW 4930 VARIABLE TOPICS IN SOCIAL WORK
PR: SOW 4341. Restricted to Social Work majors, others by Program permission. Course is taken as an elective. Variable title courses will selectively expand on the four sequence areas in the Social Work core curriculum (Social Welfare Policy and Services, Social Work Practice, Social Research Courses, and Human Behavior and Social Environment) and focus more minutely on specific areas relevant to the student's educational plan. May be repeated in varying topical areas.

SOCIETY


UNDERGRADUATE COURSES

DHE 4101 POPULATION
PR: SOC 2000 or CI; upper division standing. Sociological determinants of fertility, morality, and migration; theories of population change.

MAP 2001 MARRIAGE
Study of pre-marital and marital relations. Social, cultural, and personal factors related to success and failure in mate selection and marriage. Does not count for sociology major credit.

MAP 3501 THE FAMILY
PR: SOC 2000 or CI. Principles of family organization, social adjustment, and control. Maturation, socialization, and stability of the family.

SOC 1020 CONTEMPORARY SOCIAL PROBLEMS
Application of sociological concepts and principles to the description and analysis of major social problems of modern societies. Does not count for sociology major credit.

SOC 2000 INTRODUCTION TO SOCIOLOGY
Nature and application of sociological concepts, theories, and methods; analysis of societies, associations and groups; social processes and social change.

SOC 2484 CAREERS IN SOCIOLOGY
PR: One course in sociology. An examination of sociology as a career base and as a basis for general education. Employment opportunities, occupational skills taught in the several courses, and other useful aspects of sociology will be discussed. Description of the several subfields of specialization and a brief introduction to the courses taught in the department will lead to the student's making a tentative program schedule for his major. The value of sociology to the individual as a self-actualizing person of unique worth will be stressed. (S/U only.)

SOC 3211 SOCIOLOGY OF RELIGION
PR: SOC 2000 or CI. Types, sources, and functions of religious behavior. Religious behavior in relation to other aspects of personality and culture.

SOC 3410 SOCIAL STRATIFICATION
PR: SOC 2000 or CI. Social status and social stratification, social class as a factor in behavior, social mobility.

SOC 3422 SOCIAL ORGANIZATION
PR: SOC 2000 or CI. Social organization in the broadest sense, including institutions and associations, as well as variations in role and status.

SOC 3500 SOCIAL INVESTIGATION

SOC 3612 FOUNDATIONS OF THEORY
PR: SOC 2000 or CI. Consideration of selected theories in sociology and procedures of systematic theory construction.

SOC 3695 COMMENTARY FILM MAKING IN THE SOCIAL SCIENCES
PR: Major in the College of Social and Behavioral Sciences and CR in an upper division course. For students majoring in some other college, approval by major professor and instructor of course are both required, but concurrent registration in one of the social and behavioral science courses is maintained. The consideration of the theoretical and technical requirements for expressing social science concepts and propositions on film. Film planning, camera techniques, editing silent film, and the utilization of the independent sound (tape cassettes) in the commentary film. Ethics of film making.

SOC 3696 LABORATORY WORK IN COMMENTARY FILM MAKING IN THE SOCIAL SCIENCES
PR: SOC 3695, CR in a course in the social and behavioral sciences with instructor's approval to enable student to make a film in lieu of some other course requirement. A continuation of lab and field work in the making of commentary films. Camera, editorial and problems of independent sound solved in the context of making a film in one of the social sciences. Does not count for sociology major credit. May be repeated for a maximum of six credits. (S/U only.)
SOC 3745 RACIAL AND ETHNIC RELATIONS (4)
PR: SOC 2000 or CI. Comparative study of interracial relations, social tensions, attitudes, and modes of adjustment in various areas of the world.

SOC 3800 SOCIAL PSYCHOLOGY (4)
PR: PSY 2012 or SOC 2000. Behavior of the individual human being as affected by social and cultural influences of modern society.

SOC 4130 JUVENILE DELINQUENCY (4)
PR: SOC 2000 or CI; upper division standing. Theories of delinquency, patterns of delinquent behavior, methods of control and treatment.

SOC 4150 CRIMINOLOGY (4)
PR: SOC 2000 or CI; upper division standing. Etiology of criminal behavior; law enforcement, crime in the United States; penology and prevention.

SOC 4221 POLITICAL SOCIOLOGY (4)
PR: SOC 2000 or CI. An examination of the social factors that affect government, politics, and political behavior.

SOC 4261 SOCIOLOGICAL IMPLICATIONS OF INDUSTRIALIZATION (4)
PR: SOC 2000 or CI. Socio-cultural elements which define and accompany the process of industrialization as observed in mature industrial nations.

SOC 4316 URBAN SOCIOLOGY (4)
PR: SOC 2000 or CI; upper division standing. The social structure of the community in modern industrial societies. Analysis of community change.

SOC 4402 SOCIETY IN TRANSITION (4)
PR: Introduction to Sociology and upper level standing. An analysis of the forces for change in contemporary society, utilizing a sociological perspective.

SOC 4531 COMPUTERS IN SOCIOLOGICAL RESEARCH (3)
PR: COC 3300 and STA 3122 or equivalent. Introduction to the uses of computers in sociological research. Major emphasis is upon the use of statistical packages (principally SPSS) in data analysis.

SOC 4651 SOCIOLOGY OF THE ARTS (4)
PR: SOC 2000 or CI; upper division standing. The creation, distribution and use of arts from a sociological perspective; the social roles involved.

SOC 4850 COLLECTIVE BEHAVIOR (4)
PR: SOC 2000 or CI; upper division standing. Study of the development of group and mass behavior—crowds, social movements.

SOC 4910 INDIVIDUAL RESEARCH (1-4)
PR: Four courses in sociology, including SOC 3500, upper division standing or CI. Content dependent upon interest and competence of student. A contract specifying the work to be done must be completed and signed by both the student and the faculty member and filed with the chairperson of the department before registration for this course will be permitted. Repeatable. Does not count for sociology major credit.

SOC 4930 TOPICS IN SOCIOLOGY (4)
PR: 16 quarter hours in Sociology and prior CI. May be repeated for credit. See class schedule for content.

SOC 4935 SENIOR SEMINAR (4)
For seniors majoring in sociology or other social sciences. Major issues in sociology, stressing theory and research.

GRADUATE COURSES
MAF 6621 FAMILY ANALYSIS (4)
PR: Course in Family or CI. Theory of interpersonal relations and interaction in the modern family. Analysis of functions and roles.

SOC 5265 INDUSTRIAL SOCIOLOGY (4)
PR: SOC 2000 or CI; upper division standing. Interaction, communication and authority in economic organizations; the factory as a social system.

SOC 5405 SOCIAL CHANGE (4)
PR: SOC 2000 or CI; upper division standing. Major theories of social and cultural change, and mechanisms of change in various societies.

SOC 5804 SOCIAL INTERACTION (4)
PR: SOC 3800 or CI; upper division standing. Interpersonal influence, complex behavior, role, conflict, and social situational factors.

SOC 5825 SOCIOLOGY OF SMALL GROUPS (4)
PR: SOC 2000 or CI; upper division standing. Theory of small group structure, mechanics of interaction, observation of small groups.

SOC 6106 DEVIANCE & CONTROL (4)
PR: Course in criminology or juvenile delinquency or CI. Theories of control and deviance with research application in problem areas.

SOC 6302 COMMUNITY ANALYSIS (4)
PR: Course in Urban Sociology or CI. Theories of community and community organization. Methods of community study; problems of urban areas.

SOC 6426 COMPLEX ORGANIZATIONS (4)
PR: Course in Social Organization or CI. Organizational theory, bureaucratic models, authority, power legitimation, and types of formal organization.

SOC 6502 METHODS OF RESEARCH (4)
PR: Course in Social Investigation or CI. Logic and practice of research; problems of observation and data collection, data processing, and evaluation.

SOC 6526 SOCIOLOGICAL STATISTICS (5)
PR: STA 3122 or CI. Logic and application of parametric and nonparametric statistical analysis for sociological data.

SOC 6606 CONTEMPORARY SOCIOLOGICAL THEORY (4)
PR: Undergraduate course in sociological theory or CI. Emphasizes logical and conceptual dimensions of theory and theory construction.

SOC 6699 THE COMMUNICATION OF SOCIOLOGY (2)
PR: SOC 6502, SOC 6526, SOC 6606, or CI. Designed to help students define and formalize more effective efforts at communicating sociology. Majors only.

SOC 6805 SOCIAL PSYCHOLOGY SEMINAR (4)
PR: Course in Social Psychology or CI. Stresses contemporary developments in social psychological theory and empirical research.

SOC 6999 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

SOC 6912 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

SOC 6933 SPECIAL TOPICS-SOCIOLOGY (4)
PR: CI. Content varies according to interests of students and instructor. May be repeated for credit.

SOC 6971 THESIS: MASTER'S (var.)
Repeatable. (S/U only.)
THEATRE

Chairperson: N. Cole; Professor: P. B. O'Sullivan, Associate Professors: J. W. Belt, N. B. Cole, W. A. Lorenzen, P. Massie; Assistant Professor: W. K. Fauser; Instructor: D. K. Williams; Lecturer: M. A. Bentley; Visiting Associate Professor: A. Lithgow; Visiting Artist: Sergei Ponomarov; Teaching Affiliates from the Fine Arts Events: P. Finelli, E. Mecham; Courtesy Faculty: L. Kotler.

UNDERGRADUATE COURSES

THE 2020 THEATRE FUNDAMENTALS (2)
An introduction to the means and materials of theatre, the nature of theatre forms, the concepts of Total Theatre, and the basic issues in American theatre today. This course is open to non-majors and theatre majors should take this course concurrently with their first registration in the group of courses TPA 2200, TPA 2223, TPP 2110. Required of all theatre majors.

THE 3080C MODERN THEATRE PRACTICE (5)
Initial readings and exercises in theatre; play analysis, performance, and technical theatre for non-theatre majors.

THE 3110 THEATRE HISTORY I (3)
A survey of significant periods in world theatre from the beginning up to 1700. Six selected representative plays will be read. Required of all theatre majors. Open to non-majors.

THE 3111 THEATRE HISTORY II (3)
PR: THE 3110 or equivalent or Cl. A survey of significant periods in world theatre from 1700 to the present. Six selected representative plays will be read as well. Required of all theatre majors. Open to non-majors.

THE 3925 PERFORMANCE (1)
The study, rehearsal, and performance of major theatrical works. Open to all University students by audition on a credit or non-credit basis. May be repeated. Additional appropriate credit may be earned with THE 4905 or THE 5909.

THE 4180 THEATRE ORIGINS (5)
PR: Completion of first three years as a theatre major and one from the following: THE 4320, THE 4330, THE 4370, THE 4401, THE 4442, THE 4480, or Cl. An analysis of the development of theatre out of myth, ritual, and liturgy. Emphasis will be placed on what subsequent attempts to understand the resulting phenomena can teach us about the nature of our art. Required of all theatre majors.

THE 4264 HISTORY OF CLOTHING AND DECOR (3)
PR: Completion of 2000-level theatre laboratory requirements for theatre majors or Cl. Required of all theatre majors and courses with a design and technology concentration. A survey of clothing and dress from Ancient Egypt to the 20th Century with an emphasis on cultural and social influences.

THE 4266 HISTORY OF ARCHITECTURE AND DECOR (3)
PR: Completion of 2000-level theatre laboratory requirements for theatre majors or Cl. The survey of architectural and decorative motifs and decor and their stylistic concepts. Required for majors in Design-Tech track.

THE 4320 THE THEATRE OF MYTH AND RITUAL/NORTHERN EUROPEAN (950-1600) AND ORIENTAL (400-1800) (4)
PR: THE 3110 or THE 3111. An investigation into the interrelationship of myth, ritual, and theatre event. Enables the student to analyze these scripts in light of their present producibility and past cultural energy. Open to non-majors.

THE 4330 SHAKESPEARE FOR THE THEATRE (4)
PR: THE 3110 or THE 3111 (for theatre majors). Study of several of Shakespeare's plays from the histrionic point of view. "No sort of study of a (Shakespearean) play can better the preparation of its performance if this is rightly done."—Harley Granville-Barker. Open to non-majors.

THE 4370 THE 19TH CENTURY THEATRE REVOLUTION (4)
Survey of materials in the Continental, English, & American Stage dating from 1870. Deals with the extraordinary playwrights and new theatre movements.

THE 4401 O'NEILL AND AFTER (4)
PR: THE 3110, THE 3111, or Cl. Survey of materials in the American Theatre from the writings of Eugene O'Neill to the present.

THE 4442 THE COMEDY OF THE CLASSIC AND NEO-CLASSIC STAGE (4)
PR: THE 3110, THE 3111, or Cl. A course in the function of the script for the active theatre artist, treating materials from the Ancient Greeks through the Restoration, giving some attention to later reflections.

THE 4480 DRAMA — SPECIAL TOPICS (4)
PR: THE 3110, THE 3111, or Cl. A course in the function of the script for the active theatre artist treating materials of a single playwright. Repeatable with consent of adviser and change in topic. Only four hours will be counted toward major requirements, but other hours may be counted toward elective.

THE 4562 SENIOR COLLOQUIUM IN THEATRICAL CREATIVITY (3)
PR: THE 4180. A colloquium in the nature of the synthesized theatre object. Required of all theatre majors. Open to non-majors with Cl.

THE 4900 DIRECTED READING (1-6)
PR: Cl. and CC. Readings in a topic of special interest to the student. Selection of topic and materials 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 topics only.

THE 4905 DIRECTED STUDIES (1-6)
PR: CC. Independent studies in the various areas of Theatre. Course of study and credits must be assigned prior to registration.

THE 4927 ADVANCED PERFORMANCE (1)
PR: THE 3925 or Cl. The study, rehearsal, and performance of major theatrical works. Admission by audition. May be repeated. Additional credit may be earned with THE 4905 or THE 5909.

THE 4930 SELECTED TOPICS IN THEATRE (1-12)
PR: Cl. The content of the course will be governed by student demand and instructor interest. May be lecture or class discussion or studio format. May be repeated for credit for different topics only.

TPA 2200 STAGECRAFT (3)
The scenic materials and skills basic to theatrical production. An introductory course. Has a production commitment. Required of all theatre majors. Open to non-majors.

TPA 2223 STAGE LIGHTING AND COSTUME (3)
The fundamental materials and skills used in lighting and costuming stage productions. May be used as a theatre lab requirement for majors. Open to non-majors.

TPA 2250 WORKSHOP IN STAGE MAKEUP (1)
Beginning theory and practice in makeup for the stage. Theatre majors given preference. A studio course. Required for theatre majors.

TPA 2400 THE ART OF MANAGING THE ARTS (3)
An overview of the administrative role required in the arts—examining all media in their historic and topical references. The course will survey the basic areas of administrative, production and stage management. May be used as a theatre lab requirement for theatre majors. Open to non-majors.

TPA 3086 MEANS OF VISUAL EXPRESSION (4)
PR: Completion of the four 2000-level courses. The study of presentation techniques for visual design and technology as
applied to the development of visual dynamics. Required of all theatre majors. Open to non-majors with CI.

**TPA 3601 STAGE MANAGEMENT**
PR: Completion of a lower level concentration in theatre. A practical course in the working organizational function of the stage manager in theatre, dance, opera, and other live performance situations. Required of all theatre majors.

