EDR 634. CURRICULUM AND SUPERVISION PROBLEMS IN READING (4)
PR: EDE 609, EDF 605, EDR 409, EDR 631, and EDR 632. Planning and administering programs and preparation as consultants in reading. Intensive work on individual project required.

EDR 635. SURVEY OF READING RESEARCH (4)
PR: EDF 605 and EDF 607, most of EDR courses and Cl. Course deals with research in reading—a review of research conducted by student and presented in written form.

EDR 709. READING AS A SYMBOLIC PROCESS (4)
PR: EDR 409 or EDE 609. Advanced Graduate standing in Reading/Language Arts or Cl. Examination and understanding of the relationship of the various perceptual, learning, affective and cognitive processes to the acquisition of reading competencies.

EDW 643. CURRENT TRENDS IN READING (4)
PR: Admission to College of Education or Cl. Evaluation of past and present curriculum in Secondary Social Science.

EDW 659. SEMINAR IN SOCIAL SCIENCE EDUCATION (4)
PR: EDF 303 or EDF 605, EDF 607 or Cl. To increase general technological knowledge of graduate students in Social Science Education.

Speech Communication-English Education (EDT)

UPPER LEVEL COURSES

EDT 423. DIRECTING SPEECH ACTIVITIES IN THE SECONDARY SCHOOL (5)
PR: 15 hours of speech communication courses or Cl. Coaching and directing cocurricular activities in discussion, debate, oratory, theatre, oral interpretation, and extemporaneous speaking. Planning and supervision of tournaments, contests, and festivals. Observations required. (Formerly EDT 523)

EDT 424. READING IN SPEECH COMMUNICATION INSTRUCTION (2)
PR: EDR 407 or in conjunction with this course. Strategies and materials for teaching oral and silent reading in speech and theatre classes at the secondary school level. (Formerly EDT 524.)

FOR GRADUATE STUDENTS ONLY

EDT 621. CURRENT TRENDS IN TEACHING SPEECH COMMUNICATION (5)
PR-Cl. Curricular patterns; preparation of personnel; instructional materials, facilities and practices used in teaching speech communication.

EDT 622. SEMINAR IN THE HISTORY OF SPEECH COMMUNICATION IN EDUCATION (5)
PR-Cl. Studies in selected sources, critical writings, and research which have contributed to the development of speech communication as an academic discipline.

Vocational and Adult Education (EDV)

LOWER LEVEL COURSES

EDV 207. THE TEACHER IN A WORLD OF WORK (4)
A study of educational efforts in preparing people for work, the relationship of a job to man's life style, and the concept of education as a lifelong process.

UPPER LEVEL COURSES

EDV 353. ADMINISTRATIVE OFFICE MANAGEMENT (5)
Functions of the business office to include systems and procedures, communications, records management, office employee behavior, controlling the work of the office, and principles of office organization. Also includes the methodology necessary for teaching these areas in either separate courses or integrated block programs.

EDV 361. BUSINESS AND OFFICE MACHINES (5)
PR: Basic Typewriting. Instruction and practice on selected business and office machines to acquaint students with capabilities and limitations of the machines. Instruction and reading on teaching methodology for business and office.

EDV 406. ORGANIZATION AND COORDINATION OF COOPERATIVE PROGRAMS (4)
A study of the purposes and processes used to organize, plan, direct, control, and evaluate cooperative programs.

EDV 407. PRINCIPLES OF ADULT AND VOCATIONAL EDUCATION (4)
An overview of current policies and principles to include their historical, sociological and philosophical bases out of which principles of adult and vocational education have been accepted and implemented. (Formerly EDV 507.)
EDV 431. SUPERVISED FIELD EXPERIENCE:  
(Specialization)  
(4-8)  
PR: Cl. Planned supervised functions in the area of specialization and co-ordinated with selected schools, government, offices, social agencies, businesses and industries on site.  

†EDV 443. SPECIAL TEACHING METHODS:  
(Specialization)  
(5)  
Methods, techniques, and materials for skill development.  

†EDV 445. METHODS OF TEACHING:  
(Specialization)  
(4)  
Methods, techniques, and materials for instruction. This course will specialize in Diversified Cooperative Training.  

EDV 461. OFFICE OCCUPATIONS PROCEDURES  
(5)  
PR: EDV 361, and Senior standing. This course is designed to integrate learnings from preceding business and office education courses. Applications involve actual and simulated office situations, problems, and evaluation. Emphasis is placed on the qualifications needed for efficient business office operations.  

EDV 480. FACILITY DESIGN AND MANAGEMENT  
(4)  
Design and develop instructional facility floor plans consistent with modern and efficient methods of instruction as well as evaluate existing classrooms, laboratories, and shops. Selection and location of equipment. Review and prepare operational plans for the management of equipment, furniture, tools, and supplies as they relate to effective student learning.  

FOR SENIORS AND GRADUATE STUDENTS  
†EDV 503. CURRICULUM CONSTRUCTION:  
(Specialization)  
(4)  
Planning and organizing an instructional program for the purpose of developing an occupational competency.  

EDV 504. PREPARATION AND DEVELOPMENT FOR TEACHING  
(4)  
The development of selected instructional materials, use of new educational media, performance evaluation instruments, and counseling techniques.  

EDV 505. THE ADULT LEARNER  
(4)  
PR: EDF 305 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.  

†EDV 506. PROGRAM MANAGEMENT:  
(Specialization)  
(4)  
Organization, co-ordination, and budgeting of adult, co-operative, and special programs.  

EDV 508. OCCUPATIONAL SAFETY AND HEALTH (OSHA)  
(4)  
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.  

EDV 511. SCHOOL-COMMUNITY DEVELOPMENT  
(4)  
An approach to identifying, assessing, and analyzing individual, institutional, and community needs, for the purpose of cooperative program planning, community involvement and public support.  

FOR GRADUATE STUDENTS ONLY  
EDV 605. ADULT BASIC EDUCATION  
(4)  
An overview of adult basic education with emphasis on current issues and problems of curriculum and instruction in program development for culturally different adults.  

EDV 621. INDIVIDUALIZED INSTRUCTION  
(4)  
Attention is given to individualized instruction to include the special needs student, the slow learner, and the more capable student.  

EDV 631. CURRENT TRENDS  
(4)  
Historical information, issues, current trends, new dimensions and problems in the area of specialization.  

EDV 641. STAFF DEVELOPMENT  
(4)  
Implementation of new procedures addressed to discreet developmental needs of the staff as identified by an educational agency.  

†EDV 651. PRACTICUM:  
(Specialization)  
(4-8)  
A problem-centered field study in the local community, school, government, office, social agency, business or industry.  

EDV 661. SUPERVISION OF LOCAL PROGRAMS: ADULT OR VOCATIONAL  
(4)  
PR: Cl. A study of the factors involved in the supervision of instruction including plans for teacher education, improvement of instruction, coordination of activities, and personnel relations.  

EDV 671. ADMINISTRATION OF LOCAL PROGRAMS:  
ADULT OR VOCATIONAL  
(4)  
A study of the organization, selection of personnel, assignment of duties and responsibilities, and establishment of policies and procedures to accomplish the objectives of the local program within the federal, state, and local requirements.  

EDV 687. SEMINAR  
(4)  
PR: EDF 605 & 607. Applied research techniques and investigation of important current issues of theses is the area of specialization.  

*Areas of specialization in these courses are: Adult Education, Business Education, Distributive Education, and Industrial-Technical Education.  

ENGINEERING  


Basic and Interdisciplinary Engineering Course Work (EGB)  

LOWER LEVEL COURSES  
EGB 101. GRAPHIC ANALYSIS I  
(3)  
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 session. Lec-Lab.  

EGB 102. GRAPHIC ANALYSIS II  
(3)  

EGB 103. GRAPHIC ANALYSIS III  
(3)  
CR: EGB 101. An elective course designed for students with limited background in pre-calculus mathematics necessary for graphical processes. Emphasis on graphical concepts of algebraic and trigonometric relationships.  

EGB 194. GRAPHIC ANALYSIS IV  
(3)  
Continuation of EGB 103.  

EGB 105. ENGINEERING ORIENTATION  
(1)  
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.)

**EGB 320. ENGINEERING PROBLEMS I**
- PR: None. Basic computer operation and programming concepts. Use of FORTRAN in solving engineering type problems.
- (2)

**EGB 204. ANALYSIS & COMPUTATION I**
- PR: None. Basic computer operation and programming concepts. Use of FORTRAN in solving engineering type problems.
- (3)

**EGB 208. INTRODUCTION TO ENGINEERING I**
- PR: None. To present an overview of Engineering, its role and its concepts. Experimental program; see advisor.
- (3)

**EGB 209. INTRODUCTION TO ENGINEERING II**
- PR: EGB 208. Continuation of EGB 208. (Experimental program.)
- (3)

**UPPER LEVEL COURSES**

**EGB 301. ENGINEERING PROBLEMS II**
- CR: MTH 352. Continuation of EGB 201.
- (2)

**EGB 302. ENGINEERING PROBLEMS III**
- CR: MTH 353. Continuation of EGB 301.
- (2)

**EGB 303. ENGINEERING PROBLEMS IV**
- (2)

**EGB 304. ANALYSIS & COMPUTATION II**
- PR: EGB 204 or equivalent. Use of FORTRAN and WATFIV in solving engineering problems. Use of computer libraries.
- Structure and use of SIMSCRIPT in systems simulation.
- (3)

**EGB 306. ENGINEERING STATISTICS I**
- CR: MTH 352. An introduction to the basic concepts of statistical analysis. Probability, distribution functions. (Formerly EGS 461.)
- (3)

**EGB 311. INTRODUCTION TO ELECTRICAL SYSTEMS I**
- (4)

**EGB 312. INTRODUCTION TO ELECTRICAL SYSTEMS II**
- PR: EGB 311. Continuation of EGB 311.
- (4)

**EGB 313. INTRODUCTION TO ELECTRICAL SYSTEMS III**
- PR: EGB 311. Continuation of EGB 311 or EGB 312.
- (4)

**EGB 321. THERMODYNAMICS I**
- (4)

**EGB 322. THERMODYNAMICS II**
- (3)

**EGB 325. DYNAMICS RESPONSE OF ENGINEERING SYSTEMS I**
- PR: PHY 303, 305. Linear dynamic analysis of electrical, mechanical, pneumatic, hydraulic and thermal systems. Introduction to analog computers; LaPlace transformation. Block diagram representation, transient and frequency response. Lec.-Dem.
- (4)

**EGB 337. ENGINEERING VALUATION I**
- PR: EGB 204. A study in analyzing the economic limitations imposed on engineering activities using basic models which consider the time value of money.
- (3)

**EGB 340. SOLID MECHANICS I**
- (3)

**EGB 341. SOLID MECHANICS II**
- (3)

**EGB 342. MATERIALS ENGINEERING I**
- PR: CHEM 213, EGB 340. 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.
- (4)

**EGB 343. FLUIDS I**
- (4)

**EGB 344. DEFORMABLE BODIES**
- PR: EGB 340. Stress, strain, Hooke's Law; torsion, beam, column analysis; combined stresses; inelastic effects; limit design. Lec.-problem.
- (3)

**EGB 345. MATERIALS ENGINEERING II**
- PR: EGB 342. Continuation of EGB 342.
- (3)

**EGB 346. FLUIDS II**
- (4)

**EGB 401. ENGINEERING ANALYSIS I**
- (4)

**EGB 405. NUMERICAL METHODS I**
- PR: EGB 401. Study and application of matrix algebra, differential equations and calculus of finite differences. (Formerly EGS 541.)
- (3)

**EGB 481. PROFESSIONAL ENGINEERING SEMINAR I**
- PR: CI. A lecture-discussion seminar on modern trends in the engineering profession.
- (1-5)

**EGB 483. PROFESSIONAL ENGINEERING SEMINAR II**
- PR: CI and Senior standing. An examination of current engineering and related problems facing the graduating senior. (S/U Only.)
- (1-5)

**EGB 501, 502, 503, 504, 505. ENGINEERING ANALYSIS I, II, III, IV, V, VI**
- PR: CC or MTH 401. 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.
- (3, 3, 3, 3, 3)

**EGB 601. 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.
- (3)

**EGB 610. SCIENTIST IN THE SEA I**
- PR: CI and diver certification (NAV I 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 listed as MSC 610.)
- (4)

**EGB 611. SCIENTIST IN THE SEA II**
- PR: CI and diver certification (NAV I 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. Lec.-lab. (Also listed as MSC 611.)
- (4)

**EGB 612. SCIENTIST IN THE SEA III**
- PR: CI and diver certification (NAV I 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 listed as MSC 612.)
- (4)

**EGB 699. RESEARCH OR DESIGN**
- PR: CC. Supervised independent research or design. May be repeated. (S/U only.)
- (1-9)

**EGB 798. RESEARCH AND DISSERTATION**
- PR: Admission as candidate for Ph.D. program. Supervised independent research. May be repeated for credit. (S/U only.)
- (1-12)
## Electrical and Electronic Systems (EGE)

### UPPER LEVEL COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGE 301</td>
<td>LABORATORY I</td>
<td>1</td>
</tr>
<tr>
<td>PR:</td>
<td>EGB 311.</td>
<td></td>
</tr>
<tr>
<td>EGE 302</td>
<td>LABORATORY 2</td>
<td>1</td>
</tr>
<tr>
<td>PR:</td>
<td>EGB 312.</td>
<td></td>
</tr>
<tr>
<td>EGE 303</td>
<td>LABORATORY 3</td>
<td>1</td>
</tr>
<tr>
<td>PR:</td>
<td>EGE 301.</td>
<td></td>
</tr>
<tr>
<td>EGE 310, 410</td>
<td>NETWORK ANALYSIS AND DESIGN I, II</td>
<td>3, 3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGB 311. A second course in linear circuit analysis and design. Transient and steady-state responses of passive R-L-C networks to various forcing functions. Includes the analysis and design of amplifiers and switching circuits.</td>
<td></td>
</tr>
<tr>
<td>EGE 320, 420</td>
<td>ELECTRONICS I, II</td>
<td>3, 3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGB 312. A second course in the physical principles of electronic devices with emphasis on semi-conductor electronics. Includes the analysis and design of amplifiers and switching circuits.</td>
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<tr>
<td>EGE 404</td>
<td>LABORATORY 4</td>
<td>1</td>
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<tr>
<td>EGE 405</td>
<td>LABORATORY 5</td>
<td>1</td>
</tr>
<tr>
<td>EGE 406</td>
<td>LABORATORY 6</td>
<td>1</td>
</tr>
<tr>
<td>EGE 410</td>
<td>SEE EGE 310.</td>
<td></td>
</tr>
<tr>
<td>EGE 411</td>
<td>LINEAR SYSTEMS ANALYSIS</td>
<td>3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGE 410. Provides further study in the analysis of linear networks and systems. Includes time and frequency domain points of view. LaPlace, Fourier and superposition integrals.</td>
<td></td>
</tr>
<tr>
<td>EGE 420</td>
<td>SEE EGE 320.</td>
<td></td>
</tr>
<tr>
<td>EGE 421</td>
<td>COMMUNICATION CIRCUITS</td>
<td>3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGE 420. Provides further study in electronic circuits. Includes oscillator, modulator, and detector analysis and design.</td>
<td></td>
</tr>
<tr>
<td>EGE 425</td>
<td>COMMUNICATION ENGINEERING</td>
<td>3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGE 421. System considerations of electronic circuits; radio propagation; antennas; transmitters and receivers.</td>
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<tr>
<td>EGE 426</td>
<td>COMMUNICATIONS LABORATORY</td>
<td>1</td>
</tr>
<tr>
<td>CR:</td>
<td>EGE 425. Experiments in amplitude modulation, frequency modulation, pulse communications and data transmission.</td>
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<tr>
<td>EGE 430</td>
<td>SEE EGE 330.</td>
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<tr>
<td>EGE 432</td>
<td>DISTRIBUTED NETWORKS</td>
<td>3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGE 330, EGE 410. Transmission lines standing waves, impedance, waveguides.</td>
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<tr>
<td>EGE 435</td>
<td>SYSTEMS APPROACH TO BIOMEDICAL ENGINEERING I</td>
<td>3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGE 410 or CC. Characterization of physiological systems, principles of modeling, system properties. Transfer function description, physiological feedback, effects of nonlinearities. (Formerly EGS 432.)</td>
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<tr>
<td>EGE 436</td>
<td>SYSTEMS APPROACH TO BIOMEDICAL ENGINEERING II</td>
<td>3</td>
</tr>
<tr>
<td>EGE 440</td>
<td>LINEAR CONTROL SYSTEMS</td>
<td>3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGB 325, EGE 420. Introduction to analysis and design of linear feedback control systems. Covers block diagram, flow charts, Bode, Nyquist and root locus techniques.</td>
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<tr>
<td>EGE 441</td>
<td>CONTROL LABORATORY</td>
<td>1</td>
</tr>
<tr>
<td>CR:</td>
<td>EGE 440.</td>
<td></td>
</tr>
<tr>
<td>EGE 444</td>
<td>LOGIC DESIGN</td>
<td>3</td>
</tr>
<tr>
<td>PR:</td>
<td>EGB 312. Non-majors may enroll with the consent of the Chairman. Binary number system; truth functions; Boolean algebra; canonical forms; minimization of combinational logic circuits; logic circuits in computers.</td>
<td></td>
</tr>
</tbody>
</table>

### EGE 445. LOGIC LABORATORY

CR: EGE 444.

### EGE 450. MICROELECTRONICS ENGINEERING


### EGE 451. MICROELECTRONICS LABORATORY

CR: EGE 450.

### EGE 460, 462, 464. ELECTROMECHANICS I, II, III


### EGE 461, 463, 465. ELECTROMECHANICS LAB I, II, III

CR: EGE 460, 462, 464, respectively.

### EGE 470. COMPUTER SYSTEMS

PR: EGB 304, MTH 353 or CC. Linked course with EGE 471. Principles of computer organization, machine and assembly language programming.

### EGE 471. COMPUTER SYSTEMS LAB

PR: EGB 304, MTH 353 or CC. Linked course with EGE 470. Computer systems and programming laboratory.

### EGE 472. INTRO TO SYSTEMS PROGRAMMING

PR: EGE 470. Introduction to systems programming, design of assemblers, loaders, linking, data structures and operating systems.

### EGE 473. PROGRAMMING LANGUAGES

PR: EGE 470. An introduction to programming languages, syntax and semantics, properties of algorithmic languages, binding times, arithmetic, string handling, data structures, list processing, translation.

### EGE 474, 476, 478. SYSTEMS ANALYSIS I, II, III

CR: CC. A course series to permit non-electrical majors to take advanced course work in the electrical area.

### EGE 475, 477, 479. SYSTEMS LABORATORIES I, II, III

CR: EGE 474, 476, 478 respectively.

### EGE 480, 481, 482. SPECIAL ELECTRICAL TOPICS I, II, III

(1-4 each)

### EGE 498. COMPUTER SCIENCE PROJECT

Projects intended to develop individual interests and abilities in computer science involving either computer hardware or software aspects of a well defined proposal.

### EGE 499. DESIGN PROJECT

PR: Senior standing. An individual or team project involving the design of an electrical component or system. Required of all electrical seniors.