**TPA 3810 INTRODUCTION TO PUPPETRY**
PR: Completion of all four 2000-level courses. Open to non-majors with CI. Principles and methods of puppetry with a historical survey of major forms and practical problems with laboratory production.

**TPA 3820 PUPPETRY PRODUCTION**
PR: TPA 3810. Open to non-majors with CI. The creation, building, and rehearsal of plays for puppet theatre in preparation for performance. It is strongly urged that members of this class enroll in Puppetry Performance in the quarter immediately following. May be repeated one time for additional elective credit, with CI, to a total of eight hours.

**TPA 3840 PUPPETRY PERFORMANCE**
PR: TPA 3820. Open to non-majors with CI. Experience in the production and presentation of play for the puppet theatre. Follows directly from the course in Puppetry Production and must be taken the quarter immediately following that course. May be repeated one time for additional elective credit, with CI, to a total of eight hours.

**TPA 4010, 4011 DESIGN I AND DESIGN II (COSTUME, SCENERY, AND LIGHTING)**
PR: THE 4266 and THE 4264 plus TPA 4230, or TPA 4285, or TPA 4211, depending on tech-design emphasis. The aesthetic and practical application of the elements of design in lighting, scenery, and costume for the theatre presentation.

**TPA 4012 PROJECT DESIGN: HONORS**
PR: At least two sections of TPA 4010 and one section of TPA 4011. A workshop for students in scenery, lighting, and costume design admitted only by recommendation of instructor and review of portfolio. Consideration will be given to the requirements of integrating the design for setting, costumes, and lights; under special circumstances may be credit for actualized production design.

**TPA 4052 DRAWING — FIGURE**
PR: Completion of second year requirements for the theatre major and portfolio or CI. Drawing the human form and fabrics with an emphasis for the costume designer.

**TPA 4071 DRAWING — ARCHITECTURAL**
PR: Completion of 2000-level theatre laboratory requirements for theatre majors and portfolio or CI. A course in rendering the inanimate form.

**TPA 4081 SCENE PAINTING**

**TPA 4083 SPECIAL PROJECTS FOR PRODUCTION**
PR: THE 4264, THE 4266, plus any three of TPA 4052, TPA 4071, TPA 4211, TPA 4230, TPA 4285. An individually designed course of study tailored for the student's advanced work in technology and design.

**TPA 4211 STAGECRAFT II**
PR: For theatre majors, completion of 2000-level theatre laboratory requirements, including TPA 2200. A practical course in drafting for the stage and scene construction and application. A requirement in the Tech Design track/Scenic. Open to non-majors.

**TPA 4230 COSTUME CONSTRUCTION I**
PR: Completion of 2000-level theatre laboratory requirements for theatre majors or CI. A practical course in costume drafting of workable patterns for costuming the actor.

**TPA 4231 COSTUME CONSTRUCTION II**
PR: TPA 2223 or CI. Materials, skills and techniques for construction of costume accessories for stage. Included topics are millinery, footwear, jewelry, masks, armor, corsetry; both period and modern.

**TPA 4240 STAGE PROPERTIES: TECHNIQUES AND MATERIALS STUDIO**
Demonstration and experience with comparatively newer materials used in construction of stage properties. Modeling of prototypes and basic casting techniques. Organization of shop.

**TPA 4281 PRACTICUM IN TECHNICAL SUPERVISION**

**TPA 4285 AUDIO-VISUAL APPLICATIONS FOR THE STAGE**
PR: Completion of 2000-level theatre laboratory requirements for theatre majors, including TPA 2223. A study of basic electrical and electronic systems of sound and light control. Optical principles of projection and light transmission will be included to establish skills in the use of projected scenery. Analysis of amplification and recording techniques and technology, and the study of acoustical characteristics will prepare the student for a design of production sound systems. Open to non-majors.

**TPA 4402 THEATRE MANAGEMENT WORKSHOP**
PR: Completion of an upper level concentration in theatre. The study of management relations for the theatre, including all fields of management from box office to publicity.

**TPP 2110 VOICE IMPROVISATION**
PR: Exploring the elements basic to acting skills—a participation course. May be used as a theatre lab requirement for majors. Open to non-majors.

**TPP 2500 BODY DISCIPLINES**
A laboratory course in various disciplines or systems in controlling and understanding the body's motive powers. Mime, pantomime, combat forms, meditational exercises useful for the stage performer will be studied. May be used as a theatre lab requirement for theatre majors. Open to non-majors.

**TPP 3111 WORKSHOP FOR TEXT ANALYSIS**
PR: Completion of the four 2000-level courses. The techniques of textual and script analysis related to the composition of performance. Required of all theatre majors. May be taken by non-majors with CI.

**TPP 3121 IMPROVISATION I**
PR: Completion of all four 2000-level courses and/or CI; audition required. Open to non-majors. An intensive study in Improvisation as an enhancement of the actor's skills. Exercises and theatre games as flexible forms which accommodate improvisation and physical invention are examined and used to develop group creativity.

**TPP 3122 IMPROVISATION II**
PR: TPP 3121 and/or CI; audition required. Open to non-majors. A concentrated study of advanced techniques in improvisational skills as applied to the use of scenario. Depending on ensemble capabilities, the course will culminate in a classroom improvisational presentation.

**TPP 3235 THEATRE FOR SPECIAL AUDIENCES**
PR: Completion of all four 2000-level courses and/or CI. Open to non-majors. The preparation of a production for a special audience (ethnic, children, aged, institutionalized, etc.). Those enrolled would be expected to continue with TPP 3236. With CI, may be repeated one time as additional elective credit (total of eight hours).
TPP 3236 PERFORMING THEATRE FOR SPECIAL AUDIENCES (4)
PR: TPP 3235 (preceding quarter) and/or CI. The presentation of production for a special audience (ethnic, children, aged, institutionalized, etc.). Follows directly from TPP 3235 and must be taken in the quarter immediately following that course. With CI, may be repeated one time as elective credit (total of eight hours).

TPP 3510 SPECIAL SKILLS IN MOVEMENT (3)
PR: Completion of the four 2000-level courses. Stage violence, circus and acrobatic techniques, and other special techniques of movement. Repeatable for credit. Required for majors in the performance track.

TPP 3790L VOICE PREPARATION FOR THE ACTOR (3)
PR: Completion of the four 2000-level courses. A laboratory in corrective speech and voice production for the actor. Repeatable for credit. Required for majors in the performance track.

TPP 4140 ACTING III (4)
PR: TPP 4150 and audition or TPP 4151 or TPP 4152. Methodology and styles. Examination of the actor's craft and skills needed to fulfill the demands of various theatre forms. Special attention will be paid to the history of acting styles. Required of all theatre majors with a performance concentration.

TPP 4150 ACTING I (4)
PR: TPP 3111 and audition. Basic scene study. Special problems in movement and speech to be integrated with character development, rehearsal techniques, and performance composition. Required of all theatre majors with a performance concentration.

TPP 4151 ACTING II (4)
PR: TPP 4150 and audition or TPP 4140 or TPP 4152. Intermediate scene study. Special attention given to dialects and period movement. Required of all theatre majors with a performance concentration.

TPP 4152 ACTING IV (4)
PR: TPP 4150 and audition or TPP 4140 or TPP 4151. A workshop in the classic repertory. Advanced scene study. Required of all theatre majors with a performance concentration.

TPP 4180 ACTING V (4)
PR: TPP 4152. Honors section in acting; admittance by competitive audition. The aesthetics of acting. The various theories of the art. A studio course.

TPP 4220 AUDITION WORKSHOP FOR THE ACTOR (4)
PR: TPP 4140 and TPP 4151. Preparation for professional audition; discussion of professional objectives.

TPP 4230L LABORATORY WORKSHOP IN PERFORMANCE (4)
PR: TPP 3111 and/or CI. Special workshop in advanced techniques based upon individual problems and needs. May be repeated twice (to a total of 12 hours credit).

TPP 4250 MUSIC THEATRE WORKSHOP (4)
PR: TPP 3111. Special problems in acting as applied to the musical theatre.

TPP 4310,4311 DIRECTING I,II (4,4)
PR: Completion of the first two years as a theatre major and CI. An elective sequence in directing. A workshop course in which the student first encounters the basic tasks of the director by preparing and directing one or two scenes and then progresses to more complex scene work in a variety of styles and finally proceeds to the short play or theatre pieces.

TPP 4610,4611 WRITING FOR THE THEATRE I,II (4,4)
PR: Completion of the first two years as a theatre major and CI. An elective sequence in writing for the theatre, starting with explorations of theatre as a medium, exercises in theatre form and techniques and progressing to an advanced workshop in plays and other styles of theatre pieces.

TPP 4920 SENIOR WORKSHOP FOR ACTORS (1-4)
PR: TPP 4140, TPP 4151 and audition. A coaching workshop in individual problems. Enrollment requires contracted study.

GRADUATE COURSES

THE 5902 DIRECTED READING (1-6)
PR: CI and CC. Readings in topics of special interest to the student. Contract defining scope of project, materials used, expected results and credit hours assigned must be completed prior to registration. May be repeated for different topics.

THE 5909 DIRECTED STUDIES (1-9)
PR: CC. Independent studies in the various areas of Theatre. Course of study and credits must be assigned prior to registration.

THE 5931 SELECTED TOPICS IN THEATRE (1-12)
PR: CI. The content of the course will be governed by student demand and instructor interest. May be lecture or class discussion or studio format. May be repeated for credit for different topics only.

WOMEN’S STUDIES PROGRAM

Director: J. H. Williams; Professor: J. H. Williams; Associate Professor: J. B. Snook; Assistant Professors: M. M. Ferrandino, J. O. Ochshorn.

UNDERGRADUATE COURSES

ANT 3302 WOMEN IN CROSS-CULTURAL PERSPECTIVE (4)
PR: ANT 2000, WST 2010 or CI. Roles of women in selected cultures, with emphasis on Third World and primitive societies. Examples from least to most differentiated cultures. Influence of family models, kinship systems, economic patterns, political structure, and belief systems. (Also offered under Anthropology.)

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 ways schools have helped to shape the role women play in American society. Topics include development of sex-role stereotypes through classroom interac-

tions 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 is placed on ways parents and teachers may counteract the sex-typing which schools, as they are currently structured, perpetuate. (Also offered under Education.)

LIT 3414 THE IMAGE OF WOMEN IN LITERATURE I (5)
A study of feminism, antifeminism, sexual identity, the feminine mystique, stereotyped and liberated female images from Sappho through Shakespeare, with special emphasis on how this early literature has perpetuated cultural myths, rituals, superstitions, and misconceptions about women. (Also offered under English.)

LIT 3415 THE IMAGE OF WOMEN IN LITERATURE II (5)
A study of feminism, antifeminism, sexual identity, the feminine mystique, stereotyped and liberated female images from the 17th century to the present, with special emphasis on women writers
and on the emergence of the women's movement. (Also offered under English.)

**POS 4693 WOMEN AND LAW** (4)
Issues concerning the legal aspects of sex and sex-based discrimination as embodied in statutory and case law. Open to majors and non-majors. (Also offered under Political Science.)

**SOP 4742 PSYCHOLOGY OF WOMEN** (4)
An examination of theories of female personality. Concepts of personality theory regarding sex differences, differential socialization, and sex-typed behavior. Particular attention to research on achievement motivation, cognitive, perceptual, and motor performance differences, and to developmental tasks of women in our society. (Also offered under Psychology.)

**SOP 4772 HUMAN SEXUAL BEHAVIOR** (4)
The dynamics of human sexuality including biological, constitutional, cultural, and psychological aspects. Exploration of the range of sexual behavior across groups. Sources of beliefs and attitudes about sex, especially female sexuality, current status. Interdisciplinary faculty. (Also offered under Psychology.)

**WST 2010 INTRODUCTION TO WOMEN'S STUDIES I** (4)
A survey of major issues relevant to the female experience: the women's movement; social, historical, and psychological implications.

**WST 2011 INTRODUCTION TO WOMEN'S STUDIES II**
PR: WST 2010 or CI. A survey of major issues relevant to the female experience, marriage and the family, sexuality, the economy and professions, art and creativity.

**WST 3210,3220,3240 WOMEN IN WESTERN CIVILIZATION** (4,4,4)
PR: WST 2010 or CI. Interdisciplinary and comparative study of women in Western civilization, with particular emphasis on the historical courses and evolution of antifeminist attitudes in selected societies. WST 3210: Pre-Biblical period through the Middle Ages. WST 3220: Renaissance through the eighteenth century. WST 3240: Nineteenth and twentieth centuries.

**WST 3270 CONTEMPORARY WOMEN IN THE UNITED STATES** (4)

**WST 3310 HISTORY OF FEMINISM** (4)
PR: WST 2010 or CI. The history of the feminist movement in the U.S. and Britain. Women in the rank-and-file of reform in America, including abolitionism, the settlement house movement, labor unions, political revolution in Western society, and Third World liberation. Sources and issues of the women's liberation movement.

**WST 3320 WOMAN'S BODY/WOMAN'S MIND** (4)
PR: Introduction to Women's Studies or CI. The influence of the health care system on the process which socializes people to traditional sex roles.

**WST 3360 MEN AND SEXISM** (4)
This course deals with the ways in which sex role conditioning affects the lives of men. The factors involved in the development of this conditioning will be studied and alternatives to these sex role models will be discussed as well.

**WST 4900 DIRECTED READINGS** (1-4)
PR: CI plus upper division standing. To provide advanced students with intensive reading of interdisciplinary nature in areas of specific interest. May be repeated up to eight credit hours.

**WST 4910 DIRECTED RESEARCH** (1-4)
PR: CI plus upper division standing. To provide advanced students with interdisciplinary research experience in areas of specific interest. May be repeated up to eight credit hours.

**WST 4930 SELECTED TOPICS** (1-5)
PR: WST 2010 or CI. Study in special areas such as Women and Health, The Aging Woman, and the Professions, Women in the Arts.

**WST 4935 SEMINAR IN WOMEN'S STUDIES** (4)
PR: WST 2010 or CI. In-depth study of research in one or more areas of topical interest to students and staff. Research involvement by students required.
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Center for Urban Economics and Management Studies

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Chairpersons

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Art & Music Education
Childhood & Language Arts Education
Educational Leadership (Acting)
Exceptional Child Education
Guidance
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Mathematics Education
Measurement & Research
Psychological & Social Foundations
Reading Education
Science & Health Education
Social Science/Letters

College of Engineering

Dean
Associate Dean
Chairpersons

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Energy Conversion and Mechanical Design
Structures, Materials, and Fluids
Industrial Systems

Program Contact

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Engineering Technology
Computer Science (Acting)
Chemical Engineering

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Theatre

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Family Medicine ............................. RONALD G. BLANKENBAKER
Internal Medicine .............................. ROY H. BEHNKE
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Obstetrics and Gynecology .................... JAMES M. INGRAM
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Pathology ........................................ REGINALD MASON
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Chairpersons

Astronomy ........................................ HEINRICH K. EICHORN
Biology .......................................... STEWART L. SWIHART
Chemistry ...................................... TERENCE C. OWEN
Geology .......................................... RICHARD A. DAVIS, JR.
Marine Science (ACTING) ..................... JOHN C. BRIGGS
Mathematics ..................................... MANOUG N. MANOUGIAN
Physics ............................................ NORMAN L. OLSON

Directors

Astronomical Observatory ................... EDWARD J. DEVINNEY
Botanical Gardens ............................. FREDERICK B. ESIG
Herbarium ....................................... RICHARD P. WUNDERLIN

College of Nursing

Dean .................................................. GWENDOLINE R. MAC DONALD
Assistant Dean .................. CANDACE BURNS
Curriculum B Coordinator ............. FRIEDA CARBONELL
Director of Outreach Programs ........ S. JOAN GREGORY

College of Social and Behavioral Sciences

Dean .................................................. TRAVIS J. NORTHCUTT, JR.
Associate Dean .................. GILBERT KUSHNER
Associate Dean .................. SUSAN STOUDINGER
Coordinator of Advising .................. STEPHEN BROWN
Chairpersons

Anthropology ................................ GILBERT KUSHNER
Communicology ............................... STEWART KINDE
Criminal Justice (ACTING) ............... WILLIAM BLOUNT
Economics (ACTING) ......................... JOHN COOKE
Geography ...................................... JOHN STAFFORD
History (ACTING) ............................ LOUIS PEREZ
Interdisciplinary Social Sciences ......... MARK ORR
Political Science .................. JAMIE JREISAT
Psychology ..................................... JAMES ANKER
Sociology ....................................... ROY FRANCIS

Directors

Afro-American Studies Program .......... FESTUS OHAGBULAM
Aging Studies Program ...................... Thomas Rich
International Studies Program ........... MARK ORR
Off-Campus Term Program .............. KEITH LUPTON
Rehabilitation Counseling Program ..... CALVIN PINKARD
Social Work Program (ACTING) .......... PHILIP SMITH
Women's Studies Program ............. JUANITA WILLIAMS

ADMINISTRATIVE AFFAIRS

Vice President ........................ KEITH L. SCOTT
Assistant Vice President .............. ROBERT E. WALLACE
Special Assistant for Equal
Opportunity .......................... WILLIE S. THARPE
University Comptroller .................. ERIC L. WALDEN
Director, Auxiliary Services .......... TOMMY R. BERRY
Director, Regional Data Center ........ HOWARD R. STEELE
Director, University
Personnel Relations ............ THEODORE J. WOLOSON
Director, Physical Plant ............. CHARLES W. BUTLER
Director, Procurement ............. KEITH SIMMONS
Director, University Safety
and Security ....................... PAUL A. URAVICH

FINANCE AND PLANNING

Vice President ........................ ALBERT C. HARTLEY
Assistant Vice President ............ GLENNDON E. CLAYTON
Director, Facilities Planning ........ MICHAEL H. PATTERSON
Director, Space
Utilization and Analysis .......... LILLIAN YORKS ANDERSON
Director, University Budgets ........ RICKARD C. FENDER
Director, Institutional Research .......... DONALD J. ANDERSON

STUDENT AFFAIRS

Vice President ........................ DANIEL R. WALBOLT
Assistant Vice President (ACTING) . CHARLES F. HEWITT
Assistants to Vice President .......... TROY L. COLLIER
Director of Planning .......... LAWRENCE E. SCOTT

Director of Divisions

Student Publications ...................... LEO STALNAKER
Financial Aids ............................ GEORGE H. GOLDSMITH
Housing and Food Service ............ RAYMOND C. KING
Physical Education, Recreational
Sports & Athletics .................. RICHARD T. BOWERS
Cooperative Education and Placement .... GLENDA F. LENTZ
Student Health Service .............. LARRY E. STEVENS
University Center .................. PHYLLIS P. MARSHALL
University Studies ..................... MAX C. DERTKE
Academic Advising Coordinator ...... JANE G. REED
Admissions ............................... ROBERT LEVITT
Counseling Center ....................... WILLIAM ANTON
New Student Relations ............ LINDA ERICKSON
Veterans Affairs ....................... G. ROBERT JEFF, JR.
Associate Director, Branch Campuses .......... RUSSELL BURR

REGIONAL CAMPUS AFFAIRS

Administrator & Dean (ACTING) .......... LESTER W. TUTTLE, JR.
Assistant Administrator ................ HERMAN J. BRAMES
Director, Continuing Education .......... J. RICHARD BRIGHTWELL
Director, Bachelor of Independent
Studies .............................. KEVIN E. KEARNY

St. Petersburg Campus

Director (ACTING) .................. DAVID R. KENNERSON
Center Administrator ................ DONALD A. HANEY
University Librarian ............... DORIS C. COOK
Extension Library .................. OSBORNE L. GOMEZ
Fort Myers Campus
Director ........................................... ROY I. MUMME
Associate Librarian ............................... JEAN R. ANDERSON

Sarasota Campus
Director (Acting) ................................. LESTER W. TUTTLE, JR.
Director, Administrative Affairs ................ CHARLES C. HARRA
Director, Student Affairs ........................ DALE W. HARTMAN
Director, New College Admissions ............... MILDRED P. ELLIS
Director, Records and Registration .............. NANCY E. FERRARO
Director, Public Affairs .......................... FURMAN C. ARTHUR

New College of USF
Provost (Acting) .................................... GEORGE H. MAYER
Chairpersons
Humanities ........................................... DAVID E. DYESTRA
Natural Sciences .................................... PETER F. BURI
Social Sciences ..................................... LASZLO DEME

Coordinators
Off-Campus Studies ............................... NATALIE ROSEL
Environmental Studies Program .................. JOHN B. MORMILL
FACULTY AND ADMINISTRATIVE STAFF

All members of the University of South Florida faculty and administrative staff, including teaching, research, administrative and professional personnel are listed below in alphabetical order. The listing includes name, current rank and field, first year of continuous appointment to any position in the institution, degrees, and institution and year of terminal degree, as of December 31, 1977. (A semicolon between degrees indicates different institutions).

ABBREY, WALTER R. ................. Lecturer (Engineering), 1966
B.S.M.E., Tri-State College, Indiana, 1938

ABRAM, JACQUES .................. Professor (Music), 1963
Diploma with Distinction, Juilliard School of Music, 1938

ACKERMAN, DORIS J. .............. Assistant University Librarian (Libraries), 1969
B.A.; M.S., Rutgers, 1969

ADAMS, PATRICIA B. ............ Instructor (Nursing), 1976
B.S.N., M.N., University of Florida, 1974

ADAMS, PATRICIA W. ............ Counselor and Adviser
(University Studies, Student Affairs), 1965

ADDISON, LINDA B. ........... Visiting Instructor (Exceptional Child Education), 1976
B.S.; M.A., University of South Florida, 1975

AGRESTI, DAVID L. .............. Instructor (Criminal Justice), 1973
B.A.; M.S., Florida State University, 1971

AHMED, NASIM ................. Instructor (Surgery), 1975 (Part time)
B.S.; M.D., Dow Medical College, Karachi, Pakistan, 1965

AHRENS, VICKI W. .............. Student Affairs Coordinator
(University Studies, Student Affairs), 1974
B.A., M.A., University of South Florida, 1975

AKINS, DANIEL L. .............. Associate Professor (Chemistry), 1970
B.S.; Ph. D., University of California, Berkeley, 1968

ALEXANDER, LUELLA K. ........ Visiting Lecturer (Sociology), 1972
B.S.; M.S., Ohio State University, 1966

ALEXANDER, MICHAEL D. ......... Clinical Psychologist (Counseling), 1975 Sarasota Campus
B.S., M.A., Ph.D., Ohio State University, 1972

ALLEN, EDMUND E. ............. Associate Professor
(Interdisciplinary Social Science), 1964
B.S.; M.S.; Ed. D., University of Florida, 1964

ALLEN, HAROLD C. .......... Assistant Professor (Management), 1967
B.A.; M.B.A., Ph.D., University of Florida, 1969

ALLEN, JAMES L. .............. Professor (Engineering), 1972
B.E.E., M.S.E.E., Ph.D., Georgia Institute of Technology, 1966

ALTOLE, PHILIP .................. Assistant Professor (Internal Medicine), 1976
A.B.; M.D., State University of New York, Upstate Medical Center, 1971

ALVAREZ, MARVIN R. ........... Professor (Biology), 1966
B.S., M.S., Ph.D., University of Florida, 1964

ANDERSON, PHILIP H. ....... Assistant Professor (Surgery), 1974 (Part time)
B.S.; M.D., Marquette University, 1964

ANDERSON, DONALD J. .......... Director (Institutional Research), 1967
B.S.; M.A., University of South Florida, 1971

ANDERSON, E. CHRISTIAN ...... Professor (Psychological and Social Foundations Education), 1964
B.S., M.A., Ph.D., University of Michigan, 1964

ANDERSON, EVERETT S. ......... Professor (Music), 1963
B.M., M.M., Illinois Wesleyan University, 1937

ANDERSON, JEAN R. .......... Associate University Librarian (Libraries), 1975 Ft. Myers Campus
B.A.; M.S.L.S., Columbia University, 1961

ANDERSON, LILLIAN YORKS ........ Director (Space Utilization and Analysis), 1964
B.A., University of South Florida, 1977

ANDERSON, LOUIS V. .... Associate Professor (Psychological and Social Foundations Education), 1963
B.A., M.A., Ph.D., George Peabody College, 1966

ANDERSON, MELVIN W. ....... Professor (SMF-Engineering), 1969
B.S., M.S., Ph.D., Carnegie-Mellon University, 1967, P.E.

ANDERSON, MERLIN G. .......... Assistant Professor (Surgery), 1975 (Part time)
B.S.; M.D., Loma Linda University, 1963

ANDERSON, ROBERT L. ...... Associate Professor (Marketing), 1971
B.S., M.S.; Ph.D., North Texas State University, 1971

ANGROSO, MICHAEL V. .......... Associate Professor (Anthropology), 1972
B.A.; Ph.D., University of North Carolina, 1972

ANKER, JAMES M. ... Professor-Chairperson (Psychology), 1974
A.B., M.A., Ph.D., Catholic University of America, 1957

ANTON, WILLIAM D. ........... Associate Director
(Counseling Center, Student Affairs), 1972
B.A., M.A., Ph.D., University of South Florida, 1975

APPLEGATE, MINERVA I. ....... Assistant Professor (Nursing), 1976
B.S.N.; M.Ed., Columbia University Teachers College, 1974

ARNADE, CHARLES W. ........... Professor (Interdisciplinary Social Science), 1961
A.B., M.A., Ph.D., University of Florida, 1955

ARTHUR, FRUMAN C. ........... Director (Public Affairs), Sarasota Campus, 1975
B.A., University of North Carolina, 1948

ARTHUR, RICHARD L. .... Associate Professor (Psychiatry), 1975 (Part time)
B.S.; M.D., Hahnemann Medical College, 1970

ASHFORD, THEODORE A. ........ Professor (Chemistry) and Dean Emeritus (Natural Science), 1960
B.S., M.S., Ph.D., University of Chicago, 1936

AUGER, JOSEPH L. .............. Associate Professor (Physics), 1964
B.S., Ph.D., Michigan State University, 1964

AUCREMMAN, CHARLES E. ....... Associate Professor (Family Medicine), 1975 (Part time)
A.B., M.S., M.D., Emory University School of Medicine, 1943

AUSTIN, LARRY D. .......... Professor (Music), 1972
B.M., M.M., North Texas State University, 1952

AUSTIN, MARTHA L. ....... Professor (Reading Education), 1963
B.A.; M.Ed.; Ph.D., University of Chicago, 1969

AZAR, HENRY A. .............. Professor (Pathology), 1972 (Part time)
B.A., M.D., American University of Beirut, Lebanon, 1952

BABBEL, GARETH R. ............ Associate Professor (Biology), 1972
B.A.; M.B.A., University of Texas, 1970

BAILEY, OSCAR W. .......... Professor (Visual Arts), 1969
B.A.; M.F.A., Ohio University, 1958

BAIRD, RONALD C. .......... Associate Professor (Marine Science), 1969 St. Petersburg Campus
B.S.; M.A.; Ph.D., Harvard University, 1969

BAKER, CARLETON H. .......... Professor-Chairperson (Physiology), 1971
B.A.; M.A., Ph.D., Princeton University, 1955

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Bennett, George K. .............. Professor (Engineering), 1974
B.S.; M.S.; Ph.D., Texas Technological University, 1970

Benson, Andre W. ....... University Physician (Student Health Service, Student Affairs), 1977
B.A.; M.D., University of Florida, 1973

Bently, Joseph G. ....... Professor (English), Director (Graduate Studies), 1961
B.A., M.A.; Ph.D., Ohio State University, 1961

Bently, Mary Ann M. .... Lecturer (Theatre), 1975 (Part time)
B.A., University of South Florida, 1962

Benway, Robert E. ....... Associate Professor (Surgery), 1972 (Part time)
B.S., M.D., University of Miami, Florida, 1957

Berggren, Douglas C. .... Professor (Philosophy), 1975
Sarasota Campus
B.A.; M.A.; M.A., Ph.D., Yale University, 1959

Berkley, Richard J. ....... Assistant Professor (Physics), 1963
B.A., M.S., New Mexico Institute of Mining & Technology, 1955

Berman, Leonard J. ....... Student Affairs Coordinator (Cooperative Education and Placement, Student Affairs), 1977
B.S.; M.S., New York University, 1953

Berry, Tommy R. ........ Directer (Auxiliary Services), 1968
B.A., University of South Florida, 1968

Betz, John V. .......... Associate Professor (Biology), 1963
B.S.C.; Ph.D., St. Bonaventure University, 1963

Betzer, Peter .............. Associate Professor (Marine Science), 1971
St. Petersburg Campus
B.A.; Ph.D., University of Rhode Island, 1971

Beulig, Alfred, Jr. ....... Assistant Professor (Biology), 1975
Sarasota Campus
B.S., M.S.; Ph.D., City University of New York, 1974

Bivilecqua, Jeanette W. .... Assistant Professor (Nursing), 1977
B.S.; M.A.; M.E., Columbia University, 1977

Bidot-Lopez, Pascual .... Assistant Professor (Medicine), 1977 (Part time)
B.S.; M.D., University of Puerto Rico School of Medicine, 1972

Binford, Jesse S., Jr. ....... Professor (Chemistry), 1961
B.A.; M.A.; Ph.D., University of Utah, 1955

Birken, Stanley J. ....... Associate Professor (Management), 1969
B.S.C.; M.S.C.; Ph.D., University of Alabama, 1969

Blair, Raymond C. ........ Visiting Instructor (Measurement and Research Education), 1975
B.A., M.A., University of South Florida, 1972

Blake, Norman J. ....... Associate Professor (Marine Science), 1972
St. Petersburg Campus
B.S.; M.S., Ph.D., University of Rhode Island, 1972

Blank, William E. .... Visiting Assistant Professor (Adult and Vocational Education), 1976
B.S.; M.S., Ph.D., Florida State University, 1976

Blankenbaker, Ronald G. .... Professor-Chairperson (Family Medicine), 1977
B.S.; M.S., M.D., Indiana University School of Medicine, 1968

Blaub, Lili R. .... University Counseling Psychologist, Academic Administrator (Counseling Center, Student Affairs), 1967
B.S.; M.S.; Ph.D., United States International University, 1975

Blau, Theodore ........ Professor (Psychiatry), 1975 (Part time)
B.S.; M.S., Ph.D., Pennsylvania State University, 1951

Block, Sylvan C. ........ Professor (Physics), 1963
B.S., M.S., Ph.D., Florida State University, 1962