### EGE 520. PULSE CIRCUIT PRINCIPLES

PR: EGE 411, 421. An introduction to the analysis and design of pulse and timing circuits with applications.

### EGE 530. UHF PRINCIPLES

PR: EGE 411, 421, 430. A study of tubes, devices and circuits peculiar to systems which operate at ultra high and super high frequencies.

### EGE 531. UHF LABORATORY

CR: EGE 530.

### EGE 540. NONLINEAR CONTROL SYSTEMS


### EGE 541. CONTROL LABORATORY

CR: EGE 540.

### EGE 542. SEQUENTIAL CIRCUITS

PR: EGE 444. The design of switching circuits with inputs that are functions of time is carried from a word description through a minimum state realization using flip-flops, logic gates and delay elements.

### EGE 544. DIGITAL COMPUTERS

PR: EGE 444. Digital arithmetic; computer subsystems, arith­metic units; control units; memory units; general purpose computers.
EGE 545. DIGITAL LABORATORY
CR: EGE 544.

EGE 546. DIGITAL SIGNAL PROCESSING
TECHNIQUES
PR: EGE 411 or CC. Techniques of real time statistical analysis
of signals, signal conditioning and enhancement. Design
of digital networks. (Formerly EGB 523.)

EGE 547. DISCRETE STRUCTURES FOR DIGITAL
SYSTEMS
PR: EGE 444. Set algebra, basic algebraic structures in com-
puters, Boolean algebra, propositional logic, and graphs. Ap-
plications to computers.

EGE 548. ELECTRICAL MEASUREMENTS
PR: EGE 411. Techniques and principles of electronic mea-
surement.

EGE 549. MEASUREMENTS LABORATORY
CR: EGE 548.

EGE 560. POWER SYSTEMS ANALYSIS
PR: CC. Analysis techniques for AC power systems.

EGE 562. COMPUTER ANALYSIS OF POWER
SYSTEMS
PR: CC. Review of Fortran programming, matrix algebra,
and computer formulation, short circuit studies, simulation of alge-
braic equations, load flow studies, numerical solution of dif-
ferential equations, transient stability studies. Strong emphasis
on techniques adaptable to digital computer studies, programs
will be written and run on the IBM 360/65.

EGE 570. TOPICS IN COMPUTERS AND
PROGRAMMING
PR: CC. Machine organization, assembly and machine lan-
guage, data structures, systems programming, operating sys-
tems.

EGE 573. IMAGE PROCESSING BY COMPUTERS
PR: EGE 411 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. (Formerly EGS 525.)

EGE 580, 581, 582. SPECIAL ELECTRICAL
TOPICS I, II, III
PR: CC.

EGE 585. ENGINEERING SEMINAR
PR: CC.

EGE 599. RESEARCH OR DESIGN
PR: CC. (S/U only.)

EGE 610, 611. ADVANCED CIRCUIT THEORY I, II
PR: CC. Network fundamentals; network characterization;
frequency analysis; superposition integrals; signal-flow tech-
niques; stability problems; real-and-imaginary relations.

EGE 612. NONLINEAR CIRCUITS
PR: CC. Analytical and topological approaches to nonlinear
circuits; nonlinear resonance; relaxation oscillations.

EGE 614, 615, 616. NETWORK SYNTHESIS, I, II, III
PR: CC. Network functions; physical realizability; two-ter-
tinal network synthesis methods; frequency transformation;
potential analogy; approximation problems; insertion-loss and
transfer function synthesis.

EGE 620. INFORMATION THEORY
PR: CC. Concepts of information, information channels, chan-
cel capacity, information sources and Shannon's fundamental
theorem.

EGE 622. NOISE THEORY
PR: CC. Electrical noise and signals through linear filters
and electronic systems.

EGE 623. CODING THEORY I
PR: CC. Error-correcting codes, algebraic block codes, linear
codes and feedback shift registers. BCH codes and decoding
methods.

EGE 624. CODING THEORY II
PR: EGE 623. Convolutional codes; threshold decoding and se-
quential decoding, Burst error codes. Arithmetic codes.

EGE 626, 627, 628. THEORY OF
COMMUNICATION I, II, III
(3, 3, 3)

PR: CC. Physical basis and statistical representation of elec-
trical noise; filtering, modulation, and de-modulation of signals
corrupted by noise; correlation techniques and linear pre-
diction; statistical estimation of signal parameter; optimum
filters and receivers; ambiguity functions and inverse proba-
bility. Quantitative measure of information sources, noise
channels and channel capacity; an introduction to error-
correcting codes.

EGE 630, 631, 632. ELECTROMAGNETIC FIELDS AND
WAVES I, II, III
PR: CC. Electromagnetic theory from the engineering point of
view, propagation and reflection of waves, guided waves,
resonant cavities, antennas and radiation.

EGE 635. MICROWAVE GENERATION AND
AMPLIFICATION
PR: CC. A study of electromagnetic wave generation and
amplification. Magnetrons, klystrons, solid-state microwave
oscillators and related devices.

EGE 636. ELECTRICAL LABORATORY
CR: EGE 635.

EGE 637. MICROWAVE COMPONENTS
PR: CC. A study of directional couplers, junctions, cavities
and other passive microwave components including microwave
integrated circuits.

EGE 638. MICROWAVE NETWORKS
PR: CC. Scattering and transfer representations of n-ports.
Odd and even mode theory. Wave filters.

EGE 639. ELECTRICAL PROPERTIES OF
THIN FILMS
PR: EGE 430 and EGE 450 or equivalent or CC. Electrical
Properties of thin films as derived from Boltzmann's transport
equation. The growth of thin films. The fabrication of elec-
trical circuits with thin films. Lecture supplemented by labo-
atory experiments and demonstrations.

EGE 640. DIGITAL CONTROL SYSTEMS
PR: EGE 440 or CC. Sample-data and digital control pro-
cesses.

EGE 641. RANDOM PROCESSES IN CONTROL
SYSTEMS
PR: EGE 440 or CC. Analysis and design of control systems
subject to random inputs and disturbances.

EGE 642. MODERN CONTROL THEORY
PR: EGE 440, 540, 640, 641 or CC. A study of modern con-
trol techniques including optimum and adaptive control.

EGE 643. OPTIMUM FILTERING AND
IDENTIFICATION
PR: CC. or EGE 640. Estimation theory and development of
the Kalman-Wiener filters for continuous and discrete-time sys-
tems. System identification through deterministic and
stochastic approaches. Application to control and communica-
tion systems.

EGE 644. AUTOMATA THEORY I
PR: EGE 547. Review of mathematical foundations, decom-
position and interconnection of digital machines, measurement
and control of finite-state sequential circuits, machine identifi-
cation, regular expressions and finite-state machines.

EGE 645. AUTOMATA THEORY II
PR: EGE 644. Vector spaces over finite fields, linear sequential
circuits, pseudo-random sequences, Turing machines, recursive
function computability.

EGE 646. AUTOMATA THEORY III
PR: EGE 645. Artificial languages, phase-structure grammars,
operations on languages, decision problems, discrete value
random processes, Markov processes, probabilistic sequential
machines, non-deterministic sequential machines.

EGE 647. SIMULATION TECHNIQUES FOR
ELECTRICALS
PR: CC. Theory of simulation of systems characterized by
lumped and distributed parameters.

EGE 648. ELECTRICAL MEASUREMENTS
PR: CC. Advanced techniques and principles of electronic
measurement.
EGE 649. MEASUREMENTS LABORATORY (1)
CR: EGE 648.

EGE 650, 651, 652. SOLID STATE ELECTRONICS I, II, III (3, 3, 3)
PR: CC. Theory of operation and application of circuits and devices.

EGE 653, 654. PRINCIPLES OF SEMICONDUCTOR DEVICE MODELING I, II (3, 3)
PR: EGE 411, 430. A course sequence which emphasizes systematic methods for obtaining models which relate device physics to terminal behavior and which provide appropriate compromises between accuracy and simplicity.

EGE 655. COMPUTER DESIGN LANGUAGES (3)
PR: CC or EGE 544. Simulation languages for digital computer systems; APL, CDL and others. Simulation of elements, operations, sequences and of a complete digital computer.

EGE 656. DIGITAL ARITHMETIC METHODS (3)
PR: CC or EGE 544. Study of the number systems and the algorithms used for digital arithmetic computation with emphasis in their implementation, speed and reliability considerations.

EGE 657. COMPUTER ARCHITECTURE (3)
PR: CC or EGE 655 or EGE 656. The macro-structure of computers is considered in this course, ranging from the orthodox von Neumann designs to multiprocessors, stack processors, pipe-line systems and associative computers.

EGE 658. PATTERN RECOGNITION THEORY (3)
PR: CC. Theory of pattern recognition. Parametric and non-parametric methods, training theorems, unsupervised learning. Biomedical and other engineering applications. (Formerly EGB 632.)

EGE 659. COMPUTER APPROACHES TO PATTERN RECOGNITION (3)
PR: EGE 658. Computer implementation of pattern recognition problems. Feature reduction methods, CLAFIC and SELFIC techniques. Sequential methods. (Formerly EGB 632.)

EGE 660, 661, 662. 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.

EGE 663. LIGHTNING AND SURGE PROTECTION (3)
PR: CC. Methods of protection against overvoltages due to lightning. Ground wire shielding, systems and tower grounding, lightning arresters. Dynamic overvoltages, switching phenomena and system recovery voltages.

EGE 664. PROTECTIVE RELAYING OF POWER SYSTEMS (3)
PR: EGE 560, EGE 660 or CC. Fundamentals of instrumentaion. Design and operation of protective schemes for equipment in generation, transmission, and distribution circuits. Analysis of abnormal system conditions requiring relay operation.

EGE 667. PULSE COMMUNICATIONS SYSTEM (3)
PR: CC. Sampling theory, pulse waveform generation and modulation. PAM, PWM, PPM, related multiplex systems, telemetry applications.

EGE 671. DATA TRANSMISSION (3)
PR: EGE 670. Quantization theory, binary coding systems, ideal binary transmission, on-off keying, FSK, PSK, PCM, applications.

EGE 672. DATA TRANSMISSION II (3)
PR: EGE 671. M-ary systems-MASK, MFSK, MPSK, orthogonal systems, multilevel and multistate coding, simplex codes, orthogonal and biorthogonal codes, polysignal systems, synchronization methods.

EGE 675. DATA STRUCTURES (3)
PR: CC. Representation of information and information structures in a computer system, linear linked lists, multi-linked lists, algorithms for list manipulation, stacks, deques and queues, trees and binary trees, tree traversing algorithms.

EGE 676. OPERATING SYSTEMS (3)
PR: CC. Operating systems functions and design, resource management, protection systems, process communication and deadlocks.

EGE 677. 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.

EGE 678. CASE STUDIES IN INDUSTRIAL COMPUTER SYSTEMS (3)
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. (Formerly EGS 628.)

EGE 679. SPECTRAL ANALYSIS BY COMPUTERS (3)
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. (Formerly EGS 635.)

EGE 680. SPECIAL ELECTRICAL PROBLEMS (1-3)
PR: CC.

EGE 681. SELECTED ELECTRICAL TOPICS (1-3)
PR: CC.

EGE 688. ADVANCED ENGINEERING SEMINAR (1-3)
PR: CC.

EGE 691. RESEARCH OR DESIGN (1-18)
PR: CC. (S/U only.)

EGE 699. DOCTORAL DISSERTATION (1-15)
PR: CC. (S/U only.)

Energy Conversion and Mechanical Design (EGR)

UPPER LEVEL COURSES

EGR 311. THERMODYNAMICS III (3)
PR: EGB 322. The study of energy conversion processes and cycles as modified for optimization of capacity and efficiency. Applications include pumps, compressors, turbines, internal combustion engines, power and refrigeration cycles.

EGR 315. HEAT TRANSFER I (4)
PR: EGB 322. The basic laws of conduction, convection and radiation; analysis of the effect on heat transfer of thermal conductivity, emissivity, fluid transport properties and Raynold's number. Lec.-lab.

EGR 326. DYNAMICS OF MECHANICAL SYSTEMS (3)
PR: PHY 301, MTH 352. Plane and angular motion; velocity and acceleration curves, velocities and accelerations in mechanisms, static and dynamic force analysis. Rolling and sliding contact pairs, cams, gear tooth action. Lec.-lab.

EGR 348. PHYSICAL MEASUREMENTS I (3)

EGR 350. ENERGY CONVERSION LABORATORY I (3)
CR: EGB 322. Introduction to engineering laboratory measurements 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.

EGR 411 THERMODYNAMICS IV (3)
PR: EGR 311 or CI. Introduction to Chemical Engineering Thermodynamics; Maxwell relations, properties of real substances and solutions, description of multicomponent systems in equilibrium. Qtr. III, IV.

EGR 413. FLUID MACHINERY I (4)
PR: EGR 343. Performance characteristics of pumps and fans; energy conversion in fluid machines; design of piping and duct systems; proper selection of pumps and fans for given fluid
systems; analysis of system efficiency parameters; correlation of design predictions with experimental data.

**EGR 416. ELECTRONIC EQUIPMENT COOLING** (3)

**EGR 417. FUELS AND COMBUSTION** (3)
PR: EGB 322 or C1. A study of chemical reactions as sources of energy. Emphasis on the combustion characteristics of gaseous, solid and liquid fuels and equipment needed to safely and economically control combustion processes. Lec-lab. Qtr. I, IV.

**EGR 419. POWER PLANT ANALYSIS AND DESIGN** (3)
CR: EGR 311, EGR 315. Parameters affecting utility power production; daily load curves; estimation of future loads; economics of power generation; system efficiency as affected by the thermodynamic cycle, multunit scheduling, and load variation; heat transfer regions in the steam generator; water treatment methods.

**EGR 421. INTRODUCTION TO NUCLEAR ENGINEERING I** (3)
Neutron density and thermalization parameters; criticality calculations; transient flux parameters; reactor operation; control instrumentation.

**EGR 424. REFRIGERATION AND AIR CONDITIONING** (3)
CR: EGR 311, EGR 315. Application of thermodynamics, heat transfer and fluid flow to the design of systems for controlling our environment; heating and cooling load calculations; psychrometrics of air conditioning processes.

**EGR 428. MACHINE ANALYSIS AND DESIGN** (3)

**EGR 429. MECHANICAL DESIGN I** (3)
PR: EGR 326, EGR 428. Application of the principles of engineering mechanics, materials and manufacturing to the analysis and design of mechanical elements. Lec-lab.

**EGR 441. ANALOG AND DIGITAL SIMULATION I** (3)
PR: EGB 325, EGR 348, of C1. The use of analog and digital computers as tools for the solution of engineering problems by means of simulation. Lec-lab. Qtr. II, III.

**EGR 445. DYNAMIC RESPONSE OF ENGINEERING SYSTEMS II** (3)

**EGR 450. ENERGY CONVERSION LABORATORY II** (2)
PR: EGR 350. Continuation of EGR 350 with emphasis on material and energy balances of mechanical and chemical systems and processes. Lec-lab.

**EGR 451 ENERGY CONVERSION LABORATORY III** (2)
PR: EGR 450 or C1. Continuation of EGR 450. Emphasis on experiments involving momentum transfer of Non-Newtonian fluids, heat conduction, and mass diffusion.

**EGR 453. MECHANICAL CONTROL** (3)
PR: EGB 311, 325. Analysis of devices for measurement and control. Transmitters, error detectors, controllers and final control elements. Block diagram representation.

**EGR 454. CONTROLS LABORATORY** (1)

**EGR 455. PROCESS CONTROL SYSTEMS I** (3)
PR: EGR 453 or C1. Analysis and design of process control systems. Consideration of typical control sensors and controllers as well as advanced process control control techniques such as on-off control or control (formerly EGR 553.)

**EGR 471. SEPARATION PROCESSES I** (3)
PR: MTH 303, CR: EGR 321. 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.

**EGR 472. TRANSPORT PHENOMENA** (4)
PR: EGR 311, or EGR 343, or EGR 473. A comparative study of transport phenomena with emphasis in the macroscopic applications of the balance and flux equations of momentum, energy and mass. Qtr. I, II.

**EGR 473. MASS TRANSFER** (3)
PR: EGR 472. Study of molecular and turbulent diffusion in fluids, diffusion in solids, mass transfer coefficients and interphase mass transfer. Qtr. II, III.

**EGR 474. SEPARATION PROCESSES II** (3)
PR: EGR 471 or C1. 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.

**EGR 475. INDUSTRIAL CHEMISTRY** (3)
PR: CHM 332, EGR 474. A critical study of selected chemical process industries in order to give the student a better understanding of the direct application of basic chemical process principles.

**EGR 476. REACTING SYSTEMS I** (3)
PR: EGR 411. Design and control of homogeneous chemical reactors, effect of mixing, temperature and flow characteristics. Laboratory (3 contact hours). The student in this laboratory will be responsible for the safe and efficient manufacture of a "chemical" on pilot plant equipment. Lec-lab. Qtr. I, II.

**EGR 478 DESIGN AND CASE PROBLEMS** (3)
PR: EGR 474. 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, benefiting from those of others in the class. Qtr. III, IV. (Formerly EGR 577.)

**EGR 481. SPECIAL TOPICS ENERGY CONVERSION I** (1-4)
PR: CC.

**EGR 482. SPECIAL TOPICS ENERGY CONVERSION II** (1-4)
PR: CC.

**EGR 501. INDUSTRIAL AIR POLLUTION CONTROL** (4)
PR: EGB 321. 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.

**EGR 511 INDUSTRIAL CHEMICAL ENGINEERING THERMODYNAMICS** (4)

**EGR 513 FLUID MACHINERY II** (3)
PR: EGR 413. Performance characteristics of compressors and exhausters, vacuum pumps, and gas turbines; internal energy exchange and fluid flow paths; piping and ducting considerations; economic selection of proper equipment to match fluid and power system requirements; evaluation of off-design conditions.

**EGR 522. ACOUSTICS AND NOISE CONTROL** (3)
PR: CC. Fundamentals of sound propagation; sound power and intensity; psychoacoustics, industrial noise sources, methods of noise attenuation; community noise ordinances; instrumentation for noise measurement. Lec-lab.
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<tr>
<th>Course Code</th>
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<tr>
<td>EGR 522</td>
<td>MECHANICAL UTILITIES SYSTEMS</td>
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<td>EGR 526</td>
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<td>EGR 527</td>
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<td>EGR 620</td>
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<td>EGR 625</td>
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<td>EGR 630</td>
<td>APPLIED ENGINEERING ASPECTS OF FATIGUE</td>
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<td>EGR 641</td>
<td>ANALOG AND DIGITAL SIMULATION II</td>
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**EGR 522. MECHANICAL UTILITIES SYSTEMS**
PR: EGR 413. Analysis and design of a building's mechanical systems for fire and lightning protection, air conditioning, water supply, and storm drains.

**EGR 526. ANALYSIS METHODS FOR MECHANICAL DESIGN**

**EGR 527. ADVANCED DYNAMICS OF MACHINERY**
PR: EGR 326. 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 motions. A complete force analysis will be made of an internal combustion engine.

**EGR 528. MECHANICAL DESIGN II**

**EGR 529. PROJECT DESIGN**
PR: EGR 429. Correlation of previously acquired mechanical design experiences with a creative design project. Lec.-lab.

**EGR 533. MECHANICAL VIBRATION AND BALANCING**
PR: EGB 341, 401. Transient and steady state vibration analysis of mechanical systems with lumped parameters. Dynamic balancing, vibration isolation and simulation of systems.

**EGR 535. LUBRICATION I**
PR: EGB 343, 401. The theoretical basis of lubrication and hydrodynamic bearing theory. The study of lubrication requirements of different types of machines.

**EGR 551. INSTRUMENTAL ANALYSIS**
PR: PHY 305, CHM 213. Instrumental Analysis. This course will deal with the engineering bases of a variety of sophisticated instrumental techniques for chemical analysis. Emphasis will be placed on the physical basis of the instrument and its design rather than on the interpretation of the analysis. Systems to be examined will include light and r.f. spectroscopy, mass spectrometry and methods which depend on various transport properties.

**EGR 554. HYDRAULIC CONTROL**
PR: EGR 453 or CI. Hydraulic control system components and their effects on closed loop system performance. Lec.-lab.

**EGR 560. POWER UTILIZATION SYSTEMS**

**EGR 581. SPECIAL TOPICS ENERGY CONVERSION III**
PR: CC.

**EGR 582. SPECIAL TOPICS ENERGY CONVERSION IV**
PR: CC.

**EGR 611. THERMODYNAMICS OF FLUID FLOW**
PR: CC. Interrelationship of the equations of fluid motion and of thermodynamics for ideal gases; subsonic and supersonic gas flows, flows with friction and with heat transfer; supersonic nozzle design; parameters of fluid thrust.

**EGR 612. ADVANCED THERMODYNAMICS**
PR: CC. Advanced treatment of the general equations of thermodynamics, principal equations of chemical reaction; the chemical potential and equilibrium; analysis of metastable states. Irreversibility and steady flow.

**EGR 613. PROCESS HEAT TRANSFER I**

**EGR 614. PROCESS HEAT TRANSFER II**
PR: EGR 315, EGR 613. Extended surface, longitudinal and radial fins, crossflow, fanned passages, longitudinal high fin exchangers, radial flow fin exchangers, transverse high fin exchangers and compact heat exchangers.

**EGR 615. HEAT TRANSFER II**
PR: EGR 315, EGB 401. 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. (Formerly EGR 515).

**EGR 616. HEAT TRANSFER III**
PR: EGR 315 and EGB 401 or CC. Radiative heat transfer. Radiation from black and "grey" bodies. Pure radiative heat transfer and in the presence of other modes of energy transfer. (Formerly EGR 615.)

**EGR 617. ENERGY TRANSFORMATION AND STORAGE**
PR: CC. Analysis of direct energy conversion systems: photo-electric cells, thermocouples, fuel cells, thermionic converters, magneto-hydrodynamic devices, solar energy cells, rectifiers, inverters, energy storage devices.

**EGR 620. PROCESS DESIGN FOR ENVIRONMENTAL PROTECTION I**
PR: EGR 478 or CI. Equipment and Process Design with emphasis on discharge control and environmental protection. Economic, and ecological constraints on optimum design.

**EGR 622. ACOUSTICS AND NOISE CONTROL II**
PR: EGR 522. Continuation of EGR 522. Acoustics and Noise Control I.

**EGR 623. NOISE CONTROL DESIGN**
PR: EGR 522, EGR 622. 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.

**EGR 624. AIR CONDITIONING SYSTEMS**
PR: EGR 413, EGR 424. Analysis and design of air conditioning systems; criteria for selection of central systems, unit air conditioners, or self-contained units; performance characteristics of single zone systems, with and without reheat, multi-zone systems, double duct and variable volume systems.

**EGR 625. AIR CONDITIONING SYSTEMS DESIGN**
PR: EGR 424, EGR 624 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.

**EGR 629. ADVANCED MECHANICAL DESIGN**
PR: CC. A technical application course involving the problem of developing machines to perform specified functions. The machine to be designed will be designated by the instructor. The analysis will include evaluating all parts for stress, vibration, wear and proper consideration of manufacturing processes involved. Lec.-lab.

**EGR 630. APPLIED ENGINEERING ASPECTS OF FATIGUE**

**EGR 633. VIBRATION ANALYSIS**
PR: EGR 533. Application of generalized coordinates, Lagrange's equation, matrix iteration, and other specialized methods to discrete multimass systems.

**EGR 635. LUBRICATION II**
PR: EGR 535. A continuation of EGR 535 with emphasis on hydrodynamic squeeze film theory and gas lubricated bearings.

**EGR 640. DIGITAL TECHNIQUES IN ENERGY TRANSFER SYSTEMS**
PR: EGR 441 or CI. Application of both general purpose and specialized programs to the solution of problems in the design of control systems, kinematic mechanisms and energy transfer systems. Some languages and programs to be used are FORTRAN, the Continuous System Modeling Program and the Mechanism Design Program.

**EGR 641. ANALOG AND DIGITAL SIMULATION II**
PR: EGR 441 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.

**EGR 442. DIMENSIONAL ANALYSIS AND MODEL THEORY**

PR: CC. Theory of dimensional analysis, similitude, and design of models.

**EGR 448. DIRECT DIGITAL CONTROL**

PR: EGR 455 or CI. Application of digital computers to control of engineering processes. Includes study of digital filtering, Z-transforms, supervisory control, A/D and D/A conversion.

**EGR 651. PHYSICAL MEASUREMENTS II**

PR: EGR 348, 441, 450 or CI. The techniques and theory for measuring temperature, pressure, displacement, speed, acceleration, force, power, and psychrometric properties with particular attention to dynamic measurement. Lec.-lab.

**EGR 656. NUMERICAL MEASUREMENT AND CONTROL**

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

**EGR 657. FLUID AMPLIFIERS AND CIRCUITS**

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

**EGR 659 ADVANCED MECHANICAL CONTROL**

PR: EGR 445 or CI. Application of state space techniques to analysis and design of energy transfer control systems. Includes study of optimal control and adaptive control.

**EGR 672. ADVANCED TRANSPORT PHENOMENA**

PR: EGR 472 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.

**EGR 676. REACTING SYSTEMS II**

PR: EGR 476 or CI. Dynamics of heterogeneous reaction. Economic factors in the design of chemical reactors. Simulation of complex reacting systems.

**EGR 668. DESIGN AND CASE STUDIES**

PR: EGR 478. Plant and Process Design with emphasis on computer aided design.

**EGR 681. SPECIAL PROBLEMS I**

PR: CC. (1-4)

**EGR 682. SPECIAL PROBLEMS II**

PR: CC. (1-4)

**EGR 698. ADVANCED SEMINAR**

PR: CC. (1-3)

**EGR 699. RESEARCH OR DESIGN**

PR: CC. (S/U only.)

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**Industrial Systems (EGS)**

**UPPER LEVEL COURSES**

**EGS 402. INDUSTRIAL PROCESSES**

PR: EGB 304. Development of the basic experimental designs. Randomized block, Latin squares and factorial designs. (Formerly EGS 561.)

**EGS 403. PRODUCTION DESIGN I**

PR: EGS 402, EGB 306. Methods study, predetermined time systems, wage administration, work measurement techniques including stop-watch time study, work sampling, standard data and production studies. Lec.-lab.

**EGS 404. PRODUCTION DESIGN II**

PR: EGS 403. Continuation of EGS 403. Lec.-lab.

**EGS 405. PRODUCTION CONTROL SYSTEMS I**

PR: EGS 411, 441, 462. Principles and techniques of industrial planning and control systems design. Cost analysis, forecasting and controlling production activities.

**EGS 406. PRODUCTION CONTROL SYSTEMS II**

PR: EGS 405, 442. Advanced topics in industrial planning and control systems design including the use of CPM, PERT and LOB.

**EGS 407. ENGINEERING VALUATION II**

PR: EGB 337 or equivalent. Analysis of economic limitations on engineering projects. Income tax considerations, replacement models, MAPI and obsolescence.

**EGS 409. PLANT FACILITIES DESIGN I**

PR: EGS 404, 407. Design and modification of plant facilities, including design of a complete manufacturing operation. Problems in plant location, layout, material handling, and equipment selection.

**EGS 410. PLANT FACILITIES DESIGN II**

PR: EGS 409, 422, 442. Advanced techniques for evaluation of alternative plans for plant arrangement, including equipment location and material handling systems. (Formerly EGS 609.)

**EGS 411. NETWORK MODELS**

PR: EGB 304. A study of the design and analysis of network models as applied to the solution of process related situations.

**EGS 420. COMPARATIVE COMPUTER LANGUAGES I**

PR: EGB 204, 304. 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-1 and ALGOL.

**EGS 421. COMPARATIVE COMPUTER LANGUAGES II**

PR: EGS 420. Use of the higher level languages analyzed in EGS 420 for specific applications to system design from the viewpoint of language comparisons and preferred choices. Additional comparisons are made with several procedure-oriented languages.

**EGS 422. COMPUTER SIMULATION I**

PR: EGB 304. Use of computers in physical and industrial systems. Simulation languages and their applications. (Formerly EGS 521.)

**EGS 423. COMPUTER SYSTEMS I**


**EGS 424. COMPUTER SYSTEMS II**

PR: EGS 423. Study of computer hardware usage. Peripheral subsystems. Transfer of information and control within a complete operating system. Executive systems and control monitors.

**EGS 425. COMPUTER SYSTEMS III**

PR: EGS 424. A continuation of EGS 424 stressing detailed applications of machine and assembly language to computer operating systems.

**EGS 427. FORTRAN APPLICATIONS I**


**EGS 429. COMPUTER PROJECTS**

PR: EGS 407, 421, 422, 424. Special projects involving the use and operation of digital computers.

**EGS 431. HYBRID COMPUTERS**

PR: EGB 405. The use of hybrid computers for the solution of problems in systems analysis. Lec.-lab.

**EGS 441. OPERATIONS RESEARCH I**

PR: EGB 405. An introduction to the basic operations research techniques—linear programming, dynamic programming, simulation and queuing.

**EGS 442. OPERATIONS RESEARCH II**

PR: EGS 441, 462. Continuation of EGS 441.

**EGS 442. ENGINEERING STATISTICS I**


**EGS 463. DESIGN OF EXPERIMENTS I**

PR: EGB 306. Development of the basic experimental designs. Randomized block, latin squares and factorial designs. (Formerly EGS 561.)

**EGS 465. STATISTICAL QUALITY CONTROL**

PR: EGB 306. Application of statistical techniques to the con-
trol of industrial processes. Control charts and acceptance procedures. Sequential sampling. For undergraduates.

EGS 472. SYSTEMS ANALYSIS AND DESIGN (3)  
PR: EGB 304, EGS 405, 442. The definition and analysis of systems. The solution of industrial systems problems using dynamic programming, simulation, queueing, linear and non-linear programming.

EGS 503. HUMAN FACTORS (3)  
PR: CC. Problems in the design, analysis and evaluation of man-machine systems from the viewpoint of physical, mental and psychological characteristics and limitations encountered.

EGS 505. INVENTORY CONTROL (3)  
PR: EGS 406 or equivalent. Properties of inventory systems and the fundamentals of deterministic and probabilistic inventory models.

EGS 507. ENGINEERING VALUATION STUDIES (3)  
PR: CC. The analysis of economic considerations affecting engineering decision making. Not open to students who have had EGS 407.

EGS 509. TECHNOLOGICAL FORECASTING (3)  
PR: Senior or graduate status. Open to non-majors. Recent developments in forecasting technical progress; morphological analysis, trend analysis, index forecasting, intuitive methods, empirical and phenomenological models. Technology assessment.

EGS 510. COMPUTER OPERATION (4)  
PR. Graduate engineering or science status. EGB 232 or equivalent, and CC. A comprehensive study of computer operating systems for mature students who have limited prior computer experience. Course covers material necessary to prepare the student for entry into the EGS 620, 621, 622 sequence.

EGS 522. COMPUTER SIMULATION (3)  
PR: EGS 422. Continuation of material in EGS 422.

EGS 533. FORTRAN APPLICATIONS II (3)  
PR: EGS 427 or equivalent. Advanced numerical methods using FORTRAN, applied to higher level problems in the individual student's field of engineering, mathematics or applied science.

EGS 540. OPERATIONS RESEARCH (3)  
PR: CC. Linear programming, game theoretic models, economic optimization. Not open to students who have had EGS 422.

EGS 542. NUMERICAL METHODS II (3)  
PR: EGB 405. Continuation of material in EGB 405.

EGS 550. HAZARD CONTROL ENGINEERING (3)  
PR: Senior or graduate status. Open to non-majors. Nature of industrial practices, 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.

EGS 556. INDUSTRIAL STATISTICS (3)  
PR: CC. Industrial applications of probability, testing of hypotheses, regression techniques and analysis of variance. Not open to students who have had EGS 462.

EGS 562. DESIGN OF EXPERIMENTS II (3)  
PR: EGS 463. Continuation of material in EGS 463.

EGS 563. ENGINEERING STATISTICS III (3)  
PR: EGS 462 or equivalent. Application of non-parametric statistics, sequential analysis, orthogonal polynomials and other optimization techniques to industrial problems.

EGS 565. STATISTICAL QUALITY CONTROL (3)  
PR: EGB 306 or equivalent. Application of statistical techniques to the control of industrial processes. Control charts and acceptance procedures. Sequential sampling.

EGS 566. RELIABILITY ENGINEERING (3)  

EGS 580, 581, 582. SPECIAL INDUSTRIAL PROJECTS I, II, III (1-3 each)  
PR: CC.

EGS 683. MAN/MACHINE SYSTEMS (3)  
PR: EGS 503. Principles of work measurement, process analysis, value analysis, and human factors and their application to industrial situations.

EGS 685. PRODUCTION CONTROL SYSTEMS III (3)  
PR: EGS 406 or equivalent. Forecasting procedures, development of production plans, scheduling techniques and inventory models. Application of EDP to production control systems.

EGS 687. ADVANCED ENGINEERING VALUATION (3)  
PR: EGS 407 or equivalent. Statistical models for analyzing engineering alternatives from an economic viewpoint. The use of advanced engineering economy concepts in solving industrial problems.

EGS 688. COMPUTER THEORY I (3)  

EGS 691. COMPUTER THEORY II (3)  
PR: EGS 620. Advanced concepts in programming languages. The interrelation between machine, assembly and procedure oriented languages. Introduction to the design of monitors, assemblers, compilers.

EGS 692. COMPUTER THEORY III (3)  
PR: EGS 621. Continuation and extension of EGS 621 emphasizing detailed design principles used in the construction of monitors, assemblers and compilers.

EGS 694. QUEUEING THEORY (3)  
PR: EGS 442, 462. Deterministic and probabilistic queueing models. Poisson queues and special non-Poisson queues with exponential and non-exponential services. Single and multiple channel queues.

EGS 696. LINEAR PROGRAMMING (3)  
PR: EGS 442 or equivalent. The simplex method, degeneracy, duality theory; applications of linear programming to industrial problems.

EGS 697. NONLINEAR AND DYNAMIC PROGRAMMING (3)  

EGS 699. MULTIVARIABLE OPTIMIZATION (3)  

EGS 674, 648. STOCHASTIC PROCESSES I, II (3,3)  
PR: EGS 562. Theory and application of stochastic processes as models for empirical phenomena, with emphasis on the following processes: Poisson, stationary, normal, counting, renewal, Markov, birth and death. Spectral representations, time series, smoothing and filtering.

EGS 661, 662. THEORY OF INDUSTRIAL STATISTICS I, II (3,3)  
PR: EGS 462 or equivalent. Theoretical distributions, continuous and discrete expectation and estimation, properties sampling distributions.

EGS 663, 664. STATISTICAL DESIGN MODELS I, II (3,3)  
PR: EGS 662 or equivalent. Design of experiment mathematical models, application of advanced analysis of variable techniques as applied to industrial problems.

EGS 665. STATISTICAL ASSURANCE PLANS (3)  
PR: EGS 565 or equivalent. Advanced techniques in sequential quality control systems and acceptance sampling plans.

EGS 666. THEORY OF RELIABILITY (3)  
PR: EGS 462 or equivalent. Topics in statistical methodology which have applications in the field of reliability. Discrete and continuous distribution models, reliability estimation, reliability structure and growth models, and statistical design for reliability.

EGS 668. SPECIAL TOPICS IN STATISTICS (3)  
PR: CC. Special topics in statistics related to research in engineering.

EGS 680, 681, 682. SPECIAL INDUSTRIAL TOPICS I, II, III (1-3 each)  
PR: CC.
Structures, Materials and Fluids

**EGX 330. 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.

**EGX 401. STRUCTURES I**

**EGX 402. MATERIALS ENGINEERING III**
PR: EGB 342, EGB 321. Principles of chemical thermodynamics as applied to the interaction of materials with various gaseous, aqueous, and solid phase environments. Lecture.

**EGX 403. FLUID MECHANICS II**

**EGX 404. STRESS ANALYSIS**
PR: EGB 340. Analytical and experimental analysis of the mechanical behavior of deformable solids. Elastic and inelastic methods, plastic limit analysis, flexure and torsion of beams, photolasticity, electric strain gages, introduction to finite element computer methods. Lec.-lab.

**EGX 405. SOLID MECHANICS III**
PR: EGB 341. Dynamics of discrete and distributed mass, spatial kinematics, and kinetics, inertia tensor, Euler equations, vibrations. Lecture (Formerly EGX 505.)

**EGX 406. ENGINEERING ANALYSIS SMF**
PR: EGB 204, EGB 401. Computational methods for engineering problems found in Structures, Materials and Fluids. Lec.-lab.

**EGX 407. SENIOR RESEARCH/DESIGN PROJECT I**
PR: Completion of 150 hours. Presentation of current and future problem-oriented research/design topics for engineers. Organization of student-faculty investigative teams for senior projects in EGX 408 or EGX 499. (Formerly EGX 409.)

**EGX 408. SENIOR RESEARCH/DESIGN PROJECT II**
PR: EGX 407. Problem-solving experience and training for seniors in research/design projects. Oral and written final reports are required. (Formerly EGX 509.)

**EGX 410. STRUCTURES II**
PR: EGX 401. Introduction to the behavior of composite structural members: laminates, sandwich panels, reinforced concrete, timber and structures. Lec.-lab.

**EGX 411. CONCEPTS OF STRUCTURAL DESIGN**
PR: EGX 401. Applications of solid mechanics, materials science and structural analysis to the design of building, bridge, aircraft and ship structures. Critical review of current codes and specifications. Lec.-lab.

**EGX 412. STRUCTURES III**
PR: EGX 401. Elastic and plastic analysis of determinate and indeterminate frames and trusses. Emphasis on matrix-computer techniques. Lec.-lab. (Formerly EGX 511.)

**EGX 413. PRESTRESSED STRUCTURES**
PR: EGX 410. Analysis and design of prestressed structural systems. Emphasis on prestressed concrete. Lec.-lab. (Formerly EGX 513.)

**EGX 414. STRUCTURAL CONNECTIONS**
PR: EGX 411. Use of theoretical and experimental data in the analysis and design of structural connections in metal, wood, concrete and plastic. Lec.-lab. (Formerly EGX 514.)

**EGX 415. STRUCTURES IV**
PR: EGX 412. Analysis of suspension structures, towers and tall buildings by both approximate and exact methods. Lec.-lab. (Formerly EGX 515.)