Bloomquist, Allen J. .... Associate Professor (Psychology), Coordinator (Campus-wide Scheduling), St. Petersburg Campus
B.S., M.S.; Ph.D., University of Wisconsin, 1960

Blount, William R. .... Associate Professor—Acting Chairperson (Criminal Justice), 1968
B.A.; M.A.; Ph.D., George Peabody College, 1969
BLUDS, PETER A. ........ Associate Professor (French Language and Literature), 1977 Sarasota Campus

B.S.; M.A., Ph.D., Princeton University, 1976

BOLIVAR, JUAN C. ....... Professor (Surgery), 1972 (Part time)

B.S.; M.D.; M.D., University of Paris, Sorbonne, 1940

BOND, JOSEPH C., JR. ....... Professor (Educational Leadership Education), 1965


BORDEN, ARTHUR R. ........ Professor (Literature), 1975 Sarasota Campus

B.S.; M.A., Ph.D., Harvard University, 1950

BORENS, HOLLEY G. ........ Director (Medical Center), Dean (College of Medicine), Professor (Internal Medicine), 1973

B.A.; M.D., Baylor University College of Medicine, 1946

BOSTOW, DARREL E. .......... Associate Professor (Psychological and Social Foundations Education), 1970

B.A., M.A., Ph.D., Southern Illinois University, 1970

BOSTOW, DIANE E. ............ Coordinator (Economic Education Center Education), 1974

B.A.; M.A., University of South Florida, 1974

BOTERO, FERNANDO ........... Associate Professor (Internal Medicine), 1973

B.S.; M.D., University of Antioquia Medical School, Medellin, Columbia, 1964

BOTT, WILLIAM K. ............ Professor (Guidance Education), 1960


BOUS, PIERRE J., JR. .......... Assistant Professor (Obstetrics and Gynecology), 1976

B.S., M.S., M.D., Louisiana State University, 1971

BOWEN, ADA M. ............... University Librarian (Medical Library), 1965

B.S.; M.S., University of South Florida, 1971

BOWERS, JAMES C. ............ Professor (Electrical Engineering), 1964

B.E.; M.S.; Sc.D., Washington University, 1964

BOWERS, LOUIS E. ............ Professor (Physical Education, Education), 1967

B.S.; M.A.; Ph.D., Louisiana State University, 1964

BOWERS, RICHARD T. .......... Director and Professor (Physical Education, Student Affairs), 1963

B.S., M.S., Ed.D., George Peabody College, 1961

BOWMAN, R. LEWIS .......... Professor (Political Science), 1973

B.A., Ph.D., University of North Carolina, 1964

BOYCE, HENRY W., JR. ........ Professor (Internal Medicine), 1975

B.S.; M.S.; M.D., Bowman Gray School of Medicine, 1955

BOYD, HERBERT F. .......... Professor (Exceptional Child Education), 1965

B.S., M.S., Ph.D., University of Illinois, 1958

BOYD, SARAH E. ............ Assistant Professor (Nursing), 1977

R.N.; B.S.; M.S.; M.P.S., Long Island University, 1977

BOYD, WILLIAM F. .......... Assistant Professor (Comprehensive Medicine), 1976

B.S.; M.D., Medical University of South Carolina, 1972

BOYNTON, CHARLES E. ........ Instructor (Accounting), 1977

A.B.; M.B.A., Columbia University, 1972

BRADLEY, ROBERT V. ....... Associate University Catalog Librarian (Libraries), 1959

B.A., M.A., Florida State University, 1957

BRADSHAW, ROBERT D. .... Area Administrator (Housing and Food Service, Student Affairs), 1973

B.B.A., B.F.A., M.S., Miami University, Ohio, 1973

BRADY, HENRY G. .......... Associate Professor (Adult and Vocational Education), 1969

B.S.; M.Ed.; Ph.D., Florida State University, 1969

BRADY, WILLIAM M. .......... Instructor (Mass Communication), 1963

B.S.; M.S., University of Illinois, 1967

BRAMAN, ROBERT S. ........ Professor (Chemistry), 1967

B.S.; Ph.D., Northwestern University, 1966

BRAMES, HERMAN J. .......... Assistant Administrator (Regional Campus Affairs), 1964

B.S.; M.S., Indiana State University, 1964

BRENNANDER, GEORGE A. .... Associate Professor (Sociology), 1969

B.S., M.A., Ph.D., University of California, Los Angeles, 1962

BRENTLEY, BETTY C. ....... Associate Professor (Childhood and Language Arts Education), 1968

B.S.; M.Ed.; Ph.D., Florida State University, 1970

BRAINTSTEIN, STEWART M. .... Assistant Professor (Radiology), 1976 (Part time)

B.S.; M.D., University of Bologna, Italy, 1968

BRAY, LLOYD J., JR. ........ Coordinator, Programming (Florida Center for the Arts, Affiliate Lecturer (Theatre), 1973

B.A.; M.A., University of North Carolina, 1965

BREIT, FRANK D. ....... Associate Professor (Science and Health Education), 1968

B.A., M.Ed., Ph.D., University of Texas, 1968

BREY, GARY B. ............ Assistant Professor (Political Science), 1977

B.A.; M.A., Ph.D., Syracuse University, 1977

BRIDGES, VIRGINIA A. ....... Associate Professor (Art and Music Education), 1964

B.M.Ed., M.A., Ph.D., Ohio State University, 1965

BRIDGES, WINSTON T., JR. .... Assistant Professor (Psychological and Social Foundations Education), 1970 St. Petersburg Campus


BRINGS JOHN C. .......... Professor (Biology), Acting Chairperson and Affiliate Professor (Marine Science), 1964

B.S., M.A., Ph.D., Stanford University, 1952

BRIGHTWELL, J. RICHARD ....... Director (Continuing Education), 1964

B.S., M.A., Ohio State University, 1947

BRIGHTWELL, RUTH G. .... Counselor/Adviser (Student Personnel Office, Education), 1969 (Part time)

B.S., Ohio State University, 1948

BRIDGES, JOHN D. .......... Assistant Professor (Biology), 1974 (Part time)

M.D., State University of New York, Upstate Medical Center, 1963

BRODER, LAWRENCE R. ....... Associate Professor (English), 1965

B.S., M.A., Ph.D., Bowling Green State University, 1968

BROOKER, H. RALPH .......... Associate Professor (Physics), 1964

B.S., M.S., Ph.D., University of Florida, 1962

BROOKS, ROBERT D. ........... Professor (Speech Communication), 1974

A.B.; M.A., Ph.D., Cornell University, 1965

BROWN, CURTIS J. ............ Counselor/Adviser (Business), 1972 (Part time)

B.S., Florida & M University, 1963

BROWN, HUGH K. ............ Assistant Professor (Anatomy), 1974

B.S.; M.S.; Ph.D., Tulane University, 1974

BROWN, JOHN L. .............. President, 1977

B.S.E.E.; M.A.; Ph.D., Columbia University, 1952

BROWN, LARRY N. ............ Associate Professor (Biology), 1967

B.S.; M.A., Ph.D., University of Missouri, 1962

BROWN, MORTIMER .......... Research Associate (Psychiatry), 1977 (Part time)

B.S.; Ph.D., Vanderbilt University, 1961

BROWN, STEPHEN E. ............ Coordinator of Advising (Social and Behavioral Sciences), 1977

B.S.; M.S., Ph.D., Florida State University, 1970

BRUCE, RITA G. .......... Associate Professor (Science and Health Education), 1970

B.S., M.S., Ed.D., West Virginia University, 1963

BRUNHILD, GORDON .......... Professor (Economics), 1960

B.S., M.B.A., Ph.D., University of Southern California, 1957

BRUS, JAMES I. .......... Director (Information Services), 1973

B.S., Ohio University, 1950

BRYANT, ALMA G. ....... Assistant Professor-Program Director (English), 1972

B.S., M.A.; Ed.S., Ed.D., University of Florida, 1976

BRYANT, FRED D. ............ Director (Medical Center Library), 1971

A.B., M.S.L.S., Emory University, 1947

BRYANT, HAYDEN C., JR. .... Associate Professor (Art & Music Education), 1967

B.A., M.F.A., Georgia State University, 1957

BRYKCYNSKI, KAREN A. ....... Instructor (Nursing), 1976

B.S.N., M.S.N., Adelphi University, 1976
DAVIE, KENNETH W. ...... Assistant Professor (Economics), Coordinator of Advising, Undergraduate (Business Administration), 1966
B.A.; M.A., St. Mary's University, 1965

DAVIS, DARRELL L. ...... Professor (Physiology), 1971
B.S., M.A.; Ph.D., St. Louis University, 1956

DAVIS, JEFFERSON C., JR. Professor (Chemistry), 1965
B.S., M.S.; Ph.D., University of California, Berkeley, 1959

DAVIS, MACK, III ...... Counselor/Advisor (Student Studies, Student Affairs), 1977
B.A., University of South Florida, 1972

DAVIS, RICHARD A., JR. Professor-Chairperson (Geology), 1973
B.S.; M.A.; Ph.D., University of Illinois, 1964

DAVIS, WESLEY F. ...... Professor (English), 1960
A.B.; M.A.; Ph.D., Stanford University, 1970

DAWES, CLINTON J. ...... Professor (Biology), 1964
B.S., M.A., Ph.D., University of California, Los Angeles, 1961

DEANS, STANLEY R. ...... Professor (Physics), 1967
B.S.; M.S.; Ph.D., Vanderbilt University, 1967

DEATS, SARA M. ...... Associate Professor (English), 1970
B.A., M.A., Ph.D., University of California, Los Angeles, 1970

DEBURD, WARREN A. ...... Associate Professor (Marketing), 1969
B.S., M.B.A., Ph.D., University of Illinois, 1969

DEER, HARRIET H. ...... Associate Professor (English), 1966
St. Petersburg Campus

M.A., University of Minnesota, 1964

DEER, IRVING ...... Professor (English), 1966
B.S.; M.A., University of Minnesota, 1956

DEITZ, JOHN J. ...... Instructor (English), 1971
A.B.; M.A., Temple University, 1965

DILKES, THOMAS P. ...... Associate Professor (History), 1969
B.A., M.A., Ph.D., University of Iowa, 1964

DODKIN, JOSEPH B. ...... University Librarian (Libraries), 1974
B.A., B.A.; M.L.S., Rutgers University, 1966

DODD, RICHARD W. ...... Assistant Professor (Family Medicine), 1977 (Part time)
M.D., State University of New York, Upstate Medical Center, 1960

DOEBELKE, JUSTUS ...... Professor (History), 1975 Sarasota Campus
A.B.; M.A., Ph.D., Princeton University, 1966

DOEY, MERLE R. ...... Professor-Chairperson (Electrical and Electronic Systems), 1964
B.B.E.E., M.S.E.E., Ph.D., Georgia Institute of Technology, 1959

DOTY, LOUIS F. ...... Professor (Industrial Systems Engineering), 1970
B.S., M.S., Ph.D., University of Cincinnati, 1951

DOWNS, BERNARD F. ...... Assistant Professor (Speech Communication), 1970

DOYLE, LARRY J. ...... Associate Professor (Marine Science), 1972 St. Petersburg Campus
B.A., M.A.; Ph.D., University of Southern California, 1973

DRAPELA, VICTOR J. ...... Professor (Guidance Education), 1968
Ph.L.; M.A., Ph.D., University of North Dakota, 1968

DRAPER, BRUCE ...... Assistant Professor (Psychiatry), 1977
B.S., M.D., Yale University School of Medicine, 1954

DUBIS, LEADORE D. ...... Associate Professor (Childhood and Language Arts Education), 1973
B.S., M.A., M.S., Northwestern University, 1949

DUDLEY, JULIUS W. ...... Assistant Professor (Afro-American Studies), 1970
B.A., M.A., Atlanta University, 1969

DUNN, EDGAR H. ...... Lecturer (Accounting), 1970, St. Petersburg Campus
J.D., University of Florida, 1947

DURSO, MARY W. ...... Assistant Professor (Adult and Vocational Education), 1969
B.A., M.A.; Ph.D., Georgia State University, 1973

DUTTON, RICHARD E. ...... Professor (Management), 1963
A.B.; M.B.A.; Ph.D., Louisiana State University, 1963

Dworson, JULIAN J. ...... Associate Dean (Admissions), 1970
B.A., M.Sc., Ph.D., University of Manitoba, Canada, 1969

Dwyer, ROBERT C. ...... Professor (Exceptional Child Education), 1964
B.A., M.Ed., George Peabody College, 1966

Dwyer, ROY E. ...... Lecturer (Childhood and Language Arts Education), 1967
B.S.; M.Ed.; Ed.D., University of Florida, 1957

DYKSTRA, DAVID E. ...... Professor (Literature), Chairperson (Humanities), 1975 Sarasota Campus
B.A.; M.A., Ph.D., University of Iowa, 1957

EAKER, ALAN B., JR. ...... Associate Professor (Visual Arts), 1969
B.A., M.A., University of California, Berkeley, 1969

EASLER, MARY C. ...... Counselor to Students (Housing and Food Service, Student Affairs), 1976

EBEL, TERON A. ...... Assistant Dean (Curriculum and Continuing Medical Education), Assistant Professor (Internal Medicine), 1973
B.S.; M.S.; M.D., Indiana University, 1970

EBERLE, JAN ...... Visiting Instructor (Music), 1976
B.M., The Curtis Institute of Music, 1976
EDWARDS, WILLIAM C. ........ Professor-Chairperson (Ophthalmology), 1972
A.B.; M.D., Yale Medical School, 1959

EGGIMAN, DONALD W. ...... Associate in Research (Marine Science), 1973 St. Petersburg Campus
B.A.; M.S., University of South Florida, 1975

EICHRORN, HEINRICH K. ....... Professor-Chairperson (Astronomy), 1964
Ph. D., University of Vienna, 1949

EICHLER, DUANE C. ........ Assistant Professor (Biochemistry), 1977
B.A.; Ph.D., University of California at Los Angeles, 1972

ELERS, FREDERICK I. ....... Associate Professor (Biology), 1967
B.S.; M.S.; Ph.D., University of Michigan, 1968

EL-YOUSF, M. KHALED ...... Associate Professor (Psychiatry), 1975
B.S.; M.D., American University of Beirut, 1968

ENDICOTT, JAMES N. ....... Associate Professor (Surgery), 1975 (Part time)

A.B.; M.D., Indiana University School of Medicine, 1967

ENGEL, CHARLES W. ....... Professor (Math Education), 1966
B.S., M.S.; Ed.D., Wayne State University, 1966

ENGLISH, ALICE M. ..... Counselor to Students (Housing and Food Service, Student Affairs), 1971
B.A.; M.A., University of West Florida, 1976

ENTREKIN, NINA M. ...... Associate Professor (Nursing), 1973
B.S.N., M.N., Emory University School of Nursing, 1969

ERICSON, LINDA E. ......... Academic Administrator (University Studies, Student Affairs), 1964
B.A.; M.A.; M.M., University of South Florida, 1970

ERVIN, DONALD W. ....... Instructor-Assistant Director (Sponsored Research), 1973
B.S., Athens College, 1964

ESSIG, FREDERICK B. ... Assistant Professor (Biology), Director of Botanical Gardens, 1975
A.B.; Ph.D., Cornell University, 1975

ESSRIG, IRVING M. ....... Associate Professor (Biostatistics), 1975
M.D., Tulane University Medical School, 1938

ESTLER, WILLIAM T. Associate Professor (Physics), 1975 Sarasota Campus
B.S.; M.A., Ph.D., State University of New York, Stonybrook, 1972