**EGX 416. STRUCTURAL DESIGN IN METALS**
PR: EGX 411, 412. Design of ductile metallic structural elements and systems. Lec.-lab. (Formerly EGX 516.)

**EGX 417. REINFORCED CONCRETE STRUCTURES**
PR: EGX 411, EGX 412. Design of reinforced concrete structures; interpretation and application of various codes and specifications governing design. Lecture. (Formerly EGX 517.)

**EGX 420. CONCEPTS OF ENGINEERING MATERIALS**

**EGX 421. PROCESSES IN MATERIALS ENGINEERING**
PR: EGX 402 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.

**EGX 422. SELECTION AND APPLICATION OF ENGINEERING MATERIALS**
PR: EGB 342. 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.

**EGX 423. EXPERIMENTAL METHODS IN MATERIALS ENGINEERING**
PR: EGX 402 or CI. Introduction to the experimental methods of metallography, X-ray diffraction, phase diagram determination, heat-treating techniques, and electron microscopy. Lec.-lab. (Formerly EGX 520.)

**EGX 424. 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. (Formerly EGX 521.)

**EGX 425. CORROSION OF ENGINEERING MATERIALS I**
PR: EGB 342. Principles of corrosion and the rationalization of corrosion rates in terms of polarization diagrams. Origin and prevention of the localized forms of corrosion. Approaches to corrosion prevention. Lecture. (Formerly EGX 522.)

**EGX 426. DIFFUSION**
PR: EGX 402. Theoretical and practical analysis of diffusion in solids including the physical meaning and implications of the concepts which influence and apply to diffusion in crystaline solids. Lecture. (Formerly EGX 523.)

**EGX 427. ENGINEERING CERAMICS**
PR: EGB 342. Detailed examination of the materials of ceramic engineering and the engineering properties of advanced ceramic products. Lecture. (Formerly EGX 524.)

**EGX 428. STRENGTHENING PROCESSES IN MATERIALS**
PR: EGX 402. 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.

**EGX 430. FLUID MECHANICS III**
PR: EGB 343. Mathematical hydrodynamics, inviscid flow. Lec.-lab. (Formerly EGX 530.)

**EGX 435. WATER RESOURCES ENGINEERING I**
PR: EGB 343. A study of the engineering principles involved in the sustaining and managing of the quality and quantity
of water available for human activities with particular emphasis on hydrology and hydraulics. Lecture. (Formerly EGX 535.)

**EGX 436. WATER RESOURCES ENGINEERING II** (4)
PR: EGB 343. A study of the engineering principles involved in the sustaining and managing of the quality and quantity of water available for human activities with particular emphasis on water uses, engineering economy, and regional water resource development. Lecture. (Formerly EGX 536.)

**EGX 437. INTRODUCTION TO AIR POLLUTION CONTROL** (4)
PR: EGB 322 or CI. Behavior and effects of atmospheric contaminants and the principals 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.

**EGX 438. AERODYNAMICS** (3)
PR: EGB 343. Fundamentals of compressible flow and flight dynamics. Structural Design; materials consideration. Lecture. (Formerly EGX 538.)

**EGX 440. EXPERIMENTAL SMF I** (4)
PR: EGB 343. An introduction to the experimental methods used in the study of structures, materials, fluids. Lec.-lab. (Formerly EGX 504.)

**EGX 441. EXPERIMENTAL SMF II** (4)
PR: CC. Review of elasticity, boundary value problems, finite element solutions; static and dynamic applications, circuitry, grid, brittle coating methods. Lec.-lab. (Formerly EGX 540.)

**EGX 450. SOLID MECHANICS IV** (3)
PR: EGB 341. Dynamics of Elastic Systems, Vibration of rods, plates, shells, structures; Energy and approximate solution techniques, transform techniques. Lecture. (Formerly EGX 550.)

**EGX 451. VIBRATIONS** (3)
PR: EGX 405. Wave motion in solids and fluids, thermal and mechanical Shock wave transmission and attenuation; blast loading. Phase-plane analysis. Lecture. (Formerly EGX 551.)

**EGX 480. SPECIAL TOPICS IN SMF** (1-4)
PR: CC. (Formerly EGX 580.)

**EGX 481. TRANSPORTATION I** (4)
PR: EGB 401, CI. Introduction to Transportation Engineering. Lecture.

**EGX 482. TRANSPORTATION II** (4)
PR: EGX 481. Transportation system planning. Lecture. (Formerly EGX 581.)

**EGX 485. SOIL MECHANICS I** (4)
PR: EGB 343. Fundamental and experimental concepts in soil mechanics with emphasis on soil properties, soil moisture, soil structure and shearing strength. Lecture.

**EGX 486. SOIL MECHANICS II** (4)
PR: EGX 485. A study of the application of the principles of soil mechanics to problems in soils engineering. Lecture. (Formerly EGX 486.)

**EGX 499. RESEARCH IN SMF** (1-4)
PR: CC. (Formerly EGX 599.)

**EGX 570. INTRODUCTION TO CONTINUUM** (3)
PR: CI. Development of techniques of applied mathematics to SMF problems; partial differential equations, complex variable, vector and tensor analysis. Lecture.

**EGX 571. CONTINUUM I** (3)
PR: CI. Development of fundamental problems in solids and fluids from a unified viewpoint; application to ideal media; elastic, plastic, visco-elastic, and fluids. Lecture.

**EGX 572. CONTINUUM II** (3)
PR: EGX 571. Mathematical Theory of elasticity. Two dimensional problems in plane stress and plane strain using cartesian and curvilinear coordinates; three dimensional applications to torsion, bending and semi-infinite solids. Lecture.

**EGX 573. MECHANICS OF COMPOSITE MATERIALS** (3)

**EGX 575, 576. FINITE ELEMENT METHODS I, II** (3-3)

**EGX 610. STRESSED SURFACE STRUCTURES** (5)

**EGX 611. STRUCTURAL STABILITY** (5)

**EGX 612. STRUCTURAL DYNAMICS** (4)

**EGX 613. STRUCTURAL OPTIMIZATION** (5)
PR: EGX 411, 412. Use of optimization techniques in the design of structures including use of the digital computer as a design aid. Lec.-lab.

**EGX 616. ADVANCED STRUCTURAL DESIGN** (5)
PR: EGX 412, 414. A study of design of more complicated structural systems such as curved bridges, orthotropic bridges, tall buildings, towers, suspension structures. Lecture.

**EGX 620 DISLOCATION STRUCTURES AND PROPERTIES OF ENGINEERING MATERIALS** (3)
PR: EGX 402 and EGX 423. Introduction to the separate and combined effects of the primary strengthening mechanisms in materials. Dislocation structures, nucleation and growth phenomena, phase transformations and principles of composite materials. Lecture.

**EGX 621. HIGH TEMPERATURE REACTIONS OF ENGINEERING MATERIALS** (3)

**EGX 622. CORROSION OF ENGINEERING MATERIALS II** (3)

**EGX 623. ADVANCED X-RAY METHODS** (4)
PR: CI. X-Ray diffraction analytical and experimental studies of defects, texture, residual stress, crystal and polycrystalline aggregates. Lec.-lab.

**EGX 630. FLUID MECHANICS IV** (4)

**EGX 631. GAS DYNAMICS** (3)

**EGX 635. FREE SURFACE FLOW** (4)
PR: EGX 403 or CI. Fundamental and applied aspects of free surface flow, including river hydraulics, canal flow and open channel design. Lecture.

**EGX 640. EXPERIMENTAL SMF III** (4)

**EGX 641. EXPERIMENTAL SMF IV** (4)

**EGX 642. EXPERIMENTAL SMF V** (4)

**EGX 643. EXPERIMENTAL SMF VI** (4)

**EGX 650. SOLID MECHANICS V** (3)
PR: EGX 405. Elastic and plastic stress wave propagation in
solids, experimental and theoretical treatment method of characteristics. Lecture.

**EGX 651. NONLINEAR DYNAMICS** (3)

**EGX 660, 661, 662. HYDROSPACE ENGINEERING I, II, III** (3,3,3)
PR: Cl. Advanced analysis of structural, material and fluid systems for marine environment, including underwater acoustics. Lecture.

**EGX 670. CONTINUUM MECHANICS III** (3)
PR: Cl. Theory of Plasticity. Initial and subsequent yield surfaces, incremental and deformation theories, flow theories; problems in ideal plasticity, strain hardening and slip line fields. Lecture.

**EGX 671. CONTINUUM MECHANICS IV** (3)

**EGX 672. NUMERICAL METHODS IN ENGINEERING ANALYSIS** (3)
PR: Cl. Application of computational and mathematical techniques and principles to advanced engineering problems concerning structures, materials, and fluids. Lecture.

**EGX 673. ADVANCED ELASTIC ANALYSIS** (3)
PR: Cl. Contemporary elasticity theory and applications. Lecture.

**EGX 674. APPLIED TENSOR ANALYSIS** (3)
PR: Cl. Tensor analysis applied to structures, materials, fluids. Lecture.

**EGX 675. WATER RESOURCES SYSTEMS I** (3)
PR: EGX 436. The planning, design, and operation of water resources systems by the use of systems analysis and operations research techniques. Lecture.

**EGX 676. WATER RESOURCES SYSTEMS II** (3)
PR: EGX 675. The planning, design and operation of water resource systems by the use of systems analysis and operations research techniques. Lecture.

**EGX 677. WATER TREATMENT THEORY AND DESIGN** (5)
PR: EGX 435 or CI. A study of the theory of water treatment and the relation of theory to analysis and design practice. Emphasis is given to unit processes. The seminar is devoted to the design and analysis of specific water treatment facilities.

**EGX 678. WASTEWATER TREATMENT THEORY AND DESIGN** (5)
PR: Cl. A study of the theory of wastewater treatment and the relation of theory to analysis and design practice. Emphasis is given to unit processes. The seminar is devoted to the design and analysis of specific wastewater treatment works.

**EGX 679. ENVIRONMENTAL PLANNING** (4)
PR: EGX 436 or CI. Study of the comprehensive application of environmental control and protection techniques to the problems of environmental quality. Important aspects include air and water quality, amenities, waste management, land use practice, control of noise, and natural ecological factors. A design or analysis problem is an integral part of the course.

**EGX 680. SPECIAL TOPICS IN SMF** (1-4)
PR: CC.

**EGX 698. ADVANCED ENGINEERING SEMINAR** (1-3)
PR: CC.

**EGX 699. RESEARCH IN SMF** (1-9)
PR: CC.

**EGX 798. RESEARCH AND DISSERTATION** (1-9)
PR: CC. Supervised independent research.

**EGX 799. RESEARCH AND DISSERTATION** (1-12)
PR: CC. Supervised independent research.

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**Computer Courses (ESC)**

**UPPER LEVEL COURSES**

**ESC 301. INTRODUCTION TO COMPUTERS I** (3)
Basic principles of computer operation, program structure, machine and assembly language.

**ESC 302. COMPUTER PROGRAMMING-FORTRAN** (3)
PR: ESC 301. Programming of scientifically oriented problems using FORTRAN. Introduction to the use of the systems library.

**ESC 303. COMPUTER PROGRAMMING-COBOL I** (3)

**ESC 304. COMPUTER PROGRAMMING-COBOL II** (3)
PR: ESC 303. Advanced applications of COBOL. Development of matrix structures, subscripting and data manipulating techniques as used in comprehensive data processing problems.

**ESC 307. COMPUTER PROGRAMMING-RPG** (3)
PR: ESC 301. Analysis, design and implementation of data processing systems using RPG.

**ESC 308. COMPUTER PROGRAMMING—PL/I** (3)
PR: ESC 301. Programming of both business and scientifically oriented problems. Manipulation of data records. Control sequencing and transmission of data.

**ESC 309. COMPUTER PROGRAMMING—GPSS-SIMSCRIPT** (3)
PR: ESC 302 or equivalent. SIMSCRIPT and GPSS will be used to implement and analyze general types of simulation.

**ESC 310. INTRODUCTION TO COMPUTERS II** (3)
PR: ESC 301. Component parts of a computer system. Internal representation and manipulation of data and program instructions. Algorithms and flowcharting. Programming languages and systems. (No credit for engineering majors.)

**ESC 311. INTRODUCTION TO COMPUTERS III** (3)
PR: ESC 310. Continuation of the material in ESC 310. (No credit for engineering majors.)

**ESC 312. INTRODUCTION TO COMPUTERS IV** (3)
PR: ESC 311. Continuation of the material in ESC 311. (No credit for engineering majors.)

**ESC 501. COMPUTER SYSTEMS** (3)
PR: ESC 302 or equivalent. Study of computer systems components, I/O devices, memory devices, theory of computer operation. (Not available to students who have taken ESC 310, 311 and 312.)

**ESC 502, 503. COMPUTER LANGUAGES AND COMPUTATION I, II** (3, 3)

**ESC 551. COMPUTERS FOR RESEARCH I** (3)
PR: Graduate Student Status. The use of FORTRAN IV and WATFIV languages in solving research problems.

**ESC 651. COMPUTERS FOR RESEARCH II** (3)
PR: ESC 551 or equivalent. Continuation of the material covered in ESC 551. Use of computer library programs and plotting equipment.

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**Engineering Technology (ETK)**

**UPPER LEVEL COURSES**

**ETK 361. THE ROLE OF ANALYSIS IN TECHNOLOGY** (3)
PR: MTH 213 or equivalent or CI. The application of determinants, exponentials, natural logarithms, complex numbers and elementary differential equations to technical problems.

**ETK 401. INDUSTRIAL SYSTEMS** (3)
Introduction to organizational planning and control functions in industrial systems.
ETK 421. PRINCIPLES OF INDUSTRIAL OPERATIONS I (3)
PR: ETK classification or CC. Techniques of work measurement and methods design.

ETK 422. PRINCIPLES OF INDUSTRIAL OPERATIONS II (3)
PR: ETK classification or CC. Techniques of production control and inventory control.

ETK 423. PRINCIPLES OF INDUSTRIAL OPERATIONS III (3)
PR: ETK 421, ETK 422. Techniques of plant location and layout.

ETK 431. FUNDAMENTAL TOPICS IN POWER GENERATION (3)
PR: Enrollment in Engineering Technology Program or CI. 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.

ETK 441. FUNDAMENTAL TOPICS IN AIR CONDITIONING (3)
PR: Enrollment in Engineering Technology Program or CI. 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.

ETK 443. AIR CONDITIONING SYSTEMS DESIGN I (3)
PR: ETK 441 or CI. 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.

ETK 444. AIR CONDITIONING SYSTEMS DESIGN II (3)
PR: ETK 443 or C. Heating and air conditioning load calculations, 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.

ETK 445. AIR CONDITIONING DESIGN SEMINAR (3)
PR: ETK 444. 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.

ETK 451. FUNDAMENTAL TOPICS IN CONSTRUCTION TECHNOLOGY I (5)
PR: MTH 213 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.

ETK 452. FUNDAMENTAL TOPICS IN CONSTRUCTION TECHNOLOGY II (3)
PR: ETK 451. Selection and application of materials in construction technology with associated consideration of material properties, change of properties and environmental effects.

ETK 453. CLIMATE CONTROL IN BUILDINGS (3)
PR: Enrollment in Engineering Technology Program or CI. 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.

ETK 454. ACOUSTICS IN CONSTRUCTION TECHNOLOGY (2)
Fundamentals of architectural acoustics, behavior of sound in closed spaces, noise control, and noise reduction.

ETK 455. 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.

ENG 100. ENGLISH AS A SECOND LANGUAGE—COMPOSITION (3)
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. Some previous study of English is a prerequisite. (Formerly CBS 100.)

ENG 101, 102, 103. 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. (Formerly CBS 101, 102)

ENG 200. SPEED READING DEVELOPMENT (3)
A course designed to develop speed reading techniques on various levels of difficulty. Emphasis is placed on comprehension via numerous practice drills. Will not be counted toward the English major. (S/U only.) (Formerly ENG 131.)

ENG 211. CURRENT NOVELS
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. (Formerly ENG 302.)

ENG 212. CURRENT DRAMA
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. (Formerly ENG 303.)

ENG 213. CURRENT SHORT FICTION
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. (Formerly ENG 304.)

ENG 214. INTRODUCTION TO LITERATURE: GENERAL
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. (Formerly ENG 314.)

ENG 215. INTRODUCTION TO LITERATURE: FICTION
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. (Formerly ENG 315.)

ENG 216. INTRODUCTION TO LITERATURE: POETRY
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. (Formerly ENG 316.)

ENG 217. INTRODUCTION TO LITERATURE: DRAMA
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. (Formerly ENG 317.)

UPPER LEVEL COURSES

ENG 300. HIGHLIGHTS OF BRITISH LITERATURE TO 1750
An introductory course consisting of selected highlights of English literature from the Middle Ages to 1750. (Formerly ENG 311.)

ENG 301. HIGHLIGHTS OF BRITISH LITERATURE 1750 TO 1945
An introductory course consisting of selected highlights of English literature from 1750 to 1945. (Formerly ENG 311.)

ENG 302. HIGHLIGHTS OF AMERICAN LITERATURE TO 1945
An introductory course consisting of selected highlights of American literature from the beginnings to 1945. (Formerly ENG 312.)

ENG 306. AMERICAN POPULAR LITERATURE: THE ROARING TWENTIES
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 307. TWENTIETH CENTURY DRAMA AND THE FILM
A study of six to eight major twentieth century plays by such playwrights as Shaw, Beckett, Williams, Chekhov, Sartre, O'Neill, Miller, Hansberry, and Ionesco, and the translation of these plays into the medium of the film.

ENG 308. MODERN LITERATURE, FILM, AND THE POPULAR ARTS
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, Tolkein, Thurban, Heller, Barhelme, Berger, and Kesey are examined.

ENG 309. SHAKESPEARE: TEXTS AND FILMS
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 310. SHAKESPEARE I
Reading of eight to ten representative plays, with special attention to developing the students' ability to read and interpret the text. (Formerly ENG 411.)

ENG 311. EARLY ENGLISH LITERATURE
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. (Formerly ENG 201.)

ENG 312. 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. (Formerly ENG 201.)

ENG 313. THE RISE AND DECLINE OF NEOCLASSICAL LITERATURE
A survey of Neoclassical English literature beginning with Marvell and the late work of Milton, and ending with the late Neoclassicism of Johnson, Boswell, and Goldsmith. (Formerly ENG 202.)

ENG 314. THE ROMANTIC WRITERS
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. (Formerly ENG 202, 203.)

ENG 315. 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. (Formerly ENG 203.)

ENG 316. 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. (Formerly ENG 307.)

ENG 317. CONTEMPORARY BRITISH AND AMERICAN LITERATURE FROM 1945 TO THE PRESENT
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.

ENG 330. ROMANTIC AMERICAN LITERATURE TO 1860
A survey 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. (Formerly ENG 305.)

ENG 331. AMERICAN LITERATURE FROM 1860 TO 1912
A study of representative works of selected American Realists and early Naturalists, among them Whitman, Dickinson, Twain, James, Howells, Crane, Dreiser, Wharton, and Robinson. (Formerly ENG 306.)
ENGL 332. MODERN AMERICAN LITERATURE FROM 1912 TO 1945
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. (Formerly ENG 307.)

ENGL 340. LITERATURE OF THE WESTERN WORLD: ANCESTORS
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. (Formerly ENG 335.)

ENGL 341. LITERATURE OF THE WESTERN WORLD: MEDIEVAL, RENAISSANCE, AND NEOCLASSICAL
A study in English of such writers as Dante, Boccaccio, Machiavelli, Rabelais, Montaigne, Moliere, among others, and of their cultural and intellectual settings. (Formerly ENG 335, 336.)

ENGL 342. LITERATURE OF THE WESTERN WORLD: MODERN
A study in English of Voltaire, Rousseau, Goethe, Baudelaire, Tolstoy, Mann, Lorca, Brecht, or others; the great literary traditions of Romanticism, Naturalism, and Symbolism.

ENGL 343. 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. (Formerly ENG 437.)

ENGL 345. MODERN SHORT NOVEL
A study of the novella from the 19th century to the present. Writers to be included will be: Flaubert, Conrad, Lawrence, Mann, Kafka, Bellow, Roth, and others.

ENGL 350. ADVANCED EXPOSITORY WRITING
Techniques and strategies of exposition; methods and styles of writing the article, the report, the formal and informal essay, and the persuasive argument. (Formerly ENG 325.)

ENGL 352. THE WRITING OF POETRY
Introduction to the writing of poetry. This course will introduce the student to a variety of forms and techniques in the writing of poetry.

ENGL 353. IMAGINATIVE WRITING: FICTION
Introduction to the writing of fiction. This course will introduce students to the variety of forms and techniques in the writing of imaginative prose.

ENGL 370. BLACK LITERATURE
A study of Black American literature from the nineteenth-century to the present, including the works of such writers as W.E.B. Du Bois, Jean Toomer, Langston Hughes, Richard Wright, Ralph Ellison, LeRoi Jones, and Nikki Giovanni.

ENGL 372. AMERICAN INDIAN LITERATURE (5)
A survey of American Indian literature from pre-Columbian times to the present, including the works of such writers as Poe, Melville, Ray Bradbury, Arthur C. Clarke, and others.

ENGL 375. LITERATURE AND THE OCCULT
An introduction to the occult tradition as a major ingredient in English, Continental, and American literature; analysis of the origins, classifications, and areas of the various magical arts from classical times through the present. (Formerly ENG 338.)

ENGL 376. THE BIBLE AS LITERATURE
Major emphasis on literary types, literary personalities of the Old and New Testaments, and Biblical archetypes of British and American literary classics. (Formerly ENG 319.)

ENGL 377. RELIGIOUS AND EXISTENTIAL THEMES
Theological and philosophical ideas, allusions, and symbols in the writings of Dostoevsky, Nietzsche, Mann, Joyce, Eliot, Camus, Sartre, and others. (Formerly ENG 511.)

ENGL 378. SEXUAL POLITICS IN LITERATURE, I
A study of feminism, antifeminism, sexual identity, the feminine mystique, stereotyped and libereted 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 as WSP 378.)

ENGL 379. SEXUAL POLITICS IN LITERATURE, II
A study of feminism, antifeminism, sexual identity, the feminine mystique, stereotyped and libereted 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 as WSP 379.)

ENGL 383. SELECTED TOPICS IN ENGLISH STUDIES
PR: Sophomore standing. Varying from quarter to quarter, the course examines in depth a predominant literary theme or the work of a select group of writers.

ENGL 385. MODERN SATIRE AND INJECTIVE
Explores the artistic nature and variety of satire in the 20th century, a period rich in satiric writing. Selections from Strachey, Waugh, Pound, Lowell, Nabokov, Faulkner, Golding, and Grass.

ENGL 387. TWENTIETH CENTURY BEST SELLERS
A study of representative best-selling novels in 20th century America; including such critically acclaimed works as Pevion 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.

ENGL 389. LITERATURE AND CENSORSHIP
A study of significant works of modern literature which have been suppressed by censorship; focusing on the writing of such prominent literary figures as D. H. Lawrence, Celine, Henry Miller, Allen Ginsberg, William Burroughs, Lenny Bruce, and others.

ENGL 391. LITERATURE OF THE GROTESQUE
A conceptual history of the grotesque in literature from Dante's Inferno to the madhouse of Beckett's Watt; including the works of such diverse writers as Goethe, Shakespeare, Poe, Pirandello, O'Neill, Sherwood Anderson, and Carson McCullers.

ENGL 392. LITERATURE AND PSYCHOLOGY
A study of conscious and unconscious dynamics of personality as reflected in the works of such writers as Shakespeare, Blake, Dostoyevsky, Twain, Melville, and Conrad, with parallel readings in the works of Freud, Jung, and Erich Fromm.

ENGL 393. HEROES AND ANTI-HEROES
A study of the patterns in the figure of the hero and the anti-hero to the present time. Readings from then to now include works such as Beowulf, The Iliad, King Lear, Don Quixote, and Catcher in the Rye.

ENGL 395. THE TALMUD AS LITERATURE
An introduction to the artistic elements of one of the great books of the Jewish religion. Emphasis on stories, fables, legends (Aggahah), but some general background in Talmudic structure and history is also provided. No previous knowledge of Judaism or religious texts is required.

ENGL 397. VOCABULARY
A practical course in rapid vocabulary improvement for students in all areas. Stress is on words in context. Will not be counted toward the English major.

ENGL 400. OLD ENGLISH LITERATURE
PR: ENG 300 or ENG 311. A study of representative works translation. (Formerly ENG 500.)
ENG 401. MIDDLE ENGLISH LITERATURE  
PR: ENG 300 or ENG 311. A study of representative works of the Middle English period with a consideration of the social and historical backgrounds. (Formerly ENG 502.)

ENG 402. CHAUCER  
PR: ENG 300 or ENG 311. An intensive study of The Canterbury Tales and major critical concerns. (Formerly ENG 501.)

ENG 406. SIXTEENTH CENTURY PROSE AND POETRY  
PR: ENG 300 or ENG 312. 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. (Formerly ENG 506, 508.)

ENG 407. SEVENTEENTH CENTURY PROSE AND POETRY  

ENG 408. ENGLISH DRAMA FROM THE BEGINNINGS TO 1642  
PR: ENG 300 or ENG 312. 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 Marlowe, Jonson, Webster, and Middleton. (Formerly ENG 503, 504.)

ENG 409. MILTON  
PR: ENG 300 or ENG 312. Study of the poetry and major prose of John Milton, with special emphasis on Paradise Lost. (Formerly ENG 507.)

ENG 410. SHAKESPEARE II  
PR: ENG 310. 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. (Formerly ENG 519, 520.)

ENG 413. RESTORATION AND EIGHTEENTH CENTURY SATIRE  
PR: ENG 300 or ENG 313. A study of selected Neoclassical satires, the techniques of their expression, and the historical conflicts out of which they arose. (Formerly ENG 521, 559.)

ENG 414. EIGHTEENTH CENTURY BRITISH NOVEL  
PR: ENG 301 or ENG 313. A study of the emergence of modern realistic prose fiction in the eighteenth century, with emphasis on Fielding, Richardson, Smollett, and Sterne. (Formerly ENG 429.)

ENG 418. ROMANTIC LITERATURE: FORM, GENRE, AND ARCHETYPE  
PR: ENG 301 or ENG 314. An intensive study of one or more formal types of British literature occurring between 1785 and 1832, such as Romantic Nature Poetry, Romantic Historical Novels and Poems, etc. Specific topics will vary. (Formerly ENG 513.)

ENG 419. ROMANTIC LITERATURE: MAJOR WRITERS  
PR: ENG 301 or ENG 314. A concentrated study of two or more representative Romantic writers from among Burns, Blake, Wordsworth, Coleridge, Scott, Austen, Byron, Shelley, Hazlitt, and Keats. (Formerly ENG 513.)

ENG 424. THE POETRY OF THE VICTORIANS  
PR: ENG 301 or ENG 315. An intensive study of the works of three or more representative Victorian poets. (Formerly ENG 523.)

ENG 425. NINETEENTH CENTURY BRITISH NOVEL  
PR: ENG 301 or ENG 315. A study of such major British novelists as Austen, Scott, Thackeray, Dickens, the Brontes, Eliot, Meredith, and Hardy. (Formerly ENG 430.)

ENG 426. REPRESENTATIVE THEMES IN VICTORIAN LITERATURE  
PR: ENG 301 or ENG 315. A study of representative works in Victorian prose, poetry, drama, and fiction, with particular attention to an important unifying theme, idea, or concern. (Formerly ENG 523.)

ENG 430. AMERICAN LITERATURE OF THE COLONIAL-FEDERAL PERIOD  
PR: ENG 300, ENG 302. An intensive study of the social, philosophic, political, and aesthetic foundations of American literature, from the period of early settlement through the writings of Cooper, Irving, and Bryant. (Formerly ENG 305.)

ENG 431. THE AMERICAN NOVEL FROM THE BEGINNINGS TO 1920  
PR: ENG 302, ENG 330, or ENG 331. A study of major American novelists through representative novels. Authors studied may include Cooper, Hawthorne, Melville, James, Twain, Dreiser, and others. (Formerly ENG 425.)

ENG 432. AMERICAN DRAMA  
PR: One course in American Literature. A historical-analytical study of American drama from the 19th century to the present. Included are such playwrights as Boker, Boucicault, Herne, O'Neill, Howard, Rice, Hellman, Williams, Miller, Albee, and Hansberry. (Formerly ENG 426.)

ENG 435. MODERN AMERICAN FICTION FROM 1920 TO 1945  

ENG 436. MODERN BRITISH FICTION FROM 1900 TO 1945  
PR: ENG 301 or ENG 316. A critical study of British fiction from 1900 to 1945, with emphasis on such writers as Conrad, Lawrence, Joyce, Woolf, Forster, Huxley, Waugh, and others.

ENG 437. CONTEMPORARY AMERICAN FICTION FROM 1945 TO THE PRESENT  
PR: One course in American literature. A critical study of American fiction from the war novel to the Absurd. The course will consider the impact of Continental, science, existentialist, and surrealism. Includes such writers as Mailer, Ellison, Donleavy, Nabokov, Bellow, Pynchon, O'Connor, Malamud, and Updike.

ENG 438. CONTEMPORARY BRITISH FICTION FROM 1945 TO THE PRESENT  
PR: One course in British literature. A critical study of British fiction since WW II, including a consideration of those forces such as the Angry Young Men, the Absurd, the philosophical novel, and Continental influences. Writers to be considered will be Orwell, Murdoch, Beckett, Burgess, Durrell, Amis, and others. (Formerly ENG 528.)

ENG 441. MODERN BRITISH AND AMERICAN POETRY FROM 1900 TO 1945  
PR: One course in British or American literature. Study of selected Modern British and American Poets from Hopkins to Auden, with attention to poetic theory. (Formerly ENG 527.)

ENG 442. CONTEMPORARY BRITISH AND AMERICAN POETRY FROM 1945 TO THE PRESENT  
PR: One course in British or American literature. Intensive study of six or seven contemporary poets: Theodore Roethke, Robert Lowell, Allen Ginsberg, Denise Levertov, Sylvia Plath, Edward Field, Bob Dylan, or others. (Formerly ENG 527.)

ENG 443. MODERN DRAMA FROM 1880 TO 1930  
PR: One course in British or American literature. 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, and others. (Formerly ENG 459.)

ENG 446. CONTEMPORARY DRAMA FROM 1945 TO THE PRESENT  
PR: One course in British or American literature. A study of major dramatists from the Theatre of the Absurd to the present, including such playwrights as Beckett, Ionesco, Genet, Albee, Pinter, Duerrenmatt, Miller, Williams, and others. (Formerly ENG 459.)

ENG 450. THEORY OF FICTION  
PR: 20 hours of literature. Intensive study of the genres and varieties of fiction to ascertain the theoretical and technical problems involved in the work of fiction. (Formerly ENG 585.)
### ENG 451. WORKSHOP IN FICTION (5)
PR: ENG 350 or ENG 351. 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. When the course is offered twice in the same academic year, the second offering is open only to students who took the course in the previous quarter. (Formerly ENG 423.)

### ENG 452. WORKSHOP IN POETRY (5)
PR: One advanced writing course. Self-expression in traditional and contemporary forms. Student-teacher conferences and classroom discussion. Selected readings. May be taken twice for credit. (Formerly ENG 421.)

### ENG 453. LITERARY CRITICISM (5)
PR: 20 hours of literature. 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. (Formerly ENG 531.)

### ENG 475. STRUCTURE OF AMERICAN ENGLISH (5)
PR: ENG 103. An introductory survey 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. (Formerly ENG 517.)

### ENG 476. HISTORY OF THE ENGLISH LANGUAGE (5)
PR: 20 hours of literature. 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. (Formerly ENG 515.)

### ENG 477. LINGUISTICS AND LITERATURE (5)
PR: ENG 475 or LIN 301. 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. (Formerly ENG 518.)

### ENG 481. INDIVIDUAL RESEARCH (1-5)
PR: 12 hours of literature. Directed study in special projects. Special permission of chairman required.

### ENG 483. SELECTED TOPICS IN ENGLISH STUDIES (1-5)
PR: Sophomore standing. The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers. Special courses in writing may also be offered under this title. May be repeated for different topics.

### ENG 485. DIRECTED READING (5)
PR: Junior standing. Readings in special topics. (Formerly ENG 585.)

### FOR GRADUATE STUDENTS ONLY

#### ENG 601. PROBLEMS IN COLLEGE ENGLISH

**INSTRUCTION: COMPOSITION (5)**
PR: Graduate standing. An examination of the objectives of freshman English and an investigation of current techniques for achieving those objectives, emphasizing the problems of developing critical reading and the techniques of expository writing at the college level.

#### ENG 602. PROBLEMS IN THE COLLEGE ENGLISH

**INSTRUCTION: LITERATURE (5)**
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.

#### ENG 610. STUDIES IN OLD ENGLISH (5)
PR: Graduate standing. A study of Old English language, prose style, poetry. May be retaken with different subject matter three times.

#### ENG 616. STUDIES IN MIDDLE ENGLISH (5)
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.

### ENG 620. STUDIES IN SIXTEENTH-CENTURY BRITISH LITERATURE (5)
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.

### ENG 625. STUDIES IN SEVENTEENTH-CENTURY BRITISH LITERATURE (5)
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.

### ENG 630. STUDIES IN RESTORATION AND EIGHTEENTH-CENTURY BRITISH LITERATURE (5)
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.

### ENG 645. STUDIES IN VICTORIAN LITERATURE (5)
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.

### ENG 650. STUDIES IN AMERICAN LITERATURE TO 1860 (5)
PR: Graduate standing. Selected focused studies in American literature before 1860: the Puritans, Franklin, Cooper, Irving, Poe, Emerson, Hawthorne, Melville, and others. May be retaken with different subject matter three times.

### ENG 660. STUDIES IN AMERICAN LITERATURE 1860-1920 (5)
PR: Graduate standing. Selected focused studies in American literature: Whitman, Twain, Howells, James, Crane, Dreiser, and others. May be retaken with different subject matter three times.

### ENG 670. STUDIES IN MODERN BRITISH LITERATURE (5)
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.

### ENG 672. STUDIES IN MODERN AMERICAN LITERATURE (5)
PR: Graduate standing. Modern American drama, poetry, fiction, and literary criticism; authors include Faulkner, Hemingway, Fitzgerald, O'Neill, Anderson, Wolfe, Cummings, Frost, and Eliot. May be retaken with different subject matter three times.

### ENG 675. STUDIES IN CONTEMPORARY LITERATURE (5)
PR: Graduate standing. Drama, poetry, fiction, and literary criticism; authors to be studied include Ionesco, Thomas, Miller, T. Williams, Beckett, Camus, and Burgess. May be retaken with different subject matter three times.

### ENG 681. GRADUATE RESEARCH (1-5)
PR: CI and Graduate standing. Directed study in special projects. Special permission of chairman required.

### ENG 683. SELECTED TOPICS IN ENGLISH STUDIES (1-10)
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.

### ENG 684. STUDIES IN CONTINENTAL LITERATURE (5)
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 taken with different subject matter three times.

ENG 685. DIRECTIONS IN ENGLISH LINGUISTICS (1-10)
PR: Graduate standing. Directed reading in authors or literary movements. Students must have a prior agreement with an instructor on the specific subject for study.

ENG 686. STUDIES IN STYLE (5)
(Advanced Composition for Teachers)
PR: Graduate standing. Poetics, rhetoric, dramatic style, prose style, short fiction, the novel, and the essay. May be taken with different subject matter three times.

ENG 687. STUDIES IN ENGLISH LANGUAGE AND LINGUISTICS (5)
PR: ENG 475 (formerly ENG 517) and ENG 476 (formerly ENG 515), or CI. An advanced study of the origin; historical development, and contemporary structure of British and American English in its social and cultural milieu, with emphasis upon modern techniques for linguistic analysis and description.

ENG 690. SCHOLARSHIP AND CRITICISM (5)
PR: Graduate standing. Selected focused study of research approaches to English. May be taken with different subject matter once.

ENG 691. GRADUATE SEMINAR IN ENGLISH (5-10)
PR: Consent of graduate adviser. May be taken with different subject matter to a maximum of ten hours.

ENG 693. BIBLIOGRAPHY FOR ENGLISH STUDIES (2)

PR: Graduate standing. Detailed study of bibliographies of cultural milieu, genres, periods, and authors.

ENG 699. MASTER'S THESIS (5)
PR: Admission to the English Masters graduate program. Writing a Master of Arts thesis in the field of English. Taking this course and the M.A. thesis are optional.

ENG 702. PROBLEMS IN ADVANCED ENGLISH INSTRUCTION OF COMPOSITION (5)
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.

ENG 703. PROBLEMS IN ADVANCED ENGLISH INSTRUCTION AND SCHOLARLY RESEARCH (5)
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.

ENG 791. DOCTORAL SEMINAR (5-10)
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 799. DISSERTATION (1-15)
PR: Consent of Department. The supervised writing of a doctoral dissertation. (S/U only.)

ENV 301. DIALOGUE IN ENVIRONMENTAL SURVIVAL (4)
A multi-disciplinary course dealing with environmental problems. For non-science majors. (S/U only.)

ENVIRONMENT (ENV)

FINANCE (FIN)


LOWER LEVEL COURSES

FIN 201. PERSONAL FINANCE (5)
Survey of the problems and techniques of family financial planning. Includes consumer credit, insurance, home ownership, and personal investing, with attention given to current economic and legal constraints. Not available for credit to upper level students who have been admitted to the College of Business Administration.

FIN 202. INTRODUCTION TO INVESTMENTS (4)
Designed for non-business administration students who have not taken accounting or corporation finance, it emphasizes the operations of the security markets in the U.S. and the risks and return of alternative investment media. Not available for credit to upper level students who have been admitted to the College of Business Administration.

UPPER LEVEL COURSES

FIN 301. PRINCIPLES OF FINANCE (5)
PR: ACC 300, and ECN 201. Fundamental tools and techniques applicable to financial planning. Emphasizes the problems of acquisition, supervision, and allocation of resources, and the management of the liquidity and profitability of firms.