FAIRY, FRANCIS J. .......... Professor (English), 1964
A.B.; M.A., Ph.D., University of Texas, 1964

FACTOR, REGIS A. ......... Assistant Professor (Political Science), 1971 St. Petersburg Campus
B.A.; M.A., Ph.D., New York University, 1974

FAGER, CHARLES J. ...... Professor (Visual Arts), 1963
B.A.; M.F.A., University of Kansas, 1963

FALLON, FREDERICK W. .... Assistant Research Scholar-Scientist-Visiting Assistant Professor (Astronomy), 1973
B.A.; M.A., University of South Florida, 1972

FANNING, JANE A. ......... Associate Professor (Nursing), 1973
B.S.; M.S., Boston University, 1970

FANNING, KENT A. ......... Associate Professor (Marine Science), 1973 St. Petersburg Campus
B.S.; Ph.D., University of Rhode Island, 1973

FARERS, ROBERT V. ....... Professor (Internal Medicine), 1973
M.D., Georgetown University, 1958

FARRELL, FRANCES ......... Associate Professor (Nursing), 1977
B.S.; M.S. University of California, San Francisco Medical Center, 1949

FELLER, JAMES F. ........... Instructor (Finance), 1974
B.A., University of South Florida, 1968

FENDER, RICKARD C. ...... Director (University Budgets), 1968
B.A., University of South Florida, 1969

FENDRISER, KENDRICK E., JR. Assistant Professor (Mass Communications), 1973
B.S.; M.S., Boston University, 1951

FENSLER, NEIL A. ......... Assistant Professor (Internal Medicine), 1977 (Part time)
B.A.; M.D., St. Louis University School of Medicine, 1973

FERGUSON, DONALD G. .... Professor (Guidance Education), 1970
B.S., M.A.; Ed.D., Western Reserve University, 1956

FERNANDEZ, JACK E. ........ Professor (Chemistry), 1960
B.S.Ch., M.S., Ph.D., University of Florida, 1954

FERNANDEZ, RAYMOND J. .. Assistant Professor (Pediatrics), 1977
B.A.; M.D., Tulane University School of Medicine, 1968

FERNANDEZ, ROBERT C. .. Assistant Professor (Psychiatry), 1977
B.S.; M.D., University of Tennessee, 1969

FERNANDEZ, SUZAN J. ........ Counselor/Adviser (Academic Advising, Student Affairs), 1974
B.A.; M.A., University of South Florida, 1975

FERRAND, MARILYN M. .... Assistant Professor (Interdisciplinary Social Science/Women's Studies Program), 1973
B.A.; M.A., Ph.D., State University of New York at Buffalo, 1976

FERRARO, NANCY E. ....... Director, (Records and Registration), 1975 Sarasota Campus
B.S., B.A., University of Florida, 1959

FERRIS, MARY W. ....... Associate University Reference Librarian (Libraries), 1971 (Part time) St. Petersburg Campus
B.A.; M.S., Emory University, 1956

FIBBER, WARREN W. ....... Associate Professor (Surgery), 1975 (Part time)
B.S.; M.D., University of Wisconsin Medical School, 1955

FIFFER, EDWARD J., JR. .. Associate Professor (Economics), 1971

FITZPATRICK, DAVID F. .... Associate Professor (Pharmacology), 1972

FIORE, SILVIA R. .......... Associate Professor (English), 1969
B.Ed., M.A.; Ph.D., University of Pittsburgh, 1970

FISHER, ARTHUR W., JR. Lecturer (Accounting and Law), 1970

FORD, EDWARD J., JR. ..... Associate Professor (Economics), 1971
B.A.; M.D., Boston College, 1971

FORD, NANCY T. ....... Acting Assistant to University President (President's Office), 1976
B.A.; Randolph-Macon Woman's College, 1948

FORREY, ROBERT J. ....... Associate Professor (American Studies), 1977
B.A.; M.A.; Ph.D., Yale University, 1971

FORSETH, SONIA D. ....... Assistant Professor (Art and Music Education), 1971 St. Petersburg Campus
B.A., M.A., Ph.D., University of Minnesota, 1976

FORTSON, FRANCIS G. ........ Systems Coordinator (Computer Research Center), 1965

FOSTER, LARRY J. ......... Assistant Professor (Medicine), 1977 (Part time)
B.S., M.D., University of Tennessee, 1970
Fowler, Robert L., Jr. ........ Associate Professor (Psychology), 1969 St. Petersburg Campus
B.A., M.A., Ph.D., University of Tennessee, 1963

Fox, Cheryl D. .......... Counselor to Students (Housing and Food Service, Student Affairs), 1977

Francis, Roy G. ........... Professor-Chairperson (Sociology), 1973
B.A.; M.A.; Ph.D., University of Wisconsin, 1950

Frankel, Jack W. ........... Associate Professor (Microbiology), 1976
B.A.; Ph.D., Rutgers University, 1951

Franques, John T. ........... Assistant Professor (Engineering), 1971
B.S., M.S., Ph.D., Louisiana State University, 1971, P.E.

Freid, Tom D. ............... Associate Director-Program Director (Measurement and Research Education), 1968

Frenchman, Stuart M. ....... Assistant Professor (Radiology), 1977 (Part time)
B.A.; M.D., Temple University School of Medicine, 1967

Fresover, Frank W. .......... Associate Professor (Reading Education), 1969

Fretwell, Gary L. ............ Counselor to Students (Housing and Student Service, Student Affairs), 1977

Fried, Frank E. .............. Professor (Biology), 1960
B.A., Ph.D., University of Minnesota, 1958

Froelich, Ralph O. .......... Associate Professor (Music Arts), 1974
B.S., Juilliard School of Music, 1958

Fudge, William G., Jr. ...... Associate Professor (Mass Communication), 1972

Fuson, Robert H. ............ Professor (Geography), 1960
A.B.; M.A.; Ph.D., Louisiana State University, 1958

Futterey, Dale E. ............ Associate Lecturer (Marketing), 1969
B.S., M.B.A., Ph.D., Ohio State University, 1964

Gaggi, Silvio L. ............. Assistant Professor (Humanities), 1972
B.A.; M.A.; Ph.D., Ohio University, 1972

Garb, Oscar N. .............. Professor-Assistant Chairperson (Electrical Engineering), 1970
B.S.E.E., M.S.E.E., Ph.D., University of Maryland, 1969

Garb, Sandra A. ............. Assistant Professor (Psychology), 1974

Gardner, Melvin J. .......... University Physician (Student Health Service and Student Affairs), 1969 (Part time)
A.B., M.D., Temple University, 1944

Garms, Corrie P. .......... Assistant Professor (Internal Medicine), 1974
B.S.; Ph.D., Vanderbilt University, 1972

Garnier, Julius M. .......... Assistant Professor (Family Medicine), 1977 (Part time)
B.A.; M.D., Loma Linda University, 1965

Garrett, Samuel J. .......... Professor-Assistant Chairperson (Electrical Engineering), 1967
B.E.E.; M.S.E.E., Sc.D., University of Pittsburgh, 1963

Garrett, William E. ........ Associate Professor (English), 1960
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B.S., M.A., Ph.D., University of Florida, 1958

Gates, Jean K. .............. Associate Professor (Library, Media and Information Studies, Education), 1966
B.A., M.S.L.S., Catholic University of America, 1951

Geary, David P. ............. Associate Professor (Criminal Justice), 1976
B.A.; M.P.A., University of Southern California, 1972

Geiger, O. Glenn ............ Associate Professor (Psychological and Social Foundations Education), 1969
B.A.; Ph.D., University of South Carolina, 1968

Gelinas, Robert W. .......... Associate Professor (Visual Arts), 1963
B.F.A., M.F.A., University of Alabama, 1938

Germain, Bernard F. .......... Assistant Professor (Medicine), 1976
B.A.; M.D., Medical College of Georgia, 1966

Germino, Barbara B. .......... Assistant Professor (Nursing), 1976
B.S.N., M.S.N., Duke University, 1967

Gessman, Albert M. .......... Professor (Religious Studies), 1961
B.A.; M.A.; Ph.D., University of Vienna, 1950

Gilmour, Alden S. .......... Associate Professor (Interdisciplinary Social Science), 1961
B.A., M.A., Florida State University, 1957

Gilmour, Robert ............. Professor (Physics), 1971
B.S., Ph.D., Massachusetts Institute of Technology, 1967

Girgenti, Joyce R. .......... Instructor (Nursing), 1977
B.S.; M.S.N., Yale University, 1973

Glass, Harvey ............... Professor (Systems Engineering), 1969
B.S., M.S., D.Sc., Washington University, 1965

Glasser, Stephen P. .......... Associate Professor (Medicine), 1976
M.D., University of Miami Medical School, Florida, 1964

Glover, Jean P. .............. Instructor (Communicology), 1968
B.S., Eastern Illinois University, 1949

Glover, Kofi R. A. .......... Assistant Professor (Afro-American Studies), 1972
B.A.; M.A., Ph.D., Indiana University, 1975

Gluckstein, Stephen J. ...... Assistant Professor (Anthropology), 1977
B.A.; M.A.; Ph.D., The Catholic University of America, 1973

Goforth, Frances S. .......... Associate Professor (Childhood and Language Arts Education), 1967
B.S., M.Ed.; Ed.D., Indiana University, 1966

Goldberg, Martin ............ Associate Professor (Management), 1975
B.A.; M.B.A.; M.S., Northwestern University, 1973

Golding, Lois A. ............ Associate Professor (Music Arts), 1962

Goldman, Allan L. .......... Associate Professor (Internal Medicine), 1974
B.A.; B.S., M.D., University of Minnesota, 1968

Goldsmith, George H. ......... Director (Financial Aids, Student Affairs), 1969
B.A.; M.Ed., Tulane University, 1968

Golloway, Glenn G. .......... Associate Professor (Psychiatry), 1976
B.A.; M.D., Cornell University Medical College, 1949

Gomez, Osborn L. ............ Director (Extension Library), 1965 St. Petersburg Campus
A.B., M.A., M.S.L.S., Florida State University, 1969

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B.S., B.A.; M.D., University of Habana School of Medicine, 1943

Gonzalez, Juan O. .......... Professor (Energy Conversion Systems), 1965
B.S., M.S., Virginia Polytechnic Institute, 1950

Gooding, Dolores K. .......... Counselor/Adviser/Instructor (Engineering), 1975
M.S.E., University of South Florida, 1975

Goodman, Adolph W. .......... Distinguished Service Professor (Mathematics), 1964
B.S., M.A., Ph.D., Columbia University, 1947

Goodrich, James T. .......... University Physician (Student Health Service, Student Affairs), 1975
B.S.; M.D., Wayne State University, 1970

Gordon, Charles A. .......... Coordinator (Undergraduate Advising, Education), 1968
B.A.; M.S.; Ed.D., Nova University, 1977

Gordon, Katherine K. .......... Coordinator/Instructor (Social and Behavioral Sciences), 1975
B.S.; M.A., Columbia University, 1961

Gould, James A. ............ Professor (Philosophy), 1964
B.S., M.A., Ph.D., University of Michigan, 1953

Gowen, Howard B. .......... Associate Professor (Humanities), 1963
Ph.B.; B.S.; M.A.; Ph.D., Florida State University, 1961

Graham, Arthur D. .......... Professor-Chairperson (Radiology), 1972 (Part time)
M.D., University of Colorado School of Medicine, 1958

Grange, Roger T., Jr. ....... Professor (Anthropology), 1964
Ph.B., M.A., Ph.D., University of Arizona, 1962

Grasso, Robert J. .......... Associate Professor (Medical Microbiology), 1971
B.S., Ph.D., State University of New York at Buffalo, 1968
HEIM, WILLIAM J. Associate Professor-Associate Chairperson (Freshman English), 1970
A.B.; M.A., Ph.D., Indiana University, 1974

HENDERSON, STEPHEN J. Assistant in Computer Science (Electrical and Electronics), 1977
B.A., University of Florida, 1976

HENDRY, CAROLE F. Lecturer (Biology), 1967
B.A., M.A., University of South Florida, 1968

HENLEY, ELTON F. Professor (English), 1963
B.A., M.A., Ph.D., Florida State University, 1962

HENNING, RUDOLF E. Associate Dean-Associate Professor (Engineering), 1971
B.S.E.E., M.S.E.E., St. D., Columbia University, 1954

HENSLEY, JAMES S. Assistant Professor (Marketing), 1976
B.A.; M.B.A.; Ph.D., Ohio State University, 1970

HERMAN, WALTER J. Associate Professor (Economics), 1960
B.S., M.B.A., Ph.D., University of Florida, 1965

HERSHERBERGER, JOHN D. Director (University Television), 1974
B.S., M.S., Miami University, Ohio, 1965

HERTZ, GILMAN W. Professor (Physical Education, Student Affairs), 1960
B.S., M.S., P.E.D., University of Indiana, 1956

HESSE, EDWARD V., III. Student Affairs Coordinator (Cooperative Education and Placement, Student Affairs), 1976
B.S.; M.Ed. Trenton State College, 1972

HESSENGER, DAVID A. Assistant Professor (Biology), 1973
B.A.; Ph.D., University of Miami, Florida 1970

HEWITT, CHARLES F. Acting Assistant Vice President (Student Affairs), 1972
B.S.; M.A.; Ed.D., Western Michigan University, 1972

HICKMAN, JACK W. Associate Professor (Internal Medicine), 1970
B.S., M.D., Indiana University, 1955

HIGGINS, JOHN M. Associate Professor, Counseling Psychologist (Counseling Center, Student Affairs), 1977
B.S.; M.A.; Ph.D., Bowling Green State University, 1977

HIGBEE, RICHARD H. Assistant Dean-Instructor (College Governance and Administration, Education), 1974
B.A., M.A., University of South Florida, 1976

HIGGINS, JAMES J. Associate Professor (Mathematics), 1974
B.S.; M.S.; Ph.D., University of Missouri, 1970

HILL, RAYMOND Assistant Professor (Adult and Vocational Education), 1977
B.S.; M.A., Ed.D., University of Alabama, 1975

HILL, ROSALIE A. Special assistant for Equal Opportunity (Academic Affairs), 1975
B.S., M.Ed., Florida A & M University, 1961

HINDE, WILL M. Associate Professor (Visual Arts), 1972
B.S.; M.S., Architectural Association (Biological), 1974
B.S.; M.S.; Ph.D., Iowa State University, 1957

HIRSHBERG, EDGAR W. Professor (English), 1960
B.A., M.A., Ph.D., Yale University, 1951

Hoffman, Hubert A. Professor-Associate Dean (Education), 1966
B.S.; M.Ed., P.E.D., Indiana University, 1969

Hoffman, Theodore B. Professor (Humanities), 1962
A.B., M.A., Ph.D., University of the Pacific, 1959

HOGNAS, N. GORAN Visiting Assistant Professor (Mathematics), 1977
Ph.D., ABO Akademi, Finland, 1977

HOOG, MARGARET A. Assistant University Librarian (Libraries), 1970
B.A.; M.S.L.S., Florida State University, 1975

Holcomb, Dan L. Associate Professor-Athletic Coach (Physical Education, Student Affairs), 1965
B.Ed., M.S., Florida State University, 1962

HOLEKAMP, TIMOTHY L. R. Assistant Professor (Ophthalmology), 1977
A.B.; M.D., Washington University School of Medicine, 1972

HOLLAND, MARGARET S. Assistant Professor (Social Science and Letters, Education), 1966
B.A., M.A.T.; Ph.D., Union Graduate School, 1977

Holley, John W. Assistant Professor (Sociology), 1971
B.A., M.S., Ph.D., Florida State University, 1971

HOLLOWAY, KENNETH E. Counselor to Students (Student Affairs), 1977, Sarasota Campus
B.S., M.S., Florida State University, 1977

HOLMIS, ROLAND C. Instructor (Geography), 1974, St. Petersburg Campus
A.B., M.S., University of Florida, 1959

HOLT, THOMAS M. Assistant Professor (Anatomy), 1974
B.S., M.S.; Ph.D., Louisiana State University, 1974

HONNER, H. ANDREW Assistant Professor-Assistant Director (Physical Education, Student Affairs), 1969
B.S., M.S., University of Illinois, 1965

HOPKINS, THOMAS L. Associate Professor (Marine Science), 1967, St. Petersburg Campus
B.A., M.A., Ph.D., Florida State University, 1964

HOPPER, ALAN T. Instructor (Music), 1972, (Part time)
B.A., University of South Florida, 1970

HORACEK, MARGARET B. Associate University Librarian (Medical Library), 1974
B.A.; M.S.L.S., Kansas State Teachers College, 1974

HORRIGAN, FREDERICK J. Associate Professor (Political Science), 1968
B.A., M.A., Ph.D., Indiana University, 1958

HOREMAN, DAVID A. Assistant Professor (Mass Communications), 1971
B.A.; M.A., Ph.D., New York University, 1970

HOUGHTON, LEA M. Academic Administrator (Graduate Studies, Academic Affairs), 1968
B.S., M.A., University of Idaho, 1950

HUBBARD, CONRAD E. Instructor (Accounting), 1962
B.S., M.B.A., University of Kentucky, 1957, C.P.A.