FIN 303. PRINCIPLES OF INSURANCE (5)
Analysis of insurable risks of both businesses and individuals. An examination of the characteristics of those areas of risk and uncertainty where the mechanisms of insurance are effective alternatives. The concept, contracts, and institutions involved in insurance are examined in relationship to the socioeconomic environment.

FIN 305. PRINCIPLES OF REAL ESTATE (5)
Economics of urban land utilization and the nature of property rights. Problems of urban development and the valuation of real property in terms of the structure and operations of the real estate market.

FIN 321. MONEY AND BANKING (4)
PR: ECN 202. Examines the structure and operations of our monetary system, commercial banking, central banking, money, and capital markets, and provides an introduction to monetary theory and policy.

FIN 351. INTERNATIONAL FINANCE (5)
PR: ECN 202 or CI. Principles of acquisition, supervision, and allocation of funds by multi-national firms.

FIN 403. LIFE, HEALTH, & DISABILITY INSURANCE (5)
PR: FIN 303, ECN 331. The course will analyze the use of life, health and disability insurance contracts as a method of dealing with the risks of death, sickness, and disability. It will also include an analysis of cost determination of the various types of coverage.

FIN 411. ADVANCED CORPORATION FINANCE (4)
PR: FIN 301. An examination of the financial policies of corporations, with special reference to dividend policy, financial structure, capital expenditures, acquisitions, mergers, and reorganization.
FIN 421. PRINCIPLES OF INVESTMENT (4)
PR: FIN 301 and ECN 202. Survey of the risks and returns of investment media in relation to the investment objectives of individual and institutional investors. Includes an examination of the capital markets, information flows, and analytical techniques in terms of their impact upon the valuation process.

FIN 431. FINANCIAL INSTITUTIONS (4)
PR: FIN 321. A study of the interrelationship of financial intermediaries and their role in the capital market in the saving allocation, investment and financial decision making process.

FIN 451. FEDERAL RESERVE SYSTEM AND MONETARY POLICY (4)
PR: ECN 323 or FIN 321. An analysis of the Federal Reserve System, with special emphasis on the formulation and administration of monetary policy and on monetary theory.

FIN 461. FINANCIAL POLICIES AND STRATEGIES (3)
PR: FIN 411. Senior seminar for majors in finance. Quantitative and qualitative analysis of financial policies based on independent readings and empirical research.

FIN 471. PORTFOLIO MANAGEMENT (3)
PR: FIN 421. Study of portfolio policies and strategies of individual and institutional investors emphasizing techniques of diversification. This course utilizes both the quantitative and case study approaches to problem solving.

FIN 489. SPECIAL STUDIES IN FINANCE (1-5)
PR: CI. Independent study program under the guidance of departmental staff. Experimental courses will periodically be offered under this number.

FOR SENIORS AND GRADUATE STUDENTS
FIN 501. BUSINESS FINANCE (3)
PR: ACC 501 and ECN 501 or their equivalent. Accelerated introduction to fundamentals of business finance. Emphasis is placed on the formal presentation of financial models for decision making. The institutional features of the financial environment are also covered.

FINE ARTS (INTERDISCIPLINARY) (FNA)


UPPER LEVEL COURSES
FNA 301. THE ARTS TODAY (2)
A survey of the current activity in the arts, both performing and visual, offering the student the opportunity to become more aware of the scope and variety of the arts, both nationally and internationally. Current newspapers, periodicals, and broadcast media will be utilized. May be repeated once. (S/U only.)

FOREIGN LANGUAGES


General Foreign Languages (FOL)

UPPER LEVEL COURSES
FOL 383. GENERAL FOREIGN LANGUAGE I (1-4)
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 483. GENERAL FOREIGN LANGUAGE II (1-4)
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 language or for workshops in professional interpreting.

FOR GRADUATE STUDENTS ONLY
FIN 601. FINANCIAL MANAGEMENT (3)
PR: ECN 503, FIN 501 or their equivalent. An examination of financial practice at the level of the individual firm with emphasis on quantitative analysis of the variables affecting solvency and profitability.

FIN 602. CAPITAL MARKETS (3)
PR: ECN 501 and 502 or their equivalent. An investigation of the capital markets and their relationship to the external financing of firms.

FIN 611. FINANCIAL POLICY (3)
PR: FIN 601. A case study approach to financial policy and strategy with an emphasis on major financial decisions in the area of mergers, acquisitions, recapitalization, and reorganization. It will also involve case studies of financial decisions such as dividend policy, leasing, and external financing.

FIN 621. INVESTMENTS (3)
PR: FIN 501 or equivalent, CI. An examination of the risks and returns of alternative investment media within the framework of various valuation models. Special attention is given to the investment process and the criteria for investment decisions.

FIN 651. THEORY OF FINANCE (3)
PR: FIN 601, GBA 603 or CI. A systematic and rigorous course in the theory of finance. Topics will include the theory of choice and the allocation of financial resources, criteria for optimal investments, under certainty and uncertainty, the financing decision and the cost of capital.

FIN 683. SELECTED TOPICS IN FINANCE (1-6)
PR: Graduate standing and CI. A variable credit course depending upon the scope and magnitude of the work agreed to by the student and the responsible member of the faculty. Will include both special lecture series, and independent research activities under the direction of the department.

FOR SENIORS AND GRADUATE STUDENTS
FOL 585. DIRECTED STUDY (1-3)
PR: FOL 483 or equivalent.

Arabic (ARA)

UPPER LEVEL COURSES
ARA 390. MODERN ARABIC (1-4)
PR: None. An intensive study of the basic grammar, syntax, pronunciation and development of reading and oral skills.

ARA 391. MODERN ARABIC II (1-4)
PR: ARA 390.

Classics (CLS)

COURSES IN TRANSLATION
CLS 310. CLASSICAL LITERATURE IN TRANSLATION: TRAGEDY (4)
Introduction to the masterworks of Greek and Roman tragedy, with analyses of plays by Aeschylus, Sophocles, Euripides and Seneca.
SCRIBE, the Roman language and literature. Readings from representative texts.

FRE 201. INTERMEDIATE FRENCH I (4)
PR: French 103 or equivalent. A review of the basic structure of spoken and written French. May be taken concurrently with FRE 202.
PR: French 103 or equivalent. Readings in French on the intermediate level. May be taken concurrently with FRE 201.

FRE 202. INTERMEDIATE FRENCH II (4)

UPPER LEVEL COURSES
FRE 301. COMPOSITION I (4)
A fundamental composition course for students who have completed FRE 201 or 202.
FRE 302. CONVERSATION I (4)
Designed to teach conversation at an early stage in the student's training. May accompany or follow FRE 201 or FRE 202.
FRE 401. COMPOSITION II (4)
Continuation of French composition. This course is designed to follow FRE 301.
FRE 403. CONVERSATION II (4)
PR: FRE 303 or equivalent proficiency. Conversation practice with concentration on current idiomatic usage.
FRE 405. SURVEY OF FRENCH LITERATURE (4)
Earliest monuments through 18th Century Enlightenment.
FRE 406. SURVEY OF FRENCH LITERATURE (4)
Romanticism to present.

FRE 416. MODERN USAGE (4)
PR: FRE 401. The various components of style together with practical training.

FOR SENIORS AND GRADUATE STUDENTS
FRE 501. LITERATURE OF THE MIDDLE AGES (4)
FRE 502. LITERATURE OF THE RENAISSANCE (4)
FRE 521. CLASSICAL PROSE AND POETRY (4)
PR: FRE 405. Emphasis on Malherbe, La Fontaine, Boileau, Descartes and Pascal.
FRE 522. CLASSICAL DRAMA (4)
PR: FRE 405. Corneille, Moliere and Racine.
FRE 531. 18th CENTURY LITERATURE (4)
PR: FRE 405. The classical tradition and the new currents of thought in the Age of Enlightenment.
FRE 532. PRE-ROMANTICISM (4)
FRE 541. ROMANTICISM (4)
PR: FRE 406. A study of the romantic movement with emphasis on Lamartine, Vigny, Musset and Hugo.
FRE 542. REALISM (4)
PR: FRE 406. A detailed study of realism with emphasis on Balzac and Flaubert.
FRE 543. NATURALISM AND SYMBOLISM (4)
PR: FRE 406. A detailed study of the naturalist school with emphasis on Zola, les Goncourt, Maupassant and Daudet.
FRE 551. THE 20th CENTURY NOVEL (4)
FRE 552. 20th CENTURY POETRY AND THEATRE (4)
FRE 583. SELECTED TOPICS (1-4)
PR: Senior or graduate standing. An examination in detail of a particular author, theme, or movement.
FRE 585. DIRECTED STUDY (1-4)
PR: Senior or graduate standing. Approval of Department.

FOR GRADUATE STUDENTS ONLY
FRE 601. OLD FRENCH (4)
PR: Graduate standing. An introduction to the Old French language and literature. Readings from representative texts.
FRE 612. MEDIEVAL LITERATURE (4)
PR: Graduate standing. A study in depth of Old French literature of the Middle Ages.
FRE 622. SEMINAR ON CLASSICAL DRAMA (4)
PR: Graduate standing. A study of the works of Corneille, Racine or Moliere.
FRE 691. GRADUATE SEMINAR (4)
PR: Graduate standing. Topics vary and are chosen by the students and professor. May be repeated.

German (GER)
COURSES IN TRANSLATION
GER 310. HIGHLIGHTS OF GERMAN LITERATURE IN TRANSLATION (4)
An analysis in English based on translations of the most significant works of the middle ages of Luther, Grimmelshausen, Lessing, Goethe, Kant, Hegel, Nietzsche, Mann, Heidegger, Kafka, Hesse, and contemporary writers of current interest. Elective for students in all departments.

LOWER LEVEL COURSES
GER 101. BEGINNING GERMAN I (3-4)
The first course in the study of elementary German. Emphasis
on the development of basic skills in comprehension, speaking and reading. Three hours without lab; four hours with lab.

**GER 102. BEGINNING GERMAN II**  
(3-4)  
PR: GER 101 or equivalent. A continuation of GER 101. Three hours without lab; four hours with lab.

**GER 103. BEGINNING GERMAN III**  
(3-4)  
PR: GER 102 or equivalent. Continuation of GER 102. Three hours without lab; four hours with lab.

**GER 199. GERMAN FOR READING**  
(4)  
Designed to provide a reading ability in German that will support research in other disciplines.

**GER 201. INTERMEDIATE GERMAN I**  
(4)  
PR: GER 103 or equivalent. A review of the basic structure of spoken and written German. May be taken concurrently with GER 202.

**GER 202. INTERMEDIATE GERMAN II**  
(4)  
PR: GER 103 or equivalent. Readings in German on the intermediate level. May be taken concurrently with GER 201.

**UPPER LEVEL COURSES**

**GER 301. GERMAN COMPOSITION I**  
(4)  
A fundamental course for students who have completed GER 201 or 202.

**GER 303. CONVERSATION I**  
(4)  
Designed to teach conversation at an early stage in the student's training. May accompany or follow GER 201 or 202.

**GER 401. COMPOSITION II**  
(4)  
Practical training in modern German usage and differences of style.

**GER 403. CONVERSATION II**  
(4)  
Free conversation based on the current German idiom.

**GER 405. SURVEY OF GERMAN LITERATURE I**  
(4)  
Old High German and Middle High German literature in modern German translation; the literature of Humanism and Barock; the classical period.

**GER 406. SURVEY OF GERMAN LITERATURE II**  
(4)  
The romantic period, 19th and 20th centuries.

**GER 416. MODERN USAGE**  
(4)  
PR: GER 401. The various components of style together with practical training.

**FOR SENIORS AND GRADUATE STUDENTS**

**GER 513. HISTORY OF THE GERMAN LANGUAGE**  
(4)  
A diachronic approach to the study of the German language. The course follows the history and development of the language from Indo-European through Germanic, Old, Middle and New High German.

**GER 521. FAUST I**  
(4)  
Sources, form, content, and literary significance of Urfaust and Faust I.

**GER 531. GOETHE**  
(4)  

**GER 532. SCHILLER**  
(4)  
Selected dramas, philosophical and aesthetic writings.

**GER 535. THE ENLIGHTENMENT**  
(4)  
Selected dramas and critical writings by Lessing, Wieland, Kant.

**GER 543. ROMANTICISM**  
(4)  
Jenaer circle and Heidelberger circle; the late romantic period, the writers between Classicism and Romanticism.

**GER 544. REALISM**  
(4)  
Selected works by Grillparzer, Grabbe, Buchner, Hebbel, Heine, Immerman, Stifter, Keller, Meyer, Storm, Raabe, Hußmann, and Morike.

**GER 552. 20th CENTURY LITERATURE TO 1945**  
(4)  
A study of major styles in German literature from 1900 to WWII with emphasis on Hauptmann, Schnitzler, Hofmannsth, George, Rilke, Kaiser, Heym, Trakl, Thomas Mann, Hesse, Kafka, Benn, Brecht.

**GER 553. 20th CENTURY LITERATURE 1945-PRESENT**  
(4)  
Study of major trends in German literature since WWII with emphasis on Borchert, Frisch, Durrenmatt, Boll, Uwe Johnson, Grass, Aichinger, Eich, Enzensberger, Bachmann.

**GER 583. SELECTED TOPICS**  
(1-4)  
PR: Senior or graduate standing. Cl.

**GER 585. DIRECTED STUDY**  
(1-4)  
PR: Senior or graduate standing; approval of Department.

**FOR GRADUATE STUDENTS ONLY**

**GER 601. MIDDLE HIGH GERMAN**  
(4)  
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).

**GER 631. FAUST II**  
(4)  
An analysis of Goethe's last work: mythology, literary significance and critical evaluation.

**GER 691. GRADUATE SEMINAR**  
(4)  
Topics vary. May be repeated.

**Greek (GRE)**

**GRE 101. BEGINNING GREK I**  
(3-4)  
PR: None. An introductory course in classical Greek grammar with appropriate readings. Three hours without lab; four hours with lab or equivalent.

**GRE 102. BEGINNING GREK II**  
(3-4)  
PR: GRE 101 or equivalent. An introductory course in classical Greek grammar with appropriate readings. Three hours without lab, four hours with lab or equivalent.

**GRE 103. BEGINNING GREK III**  
(3-4)  
PR: GRE 102 or equivalent. An introductory course in classical Greek grammar with appropriate readings. Three hours without lab, four hours with lab or equivalent.

**GRE 201. INTERMEDIATE GREK I**  
(4)  
PR: GRE 103 or equivalent. Review of grammar; readings in Plato and Homer.

**GRE 202. INTERMEDIATE GREK II**  
(4)  
PR: GRE 201 or equivalent. Review of grammar; readings in Plato and Homer.

**GRE 203. INTERMEDIATE GREK III**  
(4)  
PR: GRE 202 or equivalent. Review of grammar; readings in Plato and Homer.

**UPPER LEVEL COURSES**

**GRE 390. MODERN GREK I**  
(1-4)  
An intensive study of the basic grammar, syntax, pronunciation and development of reading and oral skills.

**GRE 391. MODERN GREK II**  
(1-4)  
PR: GRE 390.

**Hebrew (HEB)**

**HEB 390. MODERN HEBREW I**  
(1-4)  
An intensive study of the basic grammar, syntax, pronunciation and development of reading and oral skills.

**HEB 391. MODERN HEBREW II**  
(1-4)  
PR: HEB 390.

**Italian (ITA)**

**COURSES IN TRANSLATION**

**ITA 310. ITALIAN CLASSICS IN TRANSLATION**  
(4)  
The works of the fathers of the Renaissance—Dante, Petrarach, Boccaccio, Machiavelli, Castiglione and others—are read and discussed in English.

**ITA 311. MASTERPIECES OF 20th CENTURY ITALIAN LITERATURE IN TRANSLATION**  
(4)  
Studies of the works of Pirandello, Silone, Moravia, Lampedusa, Levi, etc.

**ITA 410. ITALIAN CIVILIZATION**  
(4)
Topics may cover art, politics, sociology, religion, industry, science, etc. separately, or culture in general, depending upon student demand and instructor's interest. (The course is conducted in English.)

ITA 412. DANTE—DIVINE COMEDY I (4)
The allegorical, poetical, religious, historical, mythological, and classical aspects of the Inferno are read and discussed. A bilingual text is used.

LOWER LEVEL COURSES

ITA 101. BEGINNING ITALIAN I (3-4)
The first course in the study of elementary Italian. Emphasis is on the development of basic skills in comprehension, speaking, and reading. Three hours without lab; four hours with lab.

ITA 102. BEGINNING ITALIAN II (3-4)
PR: ITA 101 or equivalent. A continuation of ITA 101. Three hours without lab; four hours with lab.

ITA 103. BEGINNING ITALIAN III (3-4)
PR: ITA 102 or equivalent. A continuation of ITA 101 and 102. Three hours without lab; four hours with lab.

ITA 201. INTERMEDIATE ITALIAN I (4)
PR: ITA 103 or equivalent. A review of the basic structure of spoken and written Italian.

UPPER LEVEL COURSES

ITA 301. ITALIAN COMPOSITION I (4)
To develop the student's ability in writing Italian, to increase his ability in comprehension and use of grammatical elements.

ITA 303. ITALIAN CONVERSATION I (4)
To develop fluency and correctness in spoken Italian.

ITA 401. ITALIAN COMPOSITION II (4)
The study of syntax is intensified and the vocabulary is expanded.

ITA 403. CONVERSATION II (4)
PR: ITA 303 or equivalent determined by the professor. Free and directed conversation in Italian on contemporary topics.

ITA 405. SURVEY OF ITALIAN LITERATURE I (4)
Origins of Italian Literature, together with general aspects of the literature of the Middle Ages and of the Renaissance.

ITA 406. SURVEY OF ITALIAN LITERATURE II (4)
The literature of the Seventeenth through the Twentieth century, with special emphasis on the movements of the Nineteenth and Twentieth centuries.

ITA 485. DIRECTED STUDY (1-4)
PR: Senior standing. An in-depth study of an author, movement or theme.

Latin (LAT)

LOWER LEVEL COURSES

LAT 101. BEGINNING LATIN I (3-4)
An introductory course in Latin grammar with appropriate readings. Three hours without lab; four hours with lab or equivalent.

LAT 102. BEGINNING LATIN II (3-4)
PR: LAT 101 or equivalent. An introductory course in Latin grammar with appropriate readings. Three hours without lab; four hours with lab or equivalent.

LAT 103. BEGINNING LATIN III (3-4)
PR: LAT 102 or equivalent. An introductory course in Latin grammar with appropriate readings. Three hours without lab; four hours with lab or equivalent.

LAT 201. INTERMEDIATE LATIN I (4)
PR: LAT 103 or equivalent. Review of grammar; Readings in Vergil, Ovid and Martial.

LAT 202. INTERMEDIATE LATIN II (4)
PR: LAT 201 or equivalent. Review of grammar; Readings in Vergil, Ovid and Martial.

LAT 203. INTERMEDIATE LATIN III (4)
PR: LAT 202 or equivalent. Review of grammar; Readings in Vergil, Ovid and Martial.

UPPER LEVEL COURSES

LAT 304. ROMAN ELEGiac POETS I: CATULLUS (4)
PR: Basic knowledge of Latin. Readings in Catullus. Study of techniques and tradition in Roman lyric poetry.