HUBNER, WALTER F. Assistant Professor (Management), 1977
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B.A., M.A., Ph.D., University of Wisconsin, 1969

HUG, WILLIAM G. Professor (Dance), 1969
B.S., M.A., University of Illinois, 1960

HULBARY, WILLIAM R. Associate Professor (Political Science), 1976
B.A., M.A., Ph.D., University of Iowa, 1972

HUMM, HAROLD J. Professor (Marine Science), 1966
B.S., M.S., University of Hawaii, 1945

HUNTER, JAMES H., JR. Professor (Astronomy), 1970
B.A., Ph.D., University of California, Los Angeles, 1964

HURTIZ, HARRY L. Associate Professor (Visual Arts), 1973
B.A., M.A., New York University, 1963

HUTCHCRAFT, GILBERT R. Associate Professor (Education), 1977 Ft. Myers Campus
B.S., M.A., Ed.D., Indiana University, 1970

HUTCHISON, WILLIAM S., JR. Assistant Professor (Social Work Program), 1977
B.A.; M.S.W., University of Georgia, 1968

HYMAN, RANDY E. Area Administrator (Student Housing), 1976 Sarasota Campus
B.S.; M.Ed., University of Vermont, 1976

IARABO, DOMENICK Assistant Professor (Foreign Languages), 1970
B.A.; M.Litt., Columbia University, 1973

INGALLS, ROBERT P. Assistant Professor (History), 1974
B.A.; M.A., Ph.D., Columbia University, 1973

INGRAM, JAMES M. Professor-Chairperson (Obstetrics and Gynecology), 1971
M.D., Duke University, 1943

ISAAK, SAMUEL M. Associate Professor (Mathematics), 1968
B.S., M.C.; Ph.D., Indiana University, 1965

ISELL, ROBERT G. Associate Professor (Radiology), 1973 (Part time)
B.A.; M.D., University of Michigan Medical School, 1964
JAeschke, Donald P. ........... Associate Professor (Adult and Vocational Education), 1963
B.S.; M.S., Ph.D., Florida State University, 1971

Jain, Vijay K. .............. Professor (Electrical Engineering), 1972
B.E.; M.E.; Ph.D., Michigan State University, 1964

James, Rosella .............. Assistant Professor (Economics), 1967
B.S., M.B.A., Temple University, 1945

Jenkins, Audrey ............. Visiting Assistant Professor (Reading Education), 1971
B.S.; M.Ed., Ed.D., University of Georgia, 1969

Jennings, Vance S. ........... Associate Professor-Chairperson (Music Arts), 1967
B.M., M.Ed., D.M.E., University of Oklahoma, 1972

Jensen, J. Keith ............. Associate Professor (Speech Communication), 1974
B.S., M.A.; Ph.D., University of Iowa, 1973

Jenkins, Paula .............. Assistant in Research (SMF-Engineering), 1971 (Part time)
B.A., University of South Florida, 1967

Jett, George R., Jr. ........ Associate Director (Veterans Affairs, Tampa Campus, Student Affairs), 1973
B.A., University of South Florida, 1973

Johanningmeier, Erwin V. ........ Professor-Chairperson (Psychological and Social Foundations, Education), 1968
A.B., M.A.Ed., Ph.D., University of Illinois, 1967

Johnson, Dale A. .............. Assistant Professor (Finance), 1970

Johnson, Doyle P. ........... Associate Professor (Sociology), 1969
B.A., M.A., Ph.D., University of Illinois, 1969

Johnson, Frank F., Jr. ....... Associate Professor-Chairperson (Adult and Vocational Education), 1971
B.A.; M.A.; Ed.D., Rutgers University, 1971

Johnson, Gordon A. .......... Professor (Music Arts), 1963
B.S.; M.M., Ph.D., Michigan State University, 1963

Johnson, G. Orville ........ Professor (Exceptional Child Education), 1972
B.S.; Ed.M., Ed.D., University of Illinois, 1950

Johnson, Marion H. ........ Visiting Lecturer (Criminal Justice), 1977
M.S., Michigan State University, 1974

Johnson, Roger E. ............ Professor-Chairperson (Social Science and Letters, Education), 1967
B.S., M.A., Ph.D., University of Minnesota, 1967

Johnson, Thomas E., Jr. ....... Associate Professor (Management), 1974
B.S., M.A.; Ph.D., University of Alabama, 1971

Johnston, Milton D., Jr. .......... Assistant Professor (Chemistry), 1973
B.A.; A.M., Ph.D., Princeton University, 1970

Jonaitis, Anthony J., Jr. ........ Associate Professor-Athletic Trainer (Physical Education, Student Affairs), 1965
B.S., M.S., Springfield College, 1956

Jones, Hilton K. ............. Assistant Professor (Music Arts), 1969
B.M.; M.M., Eastman School of Music, 1968

Jones, S. Lynn .............. Assistant in Research (Marine Science), 1974
B.S.; M.S., University of South Florida, 1977

Jones, W. Denver ............. Professor (Physics), 1970
B.A.; M.A., Ph.D., Vanderbilt University, 1963

Jordan, David C. ........ Acting assistant to the President (President's Office), 1968
B.A., M.A., University of South Florida, 1966

Josephson, Richard A. ........ Instructor (Psychiatry), 1974 (Part time)
B.S.; M.D., State University of New York, Downstate Medical Center, 1968

Jreisat, Jamil E. ............ Professor-Chairperson (Political Science), 1968
B.S.; M.P.A., Ph.D., University of Pittsburgh, 1965

Jüdisch, Janifer M. ........ Associate Professor (Pediatrics), Assistant Dean for Equal Opportunity and Affirmative Action (Medicine), 1975
M.D., State University of Iowa, 1963

Juergensen, Hans ............. Professor (Humanities), 1961
B.A.; Ph.D., Johns Hopkins University, 1951, L.H.D.

Jurch, George R., Jr. .......... Associate Professor (Chemistry), 1966
B.S.Ch.; M.S.; Ph.D., University of California, San Diego, 1965

Juergensen, Louis C. ........ Professor (Accounting), 1962
B.S.C., M.A., Ph.D., State University of Iowa, 1951, C.P.A.

Kahn, Stephen C. ........ Associate Professor (Accounting and Law) 1969
B.A., M.A.; J.D., University of Florida, 1965

Kaplan, Max ................ Professor (Sociology), 1967
B.S.; M.S.; Education, University of Illinois, 1951

Kapplin, Steven D. .......... Instructor (Finance), 1974
A.B., Georgia State University, 1970

Karp, Joseph P. .............. Associate Professor-Acting Chairperson (Finance), 1969
B.S.C.; M.S., Ph.D., Purdue University, 1968

Karl, Herbert G. .......... Associate Professor (Social Science and Letters, Education), 1971
B.A., M.A., Ph.D., Florida State University, 1970

Karlin, Marvin ............... Professor (Management), 1974
B.A.; M.A., Ph.D., Princeton University, 1966

Karns, Lee T. .............. Associate Professor (Educational Leadership, Education) Coordinator (Graduate Advising, Education), 1966
B.S., M.A.; M.Ed., Ed.D., University of Oklahoma, 1966

Karp, Joseph P. .............. Assistant Director (University Budgets), 1974
B.S., M.A., University of South Florida, 1973

Kartsacos, Athanassios G. ........ Associate Professor (Mathematics), 1971
Diploma, Ph.D., University of Athens, Greece, 1969

Kasem, E. Lee ............... Speech and Hearing Clinician-Lecturer (Communicology), 1967
B.A., M.A., University of Florida, 1956

Kase, Judith B. .......... Assistant Professor (Social Science and Letters, Education), 1969
B.A.; M.A., Case Western Reserve University, 1956

Kashdin, Gladys S. .......... Professor (Humanities), 1965
B.A.; M.A., Ph.D., Florida State University, 1965

Kaufmann, Donald L. ........ Associate Professor (English), 1968
B.A., M.L., Ph.D., University of Iowa, 1966

Kazaks, Peter A. .......... Associate Professor (Physics), 1975
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B.Sc.; M.S., Ph.D., University of California, 1968

Kazantzis, Barbara W. ....... Assistant Professor (Art and Music Education), 1974

Kearney, Kevin E. .......... Director-Associate Professor (Bachelor of Independent Studies), 1964
B.A., M.A., Ph.D., University of Florida, 1960

Keefer, Harold J. .......... Professor (Childhood and Language Arts Education), 1969
B.S.; M.S., Ed.D., Cornell University, 1956

Keene, T. Wayne .......... Associate Professor (Educational Leadership Education), 1963
B.S.; M.Ed., Ed.D., University of Florida, 1963

Keil, John E. .............. University Acquisition Librarian (Libraries), 1968
B.A., M.L.S., Louisiana State University, 1969

Keiffer, Fronsie B. ........ Associate Professor (Reading Education), 1966
B.A., M.S., Ph.D., University of Iowa, 1963

Keith, Robert M. .......... Associate Professor (Accounting), 1969
B.S., M.Acc., Ph.D., University of Alabama, 1969, C.P.A.

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B.S.; Ph.D., Vanderbilt University, 1973

Kelley, Anne E. .......... Associate Professor (Political Science), 1963
B.S., M.S., Ph.D., Florida State University, 1961

Kelley, John E. .......... Associate Professor (Mathematics), 1964 St. Petersburg Campus
B.S., M.S., Ph.D., University of Michigan, 1960
KENDALL, Harry W. .......................... Professor (Physics), 1960
B.A., M.S., Ph.D., University of Florida, 1961
KENDALL, Doris R. .......................... Associate Professor (Academic Affairs), 1966
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A.B., M.C.S., Dartmouth College, 1938
KENNEDY, JAY B. .......................... Associate Professor (Economics), 1967
A.B., M.A., Ph.D., Indiana University, 1961
KERN, ALLEN F. .......................... Instructor (Adult and Vocational Education), 1974
B.A.; M.S.T.; M.S.Ed., Florida State University, 1971
KERN, ROBERT L. .......................... Associate Professor (Mass Communications), 1972
B.A.; M.A., Syracuse University, 1969
KETCHERISID, ARTHUR L. .......................... Assistant Director (Libraries), 1973
B.S., M.S., Florida State University, 1961
KHORSANDIAN, JAN K. .......................... Assistant Professor (Music Arts), 1971
B.S., M.S., University of Illinois, 1970
KEIFER, HERMAN P. .......................... Professor (English), 1960
A.B.; M.A., Ph.D., Columbia University, 1961
KIM, H. HARRY .......................... Assistant Professor (Geography), 1974
B.A.; M.A.; M.A., University of Washington, 1971
KIM, ELLEN B. .......................... Professor (Psychological and Social Foundations Education), 1968
B.A.; M.A., Ph.D., University of Florida, 1965
KIM, HERBERT D. .......................... Professor (Psychology), 1968
B.S., M.A., Ph.D., University of Southern California, 1958
KINCAID, GEORGE H. .......................... Associate Professor (Psychological and Social Foundations Education), 1967
A.B., M.R.C., Ed.D., University of Florida, 1965
KINDE, STEWART W. .......................... Professor-Chairperson (Communicology), 1965
B.S., M.A., Ph.D., Michigan State University, 1972
KINDER, BILL N. .......................... Assistant Professor (Psychology), 1976
B.S.; Ph.D., University of South Carolina, 1975
KING, ARLENE T. .......................... Assistant University Catalog Librarian (Libraries), 1964
B.A., M.A.; M.S.L.S., Florida State University, 1970
KING, CHARLES E. .......................... Professor (Biology), 1972
A.B.; M.S., Ph.D., University of Washington, 1965
KING, RAYMOND C. .......................... Director (Housing and Food Service, Student Affairs), 1963
KIS, M.A., Columbia University, 1961, Prof. Diploma
KING, SYLVIA C. .......................... Counselor/Adviser (University Studies, Student Affairs), 1974
B.S.; M.A.T.; M.S., University of Washington, 1965
KLEG, MILTON .......................... Associate Professor (Social Science and Letters, Education), 1970
A.B., M.A., Ed.D., University of Georgia, 1970
KLEIN, THOMAS W. .......................... Assistant Professor (Medical Microbiology), 1973
B.S.; Ph.D., Creighton University, 1972
KLEINE, GEORG-HILDEGARD .......................... Associate Professor (History), 1968
Ph.D., University Erlangen-Nurnberg, 1967
KLESIUS, JANELL P. .......................... Instructor (Reading Education), 1972
B.S.; M.A., University of South Florida, 1972
KLESIUS, STEPHEN E. .......................... Associate Professor (Physical Education, Education), 1969
B.S., M.A.; Ph.D., Louisiana State University, 1968
KLISANOFF, NANCY R. .......................... Assistant in Learning Resources Center (Nursing), 1977
B.S., University of South Florida, 1977
KLIPPEL, R. ELLEN .......................... Associate Professor (Marketing), 1976
KLOPPENSTEIN, CONNIE B. .......................... Assistant Professor (Nursing), 1976
B.S.N.; M.N., University of Florida, 1974
KNEEBURG, DON W. .......................... Associate Professor (Music Arts), 1968
B.A.; M.M., Indiana University, 1962
KNEE, JOHN M. .......................... Associate Professor (Library, Media and Information Studies, Education), 1975
M.A., Ph.D., Indiana University, 1974
KNEPPER, EDITH G. .......................... University Librarian (Libraries), 1975
B.A.; M.S.L.S., University of Kentucky, 1960
KNIFFEN, JAY T. .......................... Associate Professor (Management), 1970
KNOX, ROBERT H. .......................... Professor (Literature), 1975
Sarasota Campus
A.B.; Ph.D., Harvard University, 1959
KOECHLER, JERRY W. .......................... Associate Professor (Speech Communication), 1976
B.S., M.A.; D.Ed., The Pennsylvania State University, 1968
KOLVENBACH, JOHN J. .......................... Visiting Lecturer (Chemistry), 1977
B.A.; Ph.D., Iowa State, 1944
KOPP, EDGAR W. .......................... Dean-Professor (Engineering), 1964
B.S., B.I.E., M.S.I.E., Georgia Institute of Technology, 1947, P.E.
KOVACS, MICHAEL G. .......................... Associate Professor (Electrical Engineering), 1977
B.S.E.E., M.S.E.E., Ph.D., Northwestern University, 1970
KRANC, STANLEY C. .......................... Associate Professor (Engineering), 1972
B.S., M.E., Northwestern University, 1968
KRAUS, ALLAN D. .......................... Associate Professor (Technology Engineering), 1971
B.E., M.S.M.E., M.E.E.; Ph.D., University of South Florida, 1976
KRONSNOBLE, JEFFREY M. .......................... Professor (Visual Arts), 1963
B.S.; M.F.A., University of Michigan, 1963
KRUCHWITZ, WALTER H. .......................... Associate Professor (Physics), 1967
A.B.; M.A.; Ph.D., University of Michigan, 1961
KRZANOWSKI, JOSEPH J. .......................... Associate Professor (Pharmacology), 1971
B.S.; M.S., Ph.D., University of Tennessee, 1968
KUFFEL, CONSTANCE F. .......................... Instructor (Communicology), 1969
B.A., M.A., University of South Florida, 1968, C.C.C.
KUSHNER, GILBERT .......................... Professor-Associate Dean (Anthropology), 1970
B.A.; M.A.; Ph.D., University of Arizona, 1968
KUTCHER, LOUIS W., JR. .......................... Associate Professor (Sociology), 1967
A.B., M.A., Ph.D., University of Minnesota, 1972
LA BARBA, RICHARD C. .......................... Professor (Psychology), 1966
B.A.; Ph.D., University of Tennessee, 1965
LANCZ, GERALD J. .......................... Associate Professor (Medical Microbiology), 1971
A.B., M.S., Ph.D., Northwestern University, 1970
LANDSMAK, MURRAY J. .......................... Associate Professor (Rehabilitation Studies Program), 1969
B.S.; M.A., Ph.D., University of Florida, 1964
LANGSTON, DOUGLAS C. .......................... Instructor (Humanities), 1977
Sarasota Campus
B.A.; M.A., University of California, Irvine, 1975
Lani, JAMES E. .......................... Visiting Assistant Professor (Guidance Education), 1977
B.S.; M.A.; Ph.D., University of Florida, 1975
LANTZ, DONALD L. .......................... Professor (Psychological and Social Foundations Education), 1961
A.B., M.A., Ph.D., University of Minnesota, 1961
LARSEN, MERRITT L. .......................... Associate Professor-Acting Chairperson (Visual Arts), 1967
B.F.A.; M.F.A., Indiana University, 1965
LASSETTER, JAMES, JR. .......................... Assistant Professor (Accounting), 1966
B.S.; M.B.A., University of Chicago, 1964, C.P.A.
LATINA, ALBERT A. .......................... Lecturer (Biology), 1960
B.A.; M.S., Florida State University, 1960
LAVELY, CAROLYN D. .......................... Associate Professor-Chairperson (Exceptional Child Education), 1970
B.S.; M.A., Ph.D., Syracuse University, 1968
LAWRENCE, JOHN M. .......................... Professor (Biology), 1965
B.S., A.M., Ph.D., Stanford University, 1966
LAWSON, STEVEN F. .......................... Assistant Professor (History), 1972
St. Petersburg Campus
B.A.; M.A., Ph.D., Columbia University, 1974
LAX, BERNARD .......................... Associate Professor (Exceptional Child Education), 1969
B.A.; M.A., Ph.D., University of Texas, 1970
LINDER, RONALD .............................. Associate Professor (Ophthalmology), 1972
B.A., M.D., University of Vermont, 1963