LAT 305. ROMAN ELEGiac POETS II: PROPERTIUS AND TIBULLUS (4)
PR: Basic knowledge of Latin. Readings in Propertius and Tibullus; further study of art and tradition in Roman lyric poetry.

LAT 309. HORACE (4)
PR: Basic knowledge of Latin. Readings in the Odes and Epodes of Horace; study of the ode's traditions.

LAT 318. ROMAN COMEDY I: PLAUTUS (4)
PR: Basic knowledge of Latin. Readings of selected plays by Plautus; introduction to comedy—its theory and practice.

LAT 319. ROMAN COMEDY II: TERENCE (4)
PR: Basic knowledge of Latin. Readings of selected plays by Terence.

LAT 332. CICERO (4)
PR: Basic knowledge of Latin. Readings in the epistles of Cicero.

LAT 373. CICERO AND ROMAN PHILOSOPHY (4)
PR: Basic knowledge of Latin. Readings in the philosophical writings of Cicero, together with a consideration of eclectic thought.

LAT 374. SENeca AND ROMAN PHILOSOPHY (4)
PR: Basic knowledge of Latin. Readings in the philosophical writings of Lucius Annaeus Seneca, together with an examination of Stoic Epicurean, and Eclectic thought.

LAT 421. ROMAN SATIRE I (4)
PR: Basic knowledge of Latin. Readings in the Satyricon of Petronius. Introduction to the nature of satire.

LAT 422. ROMAN SATIRE II (4)
PR: 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.

LAT 463. LIVY (4)
PR: Basic knowledge of Latin. Readings in the ideas and artistry of this Roman historian.

LAT 483. SELECTED TOPICS (1-4)
Course content depends on student needs; may range over the whole field of ancient languages, literatures, and civilizations—with particular attention to Latin, Greek. Enrollment may be repeated for different topics.

LAT 485. DIRECTED READING (1-4)
Readings in special topics chosen by the student, in cooperation with the instructor. Permission of the department necessary prior to registration.

Portuguese (POR)

COURSES IN TRANSLATION

POR 406. BRAzILIAN LITERATURE (4)
PR: POR 327. Emphasis on Machado de Assis and later writers, in English.

UPPER LEVEL COURSES

PRO 326. ACCELERATED PORTUGUESE I (4)
PR: Two years of another Romance Language or Latin. Basic grammar, syntax, pronunciation and development of reading and oral skills.

POR 327. ACCELERATED PORTUGUESE II (4)
PR: POR 326. Continues development of reading and oral skills.

POR 401. COMPOSITION (4)
PR: POR 327. Emphasis on syntax, verb morphology and accurate writing.

POR 405. PORTUGUESE LITERATURE (4)
PR: POR 327. Emphasis on Camoens and later writers.
### FOR SENIORS AND GRADUATE STUDENTS

**POR 585. DIRECTED STUDY**
PR: POR 327. Approval of the department.

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### Romance (ROM)

**ROM 517. ROMANCE PHILOLOGY**
PR: Senior or graduate standing.

**ROM 518. MEDIEVAL AND EARLY ROMANCE LITERATURE**
PR: ROM 517.

### FOR GRADUATE STUDENTS ONLY

**ROM 685. DIRECTED STUDY**
PR: Senior or graduate standing.

**ROM 689. BIBLIOGRAPHY**
PR: Graduate standing. Research methods. Includes familiarity with major journals and bibliographies, and a practicum. (S/U only.)

### Russian (RUS)

#### COURSES IN TRANSLATION

**RUS 310. RUSSIAN CLASSICS IN TRANSLATION**
Masterpieces of 19th century Russian literature in translation. The major works of Pushkin, Lermontov, Gogol, Dostoevsky, Tolstoy, and Chekhov. Elective for all students in all departments.

**RUS 311. SOVIET LITERATURE IN TRANSLATION**
Masterpieces of 20th century Soviet literature in translation. The major works of Gorky, Babel, Sholokhov, Bulgakov, Pasternak, and Solzhenitzyn. Elective for all students in all departments.

**RUS 453. DOSTOYEVSKY**
Selected readings from such works as *Crime and Punishment, The Brothers Karamazov,* and *The Idiot.* Taught in English. For majors and non-majors.

**RUS 454. TOLSTOY**
Reading and discussion of such works as *War and Peace,* *Anna Karenina,* and *The Death of Ivan Illyich.* Lectures in English; readings in English for non-Russian majors, readings in Russian for credit towards major.

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### LOWER LEVEL COURSES

**RUS 101. BEGINNING RUSSIAN I**
The first course in the study of elementary Russian. Emphasis on the development of basic skills in comprehension, speaking and reading. 3 hrs. without lab; 4 hrs. with lab.

**RUS 102. BEGINNING RUSSIAN II**
PR: RUS 101 or equivalent. A continuation of RUS 101. 3 hrs. without lab; 4 hrs. with lab.

**RUS 103. BEGINNING RUSSIAN III**
PR: RUS 102 or equivalent. Continuation of RUS 102. 3 hrs. without lab; 4 hrs. with lab.

**RUS 201. INTERMEDIATE RUSSIAN I**
PR: RUS 103 or equivalent. A review of the basic structure of spoken and written Russian. May be taken concurrently with RUS 202.

**RUS 202. INTERMEDIATE RUSSIAN II**
PR: RUS 103 or equivalent. Readings in Russian on the intermediate level. May be taken concurrently with RUS 201.

### UPPER LEVEL COURSES

**RUS 301. RUSSIAN COMPOSITION I**
Practice in writing paragraphs and short essays in Russian.

**RUS 303. CONVERSATION I**
Elementary discussion of various topics in Russian; everyday themes.

**RUS 401. RUSSIAN COMPOSITION II**
Practice in writing in various styles according to correct present-day Russian usage.

**RUS 403. CONVERSATION II**
PR: RUS 303 or equivalent. Free and directed conversation in Russian on contemporary topics.

**RUS 405. SURVEY OF RUSSIAN LITERATURE I**
A study of the development of Russian literature from its beginnings through sentimentalism and romanticism. Works to be studied range from the earliest tales and religious works with emphasis on later secular writings. A basic knowledge of the Russian language is required.

**RUS 406. SURVEY OF RUSSIAN LITERATURE II**
19th and 20th century Russian realistic literature and contemporary Soviet works in novel and short story form. Authors include Gogol, Dostoevsky, Tolstoy, Pasternak, Solzhenitzyn, and others. A basic knowledge of the Russian language is required.

**RUS 410. RUSSIAN CIVILIZATION**
A study of the contribution of literature, music, and art to Russian culture.

**RUS 483. SELECTED TOPICS**
PR: Senior standing. An in-depth study of an author, movement, or theme.

**RUS 485. DIRECTED STUDY**
PR: Senior or graduate standing; approval of Department.

### Spanish (SPA)

#### COURSES IN TRANSLATION

**SPA 310. SPANISH MASTERPIECES IN TRANSLATION**
Outstanding literary works of Spain, in English. Open to all non-majors.

**SPA 313. LATIN AMERICAN LITERATURE IN TRANSLATION**
Outstanding works of Brazil and Spanish America, in English. Open to all non-majors.

**SPA 410. HISPANIC CIVILIZATION**
The culture and civilization of Spain and Latin America, in English.

**SPA 526. THE QUIXOTE**
*Cervantes' masterpiece Don Quijote de la Mancha,* in English. Also open to non-majors.

### LOWER LEVEL COURSES

**SPA 101 BEGINNING SPANISH I**
The first course in the study of elementary Spanish. Emphasis on the development of basic skills in comprehension, speaking and reading. 3 hrs. without lab; 4 hrs. with lab.

**SPA 102 BEGINNING SPANISH II**
PR SPA 101 or equivalent. A continuation of SPA 101. 3 hrs. without lab; 4 hrs. with lab.

**SPA 103 BEGINNING SPANISH III**
PR: SPA 102 or equivalent. Continuation of SPA 102. 3 hrs. without lab; 4 hrs. with lab.

**SPA 201. INTERMEDIATE SPANISH I**
PR: SPA 103 or equivalent. A review of the basic structure of spoken and written Spanish. May be taken concurrently with SPA 202.

**SPA 202. INTERMEDIATE SPANISH II**
PR: SPA 103 or equivalent. Readings in Spanish on the intermediate level. May be taken concurrently with SPA 201.

### UPPER LEVEL COURSES

**SPA 301. COMPOSITION I**
PR: SPA 202. To improve ability in writing and increase accuracy in grammatical elements.

**SPA 303. CONVERSATION I**
PR: SPA 102. For development of basic conversational skills.

**SPA 401. COMPOSITION II**
PR: SPA 301 or equivalent. A study of syntax, grammar, and stylistic devices of the Spanish language.

**SPA 403. CONVERSATION II**
PR: SPA 303 or equivalent. To improve fluency in spoken Spanish.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SPA 405</td>
<td>SURVEY OF SPANISH LITERATURE I</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 202 or equivalent. From the origins through the 17th century.</td>
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<tr>
<td>SPA 406</td>
<td>SURVEY OF SPANISH LITERATURE II</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 202 or equivalent. From the 18th century to the present.</td>
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<tr>
<td>SPA 407</td>
<td>SURVEY OF SPANISH-AMERICAN LITERATURE</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 202 or equivalent. An introduction to the study of</td>
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<tr>
<td>Spanish-American literature from the Colonial period to the present.</td>
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<tr>
<td>Emphasis on modern writers since Dario.</td>
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<tr>
<td>SPA 416</td>
<td>MODERN USAGE</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 401.</td>
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FOR SENIORS AND GRADUATE STUDENTS

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SPA 501</td>
<td>PHONOLOGY</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 301. A study of the Spanish sound system.</td>
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<tr>
<td>SPA 524</td>
<td>GOLDEN AGE DRAMA</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 405. Lope de Vega, Alarcon, Tirso, Calderon, and others.</td>
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<tr>
<td>SPA 540</td>
<td>ROMANTICISM</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 406. Poetry and drama of the first half of the 19th century.</td>
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<tr>
<td>SPA 542</td>
<td>REALISM</td>
<td>(4)</td>
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<tr>
<td>SPA 546</td>
<td>GENERATION OF 1898 AND AFTER</td>
<td>(4)</td>
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FOR GRADUATE STUDENTS ONLY

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>SPA 552</td>
<td>POST CIVIL WAR LITERATURE</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 406. From Gani to Lorea.</td>
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<tr>
<td>SPA 570</td>
<td>MEXICAN LITERATURE</td>
<td>(4)</td>
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<tr>
<td>SPA 575</td>
<td>LITERATURE OF ARGENTINA AND URUGUARY</td>
<td>(4)</td>
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<tr>
<td>PR: SPA 407. Emphasis on the gaucho theme in the River Plate countries.</td>
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<tr>
<td>SPA 583</td>
<td>SELECTED TOPICS</td>
<td>(1-4)</td>
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<td>PR: Senior or graduate standing.</td>
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<tr>
<td>SPA 585</td>
<td>DIRECTED STUDY</td>
<td>(1-4)</td>
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<td>PR: Senior or graduate standing; approval of Department.</td>
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LOWER LEVEL COURSES

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GBA 261</td>
<td>LAW AND THE INDIVIDUAL</td>
<td>(5)</td>
</tr>
<tr>
<td>A study of the nature, functions, sources, formulation, and</td>
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<tr>
<td>administration of law with the special emphasis on the practical</td>
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<tr>
<td>aspects of criminal, tort, estate, divorce, property, business,</td>
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<tr>
<td>constitutional, and other areas of law. Not available for credit to students</td>
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<tr>
<td>who have been admitted to the College of Business.</td>
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UPPER LEVEL COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GBA 333</td>
<td>COMPUTERS IN BUSINESS I</td>
<td>(3)</td>
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<tr>
<td>An introductory interdisciplinary examination of the impact of</td>
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<tr>
<td>computers on all areas of business decision-making. Problems are reduced to</td>
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<td>schematic logic, programmed and tested using the computer. Computer</td>
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<td>hardware, software, history and terminology are introduced.</td>
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<tr>
<td>GBA 351</td>
<td>COMPUTERS IN BUSINESS II</td>
<td>(5)</td>
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<tr>
<td>PR: GBA 333. An advanced interdisciplinary examination of the impact of</td>
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<tr>
<td>computer systems on the business enterprise. Concepts of data collection,</td>
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<td>information theory, business systems analysis, free maintenance and update</td>
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<td>systems are developed.</td>
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<tr>
<td>GBA 361</td>
<td>BUSINESS LAW I</td>
<td>(5)</td>
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<tr>
<td>The nature of legal institutions, essentials of a binding contract,</td>
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<tr>
<td>remedies granted in event of breach of contract and rights acquired by</td>
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<td>assignment of contracts.</td>
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<tr>
<td>GBA 362</td>
<td>BUSINESS LAW II</td>
<td>(5)</td>
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<tr>
<td>PR: GBA 361. Legal problems in marketing of goods, nature of property,</td>
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<tr>
<td>sales of personal property, securing of credit granted, nature and use of</td>
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<td>negotiable instruments.</td>
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<tr>
<td>GBA 363</td>
<td>THE LAW OF BUSINESS ASSOCIATIONS</td>
<td>(5)</td>
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<tr>
<td>PR: GBA 361. A study of the law of corporations, the law of</td>
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<td>partnerships, and the law of agency.</td>
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<tr>
<td>GBA 371</td>
<td>BUSINESS COMMUNICATIONS</td>
<td>(4)</td>
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<tr>
<td>Analysis and application of the principles of persuasion in business</td>
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<td>communication; composition and evaluation of functional business letters;</td>
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<tr>
<td>examination of effective organization strategy, text, tabular and graphic</td>
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<tr>
<td>presentation in formal business report.</td>
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<tr>
<td>GBA 483</td>
<td>SELECTED TOPICS IN BUSINESS ADMINISTRATION</td>
<td>(1-6)</td>
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</tbody>
</table>

GENERAL BUSINESS ADMINISTRATION (GBA)

The content and organization of this course will vary according to the current interests of the faculty and needs of students.

GBA 489. INDIVIDUAL RESEARCH (1-2)
Individual research in the student's major area supervised by an appropriate faculty member.

GBA 499. SENIOR SEMINAR IN ADMINISTRATION (3)
PR: Senior Standing. The course is intended to provide a unifying, integrating, and coordinating opportunity to tie together concepts, principles, and skills learned separately in other, more specialized courses in Business Administration.

FOR SENIOR AND GRADUATE STUDENTS

GBA 501. CBA WORKSHOP (1-6)
Professional applications workshop in various areas of finance, marketing, economics, accounting, management. May be repeated when subjects differ.

GBA 570. ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT COUNSELING (2-4)
Provides an opportunity to apply prior studies in various aspects of business administration. Focus is on strengths/weaknesses of an on-going small business. Recommendations for improvement are to be developed based on student analysis and shared with the business principals. Actual use of the recommendations may be initiated by the student or by the business principal and student together. Results should be monitored and further assessed either by the originating student, or by other students conducting follow-up analyses of the same small business firm.

FOR GRADUATE STUDENTS ONLY

GBA 601. LEGAL ENVIRONMENT OF BUSINESS (3)
A study of the governmental regulation of business emphasizing the constitutional limitations on the powers of the federal government, the administration of the federal anti-trust laws, and administrative law.

GBA 603. QUANTITATIVE METHODS I (3)
PR: College Algebra or equivalent. Mathematical techniques for administrative problems, including linear programming, game theory, and optimization models and procedures using calculus and matrix algebra.

GBA 605. QUANTITATIVE METHODS II (3)
GEOGRAPHY (GPY)


LOWER LEVEL COURSES

GPY 100. GEOGRAPHY OF CURRENT EVENTS (4)
Application of basic geographic principles of the analysis of contemporary events in various parts of the world.

GPY 301. SYSTEMATIC GEOGRAPHY (5)
Principles and concepts of the discipline; maps, earth-sun relations, weather, and climate.

GPY 302. SYSTEMATIC GEOGRAPHY (5)
PR: GPY 301 or CI. Landforms and conservation of resources. Latter part of course deals with man's use of the natural environment.

GPY 303. HUMAN GEOGRAPHY (5)
PR: GPY 301 or CI. Systematic treatment of man's activities on earth; population, settlement, agriculture, industry, trade, transportation, and political aspects are among those considered.

GPY 315. 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, earth form, weather, climate, soils, water, plants and animals, landscapes 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. (S/U only.)

GPY 371. GENERAL GEOGRAPHY (5)
Varied topics in regional and topical geography. May be repeated as topics vary, but the same topic may not be repeated for credit. Open to anyone in the University.

GPY 403. PHYSICAL GEOGRAPHY (5)
PR: GPY 301-302 or CI. Courses include meteorology, climatology, physiography, biogeography, soils, water bodies. May be repeated as courses vary, but the same course may not be repeated for credit.

GPY 405. CULTURAL GEOGRAPHY (5)
PR: GPY 301-302-303 or CI. Courses include economics, political, urban, population, settlement, conservation, and historical geography. May be repeated as courses vary, but the same course may not be repeated for credit.

GPY 407. REGIONAL GEOGRAPHY (5)
PR: GPY 301-302 or CI. Synthesis and analysis of the physical and cultural elements in a selected geographic region such as Africa, South America, Europe, Soviet Union, North America. May be repeated as regions vary, but the same region may not be repeated for credit.

GPY 409. GEOGRAPHIC TECHNIQUES AND METHODOLOGY (5)
PR: GPY 301-302-303 or CI. Courses include cartography, graphics, map design and analysis, air photo interpretation, field methods, quantitative analysis, seminar. May be repeated as courses vary, but same course may not be repeated for credit.

GPY 481. INDIVIDUAL RESEARCH (1-5)
PR: 30 hours in geography and chairperson's permission prior to registration. May be repeated.

at the end of a student's program.

GEOGRAPHY (GPY)

GPY 485. DIRECTED READING (1-5)
PR: 30 hours in geography and chairperson's permission prior to registration. May be repeated.

FOR SENIORS AND GRADUATE STUDENTS

GPY 501. GEOGRAPHIC LITERATURE AND HISTORY (4)
PR: Senior or graduate standing in geography, or CI. The origins and development of the discipline as revealed through an examination of the principal written sources. Special attention paid to leading personalities and modern periodicals.

GPY 503. METHODOLOGY I: QUANTITATIVE (4)
PR: Senior or graduate standing in geography, and a course in statistics, or CI. The application of quantitative techniques to geographic problems; factor, sensitivity, and spatial analysis.

GPY 505. METHODOLOGY II: CARTOGRAPHIC (4)
PR: Senior or graduate standing in geography, GPY 409 (Cartography), or CI. Application of various techniques for presenting graphic illustrations as research tools.

GPY 507. METHODOLOGY III: FIELD WORK (4)
PR: Senior or graduate standing in geography. Data collection in a field situation, including observation, classification, interpretation, and presentation of the data.

GPY 581. INDIVIDUAL RESEARCH (1-5)
PR: 30 hours in geography and CI, or graduate standing in geography. Arrangement must be made with chairperson prior to registration. May be repeated.

GPY 585. DIRECTED READING (1-5)
PR: 30 hours in geography and CI or graduate standing in geography. Arrangement must be made with chairperson prior to registration. May be repeated.

FOR GRADUATE STUDENTS ONLY

GPY 601. METHODOLOGY IV: ACADEMIC (4)
PR: Graduate standing in geography. Current trends in college geography, with the emphasis on the junior college program. Not available to thesis students.