LAYMAN, JAY S. ............................ Associate Business Manager (Medical Center), 1971
B.S., Florida State University, 1968

LEAHY, GERARD J. ......................... Lecturer (Florida Center), Affiliate Lecturer (Theatre), 1974
B.A.; M.F.A., Yale School of Drama, 1967

LEAVENGOLD, LEE B. ................. Counselor/Adviser (University Studies, Student Affairs), 1973
B.S.; M.A., University of South Florida, 1973

LEN H., BRUCE V. ........................ Assistant Professor (Art and Music Education), 1973

LE BEAU, REBECCA N. ...................... Instructor (Economics), 1977
B.A.; M.S., Purdue University, 1974

LENTZ, GLENDA F. ........................ Director (Cooperative Education and Placement, Student Affairs), 1968
B.A.; M.A., University of South Florida, 1972

LEVINE, EDWARD L. ....................... Associate Professor (Psychology), 1977
B.S.; Ph.D., New York University, 1970

LEY, ARTHUR B. ............................ Associate Professor (Political Science), 1970
B.A., M.A., Ph.D., Harvard University, 1969

LEY, CHARLENE C. ........................ Assistant Professor (Psychology), 1975 Sarasota Campus
B.A., M.A., Ph.D., Michigan State University, 1975

LEY, JOHN W. ............................... Associate Professor (Social Science and Letters Education), 1972
B.S.; M.A.; Ed.D., University of Georgia, 1970

LEWIS, JAMES E. ............................ Associate Professor (Music Arts), 1971
B.A.; M.M., University of Illinois, 1965

LEWIS, PETER W. ............................ Associate Professor (Criminal Justice), 1976
B.A.; M.A., Ph.D., J.D., Loyola University, Louisiana, 1974

LI, PEI-LUEN ................................ VISITING ASSISTANT PROFESSOR (PHYSICS), 1977
B.Sc.; M.Sc., Ph.D., McGill University, 1973

LIANG, DIANE F. ............................ Assistant University Catalog Librarian (Libraries), 1972
B.A.; M.A.L.S., George Peabody College, 1964

LIANG, JOSEPH J. ........................ Associate Professor (Mathematics), 1970
B.A.; M.A., Ph.D., Ohio State University, 1969

LICHTENBERG, BETTY K. .................. Professor (Math Education), 1971
B.A., M.A.; Ph.D., University of Illinois, 1967

LICHTENBERG, DONOVAN R. .......... Professor (Math Education), 1962
B.A.; M.S., Ph.D., University of Wisconsin, 1966

LILLIBRIDGE, EDMUND M. ............ Clinical Psychologist (Counseling Center, Student Affairs), 1971
B.A.; M.A., Sonoma State College, 1970

LIM, DANIEL V. ............................ Assistant Professor (Biology), 1976
B.A.; Ph.D., Texas A & M University, 1973

LIMOGES, LANCE D. ....................... Assistant Professor (Geography), 1967
B.A., M.A.; Ph.D., University of Florida, 1973

LIN, SHU-WEN T. .......................... Associate Professor (Mathematics), 1963
B.S.; M.S., Ph.D., University of Florida, 1963

LIN, YOUE-FENG ............................ Professor (Mathematics), 1964
B.S.; Ph.D., University of Florida, 1964

LINDER, RONALD ............................ Associate Professor (Childhood and Language Arts Education), 1969
B.S.; M.S., Ed.D., University of Florida, 1969

LINDSEY, BRUCE G. ........................ Assistant Professor (Physiology), 1977
B.A.; Ph.D., University of Pennsylvania, 1974

LINTON, JOE R. .............................. Associate Professor (Biology), 1963
B.A., M.A., Ph.D., University of Missouri, 1962

LITHOOG, ARTHUR W. ...................... Visiting Associate Professor (Theatre), 1976
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LLEWELLYN, JOHN A. ...................... Professor (Chemical Engineering), 1971
B.Sc., Ph.D., University College Cardiff, 1958

LONG, JO ANN .............................. Associate Professor-Program Director (Childhood and Language Arts Education), 1969
A.B., M.Ed., Ph.D., Florida State University, 1969

LOU KAY, JAMES R. ......................... Professor (Finance), 1967
B.A.; M.B.A., Ph.D., Northwestern University, 1956

LORENZEN, WILLIAM A. .................... Associate Professor (Theatre Arts), 1966
B.S.S., M.F.A., Tulane University, 1966

LOVELESS, RICHARD L. .................... Associate Professor (Art and Music Education), 1968
B.S.; M.S., Pennsylvania State University, 1964

LOW, EDMON ...................... Director (Libraries), 1975
Sarasota/Bradenton Campus
B.A.; M.A.L.S., University of Michigan, 1938

LOWE, ALVIN J. ........................... Associate Professor-Chairperson (Reading Education), 1966

LUCOFF, MANNY ............................ Associate Professor (Mass Communications), 1963
B.S., M.A.; Ph.D., University of Iowa, 1971

LUPTON, D. KEITH ......................... Program Director (Interdisciplinary Social Science), 1967
B.S.; LL.B.; M.A., Dartmouth College, 1951

LUTHER, ANITA B. ........................ Assistant in Research (Medicine), 1975 (Part time)

LUTZ, BARBARA K. ........................ Visiting Instructor (Adult and Vocational Education), 1976
B.Ed.; M.A., University of South Florida, 1971

LYMAN, CHARLES P. ........................ Associate Professor (Visual Arts), 1972
B.A.; M.S., Institute of Design, Illinois Institute of Technology, 1969

LYMAN, GARY H. ........................... Assistant Professor (Internal Medicine), 1977
B.A., M.D., State University of New York at Buffalo, 1972

MAASS, PHYLLIS A. ......................... Assistant Professor (Social Work Program), 1976
B.A.; M.S.W., University of America, 1960

MACCULLOUGH, DOUGLAS B. ............ University Registrar (Registrar), 1971
B.S., M.A., University of Florida, 1965

MACDONALD, GWENDOLINE R. ............ Dean-Professor (Nursing), 1973
B.S.; M.A., Ed.D., Columbia University, 1963

MACK, JEFFREY A. ........................ Area Administrator (Housing and Food Service, Student Affairs), 1975
A.B.; M.A., University of South Florida, 1976

MACKEY, E. M. ...................... Professor (Humanities), 1961
A.B., LL.B., M.A., Ph.D., Emory University, 1958

MACKEY, BERNARD A. ...................... Assistant to Vice President (Academic Affairs), 1972
B.F.A.; M.A.; Ph.D., University of Florida, 1977

MALONE, JOHN I. .......................... Associate Professor (Pediatrics), 1972
B.S.; M.D., University of Pennsylvania School of Medicine, 1967

MANDLOW, MARTHA ....................... Counselor/Adviser (Business), 1972
B.Ed.; M.A., University of Chicago, 1948

MANOUCHEHRI, WILLY P. ................. Associate Professor (Aging Studies Program), 1972
B.A., M.A.; Ph.D., University of Southern California, 1971

MANKER, CHARLES C., JR. ........... Professor (Psychological & Social Foundations Education), 1966
B.A., M.R.E., Ph.D., University of Kentucky, 1956

MANN, MARCIA L. ........................ Associate Professor-Program Director (Childhood and Language Arts Education), 1970
B.A.; M.Ed.; Ph.D., University of Nebraska, 1970

MANOUGIAN, MANOOG N. ................. Professor-Chairperson (Mathematics), 1968
B.A., M.A., Ph.D., University of Texas, 1968

MANSER, RICHARD L. ...................... Professor (Biology), 1967
A.B., M.A., Ph.D., Indiana University, 1964

MANTOS, JOHN J. .......................... Assistant Professor (Pathology), 1977
B.S.; B.M.S.; M.D., Harvard Medical School, 1971
MORRIS, BEULAH

MOSELEY, JAMES

Moss, RICHARD L. . . . . . . . . Assistant Professor (Literature), 1975

Sarasota Campus

A.B.; M.A., Ph.D., Duke University, 1966

MILLER, GEORGE H. . . . . Program Director (Southeast Center Cooperative Education Grant), 1960

B.S.; M.S., University of Illinois, 1948

MILLER, KAREN L. . . . . . . Associate in Research (Pediatrics), 1975

MILLER, MARGARET A. . . Assistant Professor (Visual Arts), 1970

MILLER, RICHARD J. . . . . Assistant Professor (Surgery), 1975 (Part time)

B.S.; B.M., M.D., Northwestern University, 1947

MILLER, ROBERT L. . . . . Lecturer (Industrial Systems Engineering), 1971

M.B.S., M.S.E., University of South Florida, 1973

MILLIKEN, DEAN M. . . . . Acting Coordinator (Marine Science), 1973 St. Petersburg Campus

A.B.; M.A., University of South Florida, 1975

MITCHELL, RICHARD A. . . . Ph.D., University of North Carolina, 1957

B.A.; M.A., Ph.D., University of North Carolina, 1963

B.S.; M.A., Ph.D., University of Chicago, 1951

B.A.; M.A., Ph.D., University of North Carolina, 1953

B.A.; M.B.A., Ph.D., Purdue University, 1968

B.A.; M.A., Ph.D., University of North Carolina, 1976

MONLEY, LAURENCE E. . . Professor (Science and Health Education), 1960

B.S.; M.S.; Ph.D., University of Florida, 1956

MONROE, ANNETTA Y. . . . Instructor (Music Arts), 1973

B.M., Oberlin College Conservatory of Music, 1963

MOORE, HARVEY A. . . . . Associate Professor (Sociology), 1974

B.A.; M.S.; Ph.D., Case Western Reserve University, 1972

MOORE, JACK B. . . . . . . . Professor (English), 1962

B.A.; M.A.; Ph.D., University of North Carolina, 1963

MOORE, JUDITH C. . . . . . . Lecturer (Exceptional Child Education), 1973

B.A., M.A., University of South Florida, 1968

MOORE, STEPHEN B. . . . Assistant in Management (Management), 1976

B.A., M.B.A., University of South Florida, 1976

MORGAN, WILLIAM T. . . . Associate Professor (American Studies), 1970

B.A.; M.A., Ph.D., University of Minnesota, 1971

MORLEY, ROSEMARY M. . . Counselor-Adviser (Natural Sciences), 1973

B.A.; M.S., Ed.S., Western Michigan University, 1974

MORMINO, GARY R. . . . . Assistant Professor (History), 1977

B.A.; M.A., Ph.D., University of North Carolina, 1977

MORRILL, JOHN B. . . . . . Professor (Biology), Coordinator (Environmental Studies), 1975 Sarasota Campus

B.A.; M.S.; Ph.D., Florida State University, 1958

MORRIS, BEULAH M. . . . . Assistant University Librarian (Libraries), 1975 Sarasota Campus

B.A.; M.A., Ph.D., University of North Carolina, 1957

MOSELEY, JAMES G., JR. . . Assistant Professor (Religion), 1975 Sarasota Campus

B.A.; M.A., Ph.D., University of Chicago Divinity School, 1973

MOSES, CLIFFORD D. . . . Visiting Instructor (Art), 1975 (Part time)

B.M., M.M., Cleveland Institute of Music, 1975

Moss, RICHARD L. . . . . Assistant Professor (Economics), 1974

B.A.; M.A.; Ph.D., Virginia Polytechnic Institute, 1976

MOTTO, ANNA L. . . . . . . . Professor-Chairperson (Foreign Languages), 1973

B.A.; M.A.; Ph.D., University of North Carolina, 1953

MOYSE, WILLIAM F. . . . . Instructor (Mass Communications), 1971

B.A., M.A., University of South Florida, 1976

MUKHERJEA, ABINAV . . . . . . Assistant Professor (Mathematics), 1969

B.Sc., M.Sc.; Ph.D., Wayne State University, 1967

MUMMI, ROY I. . . . . . . Assistant Professor-Director (Fi. Myers Center), 1966

A.B., A.M.; M.Ed., University of North Carolina, 1953

MURPHY, ROBERT J. . . . . Associate Professor (Economics), 1966

B.A.; M.A.; Ph.D., Fordham University, 1964

MUSGROVE, WALTER J. . . . Professor (Psychological and Social Foundations Education), 1964 St. Petersburg Campus

A.B.; M.A., Ed.D., University of Maryland, 1965

NAEHNING, DOUGLAS C. E. . . . Assistant Professor (Systems Engineering), 1970 St. Petersburg Campus

B.E.; M.Sc., Ohio State University, 1949, P.E.

NAGLE, R. KENT . . . . . . Assistant Professor (Mathematics), 1976

B.S., M.A., Ph.D., University of Michigan, 1975

NEILL, W. TRAMMELL . . . Visiting Assistant Professor (Psychology), 1977

B.A.; M.A., Ph.D., University of Oregon, 1977

NELSON, HARVEY W. . . . . Associate Professor (Interdisciplinary Social Science), 1972

B.A.; M.A.; Ph.D., George Washington University, 1972

NELSON, CARNOT E. . . . . Professor (Psychology), 1971

B.S.; Ph.D., Columbia University, 1966

NELSON, DOUGLAS L. . . . Professor-Program Director (Psychology), 1967

B.A.; M.A., Ph.D., University of Wisconsin, 1967

NELSON, GID E., JR. . . . . Professor (Biology), 1960

B.A.; M.S., Ph.D., University of Florida, 1964

NELSON, LOUIS R. . . . . . Director (Laboratory Animal Medicine) Associate Professor (Pathology), 1971

B.S.; M.S.; D.V.M., Auburn University, 1955

NESMAN, EDGAR G. . . . . . Associate Professor (Sociology), 1968

B.S., M.S.; Ph.D., University of Florida, 1969

NESMAN, MARJORIE P. . . . Counselor/Adviser (Student Personnel Office, Education), 1969 (Part time)

B.S., Michigan State University, 1952

NESS, GENE C. . . . . . . Assistant Professor (Biochemistry), 1974

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NESS, THOMAS E. . . . . Associate Professor-Chairperson (Marketing), 1971

A.B.; B.S.E.; M.S.I.A., Ph.D., Purdue University, 1968

NEUGAARD, EDWARD J. . . . Professor (Foreign Languages), 1964

B.A.; M.A., Ph.D., University of North Carolina, 1964

NEVILLE, DONALD D. . . . . Professor (Reading Education), 1972

B.S., M.Ed.; Ed.D., University of Florida, 1961

NEWCOMBE, P. JUDSON . . . Professor (Social Science and Letters Education), 1970

B.A.; M.A., Ph.D., Northwestern University, 1963

NIGGORSKI, EUGENE J. . . . University Physician (Student Health Service, Student Affairs), 1977

Ph.B., M.D., Boston University, 1931

NICKELS, BRADLEY J. . . . Associate Professor (Visual Arts), 1970

B.D.; M.A., Ph.D., University of Indiana, 1966

NICCOLosi, GREGORY R. . . . Associate Professor (Physiology), Assistant Dean (Student Affairs, Medicine), 1972

B.S.; Ph.D., Ohio State University, 1971

NIENHAUS, HARRY A. . . . . Associate Professor (Electrical Engineering), 1967

B.S., M.S., University of St. Louis, 1964

NIXON, ROBERT L. . . . . . Assistant Professor (Management), 1977

B.S.; M.S.; M.P.A., Ph.D., Cornell University, 1976

NOLAN, MICHAEL F. . . . . Assistant Professor (Anatomy), 1975

B.S.; Ph.D., Medical College of Wisconsin, 1975

NOONAN, JOHN D. . . . . . . Assistant Professor (Foreign Languages), 1975

B.A.; M.A., Ph.D., Columbia University, 1973

NORD, HEINZ J. . . . . . . . Associate Professor (Internal Medicine), 1973

M.D., University of Frankfurt and Freiburg Medical Schools, 1964
NORTHCUTT, TRAVIS J., JR. ........ Dean-Professor (Social and Behavioral Sciences), Acting Director (Human Resources Institute), 1972
B.S., M.S., Ph.D.; M.P.H., University of North Carolina, 1959
NORTON, BRYAN G. ..... Associate Professor (Philosophy), 1975
Sarasota Campus
A.B.; Ph.D., University of Michigan, 1970
OBER, RICHARD L. .......... Professor (Educational Leadership Education), 1969
B.S.; M.A.T.; Ph.D., Ohio State University, 1966
OBERFLOHER, SIGNE W. .. Assistant University Librarian (Libraries), 1974 St. Petersburg Campus
B.A.; M.L.S., Rutgers University, 1967
OCHSHORN, JUDITH .... Assistant Professor (Interdisciplinary Social Science), 1969
B.A.; M.A., New York University, 1956
OCHSHORN, MYRON G. ....... Associate Professor (English), 1963
B.A.; M.A., Ph.D., University of New Mexico, 1963
OD'NEILL, MAURICE E. .......... Associate Professor (Political Science), 1966
B.S.; M.S., M.A., Georgia Institute of Technology, 1968
O'DORA, THOMAS A. .......... Assistant Professor (Radiology), 1976 (Part time)
B.S., M.D., Jefferson Medical College, 1969
OLESN, NORMAN L. .......... Professor-Chairperson (Physics), 1969
B.S., M.S., Ph.D., University of Wisconsin, 1940
OLESN, ANGELO D. ....... Professor (Marketing), 1968
B.S.; M.A., University of South Florida, 1968
OHABUZU, FESTUS U. .... Professor-Program Director (African-American Studies), 1972
B.A.; M.A.; Ph.D., University of Denver, 1967
OHARA, ROBERT C. .............. Professor (Linguistics), 1961
B.A., M.A., University of Louisville, 1953
OKULSKY, THOMAS A. .......... Assistant Professor (Radiology), 1960
B.S., M.S., M.A., Washington University School of Medicine, 1956
O'MALLEY, BRENDAN C. .......... Assistant Professor (Medicine), 1976
B.S., Ch.B., Sheffield University, England, 1970
O'MALLEY, REBECCA M. ........ Visiting Assistant Professor (Chemistry), 1976
B.S.; Ph.D., University of Sheffield, England, 1970
OORDOY, ANDREAS J. .......... Assistant University Librarian (Libraries), 1975
B.A.; B.S.; M.S.L.S., Kansas State Teachers College, 1969
ORLOSKY, DONALD E. .......... Professor (Educational Leadership, Education), 1969
B.A.; M.S., Ed.D., Indiana University, 1969
OBB, MARK T. ............... Professor-Chairperson (Interdisciplinary Social Science), 1966
B.A.; Ph.D., University of North Carolina, 1954
O'SULLIVAN, PETER B. ........ Professor (Theatre), 1963
B.A., M.A., University of North Carolina, 1957
OTT, RUTH A. ........... Visiting Counselor/Adviser (Continuing Education), 1975 Sarasota Campus
B.A., University of South Florida, 1975
OWEN, TERENCE C. ....... Professor-Chairperson (Chemistry), 1964
B.Sc., Ph.D., University of Manchester, England, 1964
OWEN, WILLIAM D. ........ Professor (Music Arts), Assistant Dean (Fine Arts), 1964
B.M.; M.M., North Texas State University, 1960
PALS, TERRY L. .............. Assistant Professor (Spanish), 1973
Sarasota Campus
B.A.; M.A., Ph.D., University of Kansas, 1974
PALM, JOHN W. ......... Instructor (Interdisciplinary Social Science), 1970
PALLMER, JAMES N. .......... Lecturer (English), 1966
B.A.; M.A., University of North Carolina, 1958
PALMER, ROBERT E., SR. ....... Associate Professor (Adult and Vocational Education), 1970
B.S., M.S., Ph.D., Florida State University, 1969
PANTHER, EDWARD E. .......... Associate Professor-Chairperson (Guidance Education), 1969
B.S., M.S., Ed.D., State University of New York at Buffalo, 1969
PAPPAS, GEORGE ............. Professor (Visual Arts), 1966
B.S., M.A., Ed.D., Pennsylvania State University, 1957
PARADISE, LOIS J. .......... Associate Professor (Medical Microbiology), 1973
A.B.; M.S., Ph.D., University of Michigan, 1960
PARKER, JOHN W., JR. ........ Professor (English), 1963
B.A.; M.A.; Ed.D., University of Kentucky, 1961, Ed.S.
PARKER, KEITH A. ........... Assistant Professor (History), 1966
B.A.; M.A.; Ph.D., University of Maryland, 1965
PARRADO, ADRIAN A. ....... Clinical Psychologist-Assistant Professor (Counseling Center, Student Affairs), 1969
B.S.; M.A.; Ed.D., Nova University, 1975
PARRISH, JAMES A., JR. ........ Professor (English), 1960
B.S.; M.A.; Ph.D., Florida State University, 1955
PARROTT, WILLIAM H .......... Associate Professor (Accounting), 1976
B.A., M.Accy., Ph.D., University of Illinois, 1971
PASCAL, ROBERT R. ......... Professor (Pathology), 1975 (Part time)
A.B.; M.D., Columbia College of Physicians and Surgeons, 1962
PASELL, NICHOLAS .......... Assistant Professor (Mathematics), 1975 Sarasota Campus
B.A.; M.S., Ph.D., University of Chicago, 1969
PATTERSON, GERALD E. ....... Associate Professor (Adult and Vocational Education), 1971
B.A.; M.A., Ph.D., Ohio State University, 1970
PATTERSON, MICHAEL H. .......... Director (University Physical Planning, Facilities Planning), 1973
B.A., University of Florida, 1969
PAULSON, Darryl G. ....... Assistant Professor (Political Science), 1974 St. Petersburg Campus
B.A.; M.S., Ph.D., Florida State University, 1975
PAYNE, CHARLES E. ........ Professor-Director (Engineering Technology), 1965
B.S., M.E., M.S.E., University of Florida, 1965, P.E.
PEARCEY, WALTER E., JR. .......... Instructor (Childhood and Language Arts Education), 1970
B.A., M.A., University of South Florida, 1971
PENNER, LOUIS A. .......... Associate Professor (Psychology), 1969
B.A., M.A.; Ph.D., Michigan State University, 1969
PEPPARD, VICTOR E. ........ Assistant Professor (Foreign Languages), 1975
B.A., M.A.; Ph.D., University of Michigan, 1974
PEREZ, LOUIS A., JR. .......... Associate Professor-Acting Chairperson (History), 1970 Ed.
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PERRY, L. DOUGLAS .......... Assistant Professor (Ophthalmology), 1976
B.S., M.S., M.D., University of Louisville, 1967
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PEVICK, STEPHEN H. ........ Assistant Professor (Visual Arts), 1972
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PEYTER, FRED C. ............ Associate Professor-Chairperson (Library, Media, and Information Studies Education), 1976
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PFITZ, GEORGE W. .. Associate Professor (Reading Education), 1967
PHILPS, CHRISTOPHER P. ....... Assistant Professor (Anatomy), 1976
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PICKERING, MICHAEL J. . . . . . . . . Associate Professor (Internal Medicine), 1975
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B.A., M.A., University of South Florida, 1976

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Pothoven, KENNETH L. . . . . . Associate Professor-Assistant Chairperson (Mathematics), 1970
A.B.; M.A., Ph.D., University of Kansas, 1965

Powell, ROBERT W. . . . . . . . . Professor (Psychology), 1966
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Powell, RUDOLPH F. . . . . . . . . Counseling Psychologist (Counseling Center, Student Affairs), 1974
B.A., M.S., Florida State University, 1973

Power, FRED B. . . . . . . . . . . . Assistant Professor (Finance), 1964
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B.A.; M.D., University of Pennsylvania, 1959

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Puglisi, DICK J. . . . . . . . . . . . Associate Professor (Social Science and Letters Education), 1969
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Pulliam, DAVID M. . . . . . . . Associate Director (University Center, Student Affairs), 1966
B.S., High Point College, 1950

Purdom, DANIEL M. . . . . . . . . Professor (Educational Leadership, Education), 1968
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Raber, DOUGLAS J. . . . . . . . . Associate Professor (Chemistry), 1970
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Ratliff, JOHN L. . . . . . . . . . Associate Professor (SMF-Engineering), 1969
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B.S.; M.S.; Ph.D., Wayne State University, 1966

Ray, JAMES D., JR. . . . . . . . Dean-Professor (Natural Science), 1959
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Reade, WILLIE D. . . . . . . . Associate Professor (English), 1963
A.B.; M.A.; Ph.D., University of Florida, 1962

Reading, ANTHONY J. . . . . Professor-Coordinator (Psychiatry), 1975
M.D.; M.P.H., Sc.D., Johns Hopkins University, 1964

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B.A.; M.S.L.S., Florida State University, 1963

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ROBINSON, JACK H. ....... Professor (Measurement and Research Education), 1963 St. Petersburg Campus

B.S.; M.A.; Ed.D., Harvard University, 1960

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ROOT, ALLEN W. ....... Professor-Associate Chairperson (Pediatrics), 1973

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ROSEL, NATALE E. ....... Assistant Professor (Sociology), Coordinator (Off-Campus Study Program, New College) 1975, Sarasota Campus

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ROSENZWEIG, ABRAHAM ....... Visiting Professor (Geology), 1977

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B.S.M.E., M.S.A.E.; M.S.E.M., Ph.D., University of Florida, 1954, P.E.

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ROSS, WILLIAM T. ....... Associate Professor (English), 1970

B.A.; M.A., Ph.D., University of Virginia, 1970

ROTHWELL, STUART C. ....... Professor (Geography), 1965

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B.A.; M.B.A., University of South Florida, 1974

RUBIN, STEVEN J. ....... Associate Professor (English), 1969

B.A.; M.A., Ph.D., University of Michigan, 1969

RUNDUS, DEWEY J. ....... Associate Professor (Psychology), 1972

B.S.; Ph.D., Stanford University, 1970

RUTENBERG, DANIEL ....... Professor-Chairperson (Humanities), 1964

A.B., M.A.; Ph.D., University of Florida, 1967

RYON, JAMES M. ....... Instructor (Music Arts), 1973

B.S., Yale College, 1973

SABA, HUSAIN I. ....... Assistant Professor (Internal Medicine), 1975 (Part time)

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SADLERSWIL, RONALD W. ....... Assistant Professor (Surgery), 1976 (Part time)

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SAENZ, ARMANDO ....... Associate Professor (Psychiatry), 1975

B.A.; M.D., University of Texas, Southwestern Medical School, 1963

SAFF, DONALD J. ....... Professor (Fine Arts), 1965

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SAFF, EDWARD B. ....... Professor (Mathematics), 1969

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SANDLER, JACK ....... Professor (Psychology), 1969

B.A.; M.S.; Ph.D., Florida State University, 1969

SANTOS, STUART L. ....... Assistant in Research (Biology), 1973

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B.A.; Ph.D., University of Southern California, 1973

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