GPY 603. SEMINAR IN ADVANCED PHYSICAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a problem selected from one or more aspects of the atmosphere, biosphere, hydrosphere, or lithosphere. May be repeated once for credit, but topic may not be repeated.

GPY 605. SEMINAR IN ADVANCED CULTURAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a problem selected from one or more aspects of the cultural landscape (urban, political, economic, population, settlement). May be repeated once for credit.

GPY 607. SEMINAR IN ADVANCED REGIONAL GEOGRAPHY (4)
PR: Graduate standing in geography. Analytic study of a selected region of the world. May be repeated once for credit, but region may not be repeated.

GPY 609. SEMINAR IN ADVANCED TECHNIQUES & METHODOLOGY (4)
PR: Graduate standing in geography. Analytic study of a selected geographic technique (such as remote sensing, graphics, photo interpretation, or computer applications) or an investigation into an aspect of methodology. May be repeated once for credit but topic may not be repeated.

GPY 689. DIRECTED TEACHING (1-9)

GPY 699. THESIS (1-9)
GEOLOGY (GLY)


LOWER LEVEL COURSES

GLY 201. INTRODUCTION TO GEOLOGY (4)
An introduction to the materials, processes and history of the earth. Students may elect to enroll in GLY 202 concurrently. No credit for geology majors.

GLY 202. 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 201, 203, 205 or 371. May not be repeated for credit. No credit for geology majors.

GLY 203. THE EARTH: PAST, PRESENT AND FUTURE (4)
A general introduction to the history of the earth as demonstrated by the changes recorded in the rocks and the evolution of organisms preserved. Students may elect to enroll in GLY 202 concurrently. No credit for geology majors.

GLY 205. 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 202 concurrently. No credit for geology majors.

GLY 210. 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 211. GEOLOGY III: EARTH PROCESSES (4)
Study of surface and subsurface processes of the earth including weathering transportation and accumulation 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 212. GEOLOGY II: 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.

UPPER LEVEL COURSES

GLY 302. PRINCIPLES OF INVERTEBRATE PALEONTOLOGY (5)
PR: GLY 212 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 310. ROCKS, MINERALS AND GEMS (4)
A general course in the occurrence, classification, and economics of earth materials. Designed for the non-science student or rock collector who is interested in something beyond a basic introductory course. Although no prerequisites are necessary, it is recommended that either GLY 201, 205 or 371 be taken prior to enrollment in GLY 310. No credit for geology majors.

GLY 320. 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 201, 203, 205 or 371 be taken prior to enrollment in GLY 320. No credit for geology majors.

GLY 351. INTRODUCTION TO HYDROGEOLOGY (5)
PR: Eight hours of geology, MTH 123 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 361. STRUCTURAL GEOLOGY (4)
PR: 12 hours of geology, MTH 123 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 371. GEOLOGY OF OUR NATION'S PARKS (4)
Representative parks used to illustrate current concepts in geology. Students may enroll in GLY 202 concurrently. For the non-science student. No credit for geology majors.

GLY 401. FIELD METHODS (4)
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 405. DEPOSITIONAL SYSTEMS (4)
PR: GLY 211, 212 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 409. MARINE GEOLOGY (4)
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. (Formerly GLY 512.)

GLY 410. CRYSTAL CHEMISTRY AND CRYSTALLOGRAPHY (4)
PR: GLY 210, one year chemistry and MTH 123 or equivalent or CI. Theory and application of crystal chemistry and crystallography to rock forming minerals. Emphasis on atomic structures, symmetry and Miller indices of minerals. Lec.-lab.

GLY 411. MINERALOGY (4)
PR: GLY 410 or CI. Origin, occurrence and chemistry of mineral groups with emphasis on rock forming minerals. Identification of common minerals by physical and chemical properties. Lec.-lab. (Formerly GLY 511.)

GLY 412. OPTICAL MINERALOGY (4)

GLY 413. IGNEOUS AND METAMORPHIC PETROGRAPHY (5)
PR: GLY 412. Systematic study of igneous and metamorphic complexes using modern methods of rock study, emphasizing use of the polarizing microscope for thin section analysis. Lec.-lab. (Formerly GLY 513.)

GLY 423. SEDIMENTOLOGY (4)
PR: GLY 405, 412 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 431. PRINCIPLES OF STRATIGRAPHY (4)
PR: GLY 405. Emphasis on classical principles of litho-and biostratigraphy, stratigraphic nomenclature, development of stratigraphic philosophy, and paleogeographic reconstruction of sedimentary basins. Lec.-lab., field trips. (Formerly GLY 531.)

GLY 433. GEOMORPHOLOGY (4)
PR: Senior or advanced junior standing and CC. Origin, evolution and distribution of landforms. (Formerly GLY 533.)

GLY 441. ECONOMIC MINERAL DEPOSITS (4)
PR: 20 hours of geology or Cl. Principles involved in the origin, occurrence, recovery, and use of mineral resources. Lec.-lab, field trips.

GLY 471. GEOLOGY OF SOILS (4) PR: General Chemistry or equivalent. The origin, geologic development, formation, and nature of soils. Fundamentals of soil science, including the physical, chemical, and biological factors affecting soil fertility with special application to the soils and ecology of Florida. Lec.-lab, field trips. For non-majors.

GLY 473. CONCEPTS IN EARTH SCIENCE (5) Earth's environment in space, including a selected study of its materials, processes, climate, oceans, soils, and history. Lec.-disc., field trips. No credit for geology majors.

GLY 475. HYDROGEOLOGY AND HUMAN AFFAIRS (4) 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 481. UNDERGRADUATE RESEARCH (1-5) PR: Senior or advanced junior standing and written permission of department prior to registration. Individual experimental investigations with faculty supervision. (S/U only.)

FOR SENIORS AND GRADUATE STUDENTS

GLY 504. PETROLOGY OF CHEMICAL ROCKS (4) PR: GLY 302, 412 or Cl. Origin, mineralogy, and petrology of chemical and organic sedimentary deposits including evaporites, carbonates, cherts, oil and gas, coal and sedimentary iron ores. Lec.-lab, field trips.

GLY 521. PRINCIPLES OF APPLIED GEOPHYSICS (4) PR: Senior or advanced junior standing, one year of Physics, or Cl. Elementary treatment of gravimetric, magnetic, electric, and seismic geophysical techniques as applied to site investigations and mineral deposits. Lec.-lab, field trips.

GLY 532. ADVANCED STRATIGRAPHIC PALEONTOLOGY (5) PR: GLY 302, 403 or Cl. Morphology, geologic distribution and stratigraphic ranges of important invertebrate guide fossils. Lec.-lab, field trips.

GLY 541. GEOPHOTO INTERPRETATION (5) PR: Senior standing, or Cl. Geo-analysis of air photos and earth data, including some acquired by remote sensing techniques. Analysis of chemical and physical sample data. Lec.-lab.

GLY 553. ADVANCED HYDROGEOLOGY (4) PR: GLY 351, MTH 213 or 303, PHY 215-216, or Cl. Aquifer evaluation and quantitative determination of the hydraulic characteristics of hydrogeologic systems, Lec.-field-lab.

GLY 571. GENERAL GEOCHEMISTRY (4) PR: One year college chemistry, GLY 411 or Cl. 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 573. ANALYTICAL TECHNIQUES IN GEOLOGY (5) PR: One year college chemistry, GLY 412 or Cl. 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 575. GEOTECHNICS (4) PR: Senior or advanced Junior standing or Cl. Concept of soil and rock mechanics, and their relationship to geologic conditions influencing the location, design, construction, and maintenance of engineering projects. Lec-field-lab.

GLY 583. SELECTED TOPICS IN GEOLOGY (1-5) 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 591. GEOLOGY SEMINAR (1) PR: Senior or advanced junior standing and CC. May be repeated once. (S/U only.)

FOR GRADUATE STUDENTS ONLY

GLY 603. COASTAL SEDIMENTATION (4) PR: GLY 423 or equivalent. Study of modern coastal sedimentary environments with emphasis on beaches, inlets, deltaic, estuaries and marshes. Analysis of sedimentary processes and resulting morphology of sediment bodies. Lec.-lab, field trips.

GLY 608. CARBONATE PETROGRAPHY (4) PR: GLY 412, 504 or equivalent or Cl. 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 609. SANDSTONE PETROGRAPHY (4) PR: GLY 412, 403 or Cl. 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 611. ADVANCED IGNEOUS PETROGENESIS (4) PR: Cl. Detailed study of igneous rocks and their origin.

GLY 612. ADVANCED METAMORPHIC PETROGENESIS (4) PR: Cl. Detailed study and interpretation of metamorphism and the origin of metamorphic rock complexes, utilizing thin section microscopy, X-ray diffraction, and chemical analyses.

GLY 620. MARINE PALEOECOLOGY (4) PR: GLY 302, 403 or Cl. 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 621. MARINE MICROPALEOECOLOGY (4) PR: 302 or Cl. Morphology and geologic distribution of foraminifera, conodonts, ostracods, chitinozoans, discoasters, and coccolithophores. Lec.-lab, field trips.

GLY 625. PALEONTOLOGIC SYSTEMATICS AND TECHNIQUES (4) PR: GLY 302 or Cl. Principles of taxonomic paleontology including synonyms and morphologic descriptions. Preparation of fossils for photographing and camera lucida drawings.

GLY 652. DEVELOPMENT OF GROUND-WATER RESOURCES (4) PR: GLY 553 or Cl. Analysis of cause-effect relationships between ocean, streams, lakes, and aquifers; planning and design of hydrogeology resources investigations. Lec.-lab, field trips.

GLY 661. CLAY MINERALOGY (4) PR: Graduate standing in geology or Cl. Composition, structures, origin, and diagenesis of clay minerals. Identification of clay minerals by X-ray diffraction techniques.

GLY 672. SEDIMENTARY GEOCHEMISTRY (4) PR: GLY 571 or Cl. Fundamentals of aqueous geochemistry in relation to chemical and biochemical precipitation of sedimentary materials. Geochemistry of fluids with emphasis on diagenesis.

GLY 673. CHEMICAL EQUILIBRIA IN THE EARTH (4) PR: GLY 571 or Cl. Application of basic solution geochemistry and equilibria concepts to geologic problems with emphasis on geochemical reactions at low temperatures and pressures.

GLY 675. GEOLOGY OF FLORIDA (4) PR: 24 hours of earth science credits or Cl. Designed for teachers of earth science. Mineralogy, structure of stratigraphy, paleontology, geomorphology, tectonics, and petrology of Florida and contiguous areas. Lec.-field-lab. Alternate years.

GLY 681. GRADUATE RESEARCH GEOLOGY (1-15) PR: CC. (S/U only.)

GLY 683. SELECTED TOPICS IN GEOLOGY (1-6) PR: Cl. May be repeated for credit.

GLY 689. DIRECTED TEACHING (1-5) Not applicable toward thesis degree requirements. Supervised teaching for graduate teaching assistants in elementary and/or laboratory courses. A formalized, structured activity wherein a faculty member, by discussion and assignments, considers
the principles, rationale, and modus operandi of elementary college courses. Designed to train teaching assistants and to provide help and training to those graduate students who plan to follow a college teaching profession. (S/U only.)

HISTORY (HTY)


LOWER LEVEL COURSES

PART I

HTY 201, 202. ANCIENT HISTORY I, II (4, 4)
A survey study of the ancient civilization. 201 treats Near Eastern and Greek history to the beginning of the career of Alexander the Great; 202 treats the career of Alexander, the Hellenistic World, and Rome to the death of Constantine. Attention is drawn to the correlative work in CLS 321, Ancient Civilizations.

HTY 211, 212. AMERICAN HISTORY I, II (4, 4)
A history of the United States with attention given to relevant developments in the Western Hemisphere, 211: European origins to 1877; 212: 1877 to present.

HTY 221, 222. MEDIEVAL HISTORY I, II (4, 4)
A thematic survey of the Middle Ages. 221 deals with the nascent, Christian civilization of Europe, circa 300-1050 A.D.; 222 treats the mature medieval civilization of Europe, circa 1050-1500.

HTY 231, 232. MODERN EUROPEAN HISTORY I, II (4, 4)
A thematic survey of Europe in the modern age. 231 treats the period from the Renaissance to the French Revolution; 232, from the French Revolution to the present.

HTY 251, 252. LATIN AMERICAN HISTORY I, II (4, 4)
A thematic study of the Spanish-Portuguese New World from the 15th through the 20th century. 251 examines the Iberian New World with special emphasis on the Spanish-Portuguese invasions and conquests, cultural clash, New World colonial societies, and the Wars for Independence. 252 studies the emergence of the Latin American states; emphasis is on Latin America within a Third World context: political-social change, under-development, imperialism and revolution.

UPPER LEVEL COURSES

PART II

HTY 301. AMERICAN COLONIAL HISTORY TO 1750 (4)
A study of European interest and involvement in America from the Age of Re却onnaissance to 1750. Attention is given to imperial conflicts, religious development, economic growth, and the beginnings of distinctive American views.

HTY 302. THE AMERICAN REVOLUTIONARY ERA (4)
A study of American development from 1750 to 1789 with emphasis on institutional development and the establishment of the American national system as an outgrowth of revolution and counter-revolution.

HTY 303. THE AGE OF JEFFERSON (4)
A study of the formation of the American national state, the development of political parties, continental expansion and reform movements. Covers the period from 1783 to 1828.

HTY 304. THE AGE OF JACKSON (4)
A study of the formation 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.

HTY 305. 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.

GLY 691. GRADUATE SEMINAR
PR: CC. May be repeated for credit. (S/U only.)

GLY 699. THESIS
PR: CC (S/U only.)

HTY 309. AMERICAN FOREIGN RELATIONS TO 1898 (4)
The development of American Foreign Relations in the Agricultural era. (Formerly HTY 409.)

HTY 310. AMERICAN FOREIGN RELATIONS SINCE 1898 (4)
A history of American Foreign Relations in the Industrial era. (Formerly HTY 410.)

HTY 311. THE ORIGINS AND GROWTH OF THE AMERICAN SOUTH (4)
a chronological study of the South in its relations with the rest of the United States focusing on the origins and development of Southern institutions and thought.

HTY 312. THE SOUTH AND THE NATION (4)
The growth of the "New South," and the increasing integration and assimilation of the South in the nation.

HTY 317. EARLY FLORIDA HISTORY (4)
A history of colonial Florida under the Spanish and English. Florida as an area of discovery, colonization and imperial conflict; the emergence of Florida within its regional setting.

HTY 318. MODERN FLORIDA HISTORY (4)
Florida from its acquisition by the United States in 1821 to the present time. Stresses political, economic, and cultural growth and the effect of the environment.

HTY 319. THE EMERGENCE OF MODERN AMERICA (4)
A study of the transition of American society from the era of Reconstruction to WWI focusing on industrialization, expansion and urbanization.

HTY 320. THE GROWTH OF MODERN AMERICA (4)
A study of American Society from WWI to the Present with special emphasis on the emergence of the United States as a world power.

HTY 321. HELLENIC 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.

HTY 322. HELLENISTIC GREECE (4)
A study of the career of Alexander The Great and of major developments in the Hellenistic period.

HTY 325. 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.

HTY 326. 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.

HTY 327. MEDIEVAL SOCIETY (4)
An investigation into the daily life and attitudes of the medieval peasant and townsman, and the agrarian-urban economy and society which affected their lives.

HTY 328. 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.

HTY 330. EARLY MODERN EUROPEAN NATIONAL HISTORIES (4)
A study of major developments in specific countries. Each permanent section of the course will be devoted to the history of an individual country: Section 001, British history to 1715; Section 002, French history to 1789; Section 003, German history to 1870; Section 004, Russian history to 1855. May be repeated for credit providing the student enrolls in a different permanent section.

HTY 331. MODERN EUROPEAN NATIONAL HISTORIES (4)
A study of Modern historical developments in specific countries. Each permanent section will be devoted to an individual country: Section 001, British history 1715 to Present; Section 002, French history 1789 to Present; Section 003, German history 1870 to Present; Section 004, Russian 1855 to Present; Section 005, Italian history 1861 to Present. May be repeated for credit providing student enrolls in a different permanent section.

HTY 345. BRITISH EMPIRE
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.

HTY 347. HISTORY OF CANADA
A study of the major themes in the political and social development of Canada, with particular emphasis on the origins and development of French-Canadian nationalism, continentalism, and dominion-provincial relations.

HTY 352. IMPERIAL SPAIN AND PORTUGAL
A study of the peoples of the Iberian Peninsula from the late Medieval Period to 1898. (Formerly HTY 324.)

HTY 353. 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.

HTY 354. CARIBBEAN HISTORY
A thematic study of major political and socio-economic developments in the Caribbean area.

HTY 355. 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 nineteenth and twentieth centuries.

HTY 357. ANCIENT AND IMPERIAL CHINA
A survey of Chinese history from the earliest agrarian societies to the height of Chinese civilization in the Ming Dynasty (ca. 15th-16th Centuries).

HTY 358. MODERN CHINA
A survey of the 19th and 20th Centuries up to the creation of the Chinese People's Republic in 1949.

HTY 360. HISTORY OF THE RENAISSANCE
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. (Formerly HTY 425.)

HTY 361. THE REFORMATION AND THE WARS OF RELIGION
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 the light of the cultural, social and economic characteristics of the period. (Formerly HTY 426.)

HTY 362. HISTORY OF THE ENLIGHTENMENT
The history of Europe from the Peace of Westphalia (1648) to the outbreak of the French Revolution. (Formerly HTY 428.)

HTY 363. HISTORY OF NINETEENTH CENTURY EUROPE
A comparative study of major economic, political, and socio-cultural developments in 19th Century Europe.

HTY 364. HISTORY OF TWENTIETH CENTURY EUROPE
A comparative study of major economic, political and socio-cultural developments in 20th Century Europe. (Formerly HTY 430.)

HTY 365. BYZANTINE HISTORY TO 867
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.

HTY 366. IMPERIAL BYZANTIUM
A study of the Byzantine Empire during the period 867-1453. Emphasizing causes for its decline and fall.

HTY 367. INTRODUCTION TO AFRICAN HISTORY
An outline survey of precolonial African history including a prefatory introduction to the use of primary sources (such as archaeology, oral tradition, cultural anthropology, comparative linguistics, documents) in reconstructing the African past. (Also listed as AFA 334.)

HTY 368. AFRICAN HISTORY SINCE 1850
Survey of the colonial and post-colonial history of Africa. Emphasis on the impact of European and other alien influences on the continent, emergence of independent African states and post-independence problems of nation building and economic development. (Also listed as AFA 334.)

HTY 371. CONTEMPORARY PROBLEMS IN HISTORICAL PERSPECTIVE
Topics of contemporary significance are explored in terms of their historical development.

HTY 381. SPECIAL TOPICS
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.

HTY 400. SOCIAL AND INTELLECTUAL HISTORY
A study of major social & intellectual developments in the areas of concentration offered by the Department. Each area is represented by one of the following permanent sections: Section 001, The Ancient World; Section 002, Medieval Europe; Section 003, Modern Europe; Section 004, Latin America; Section 005, The United States of America. May be repeated for credit providing the student enrolls in a different section.

HTY 461. 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.

HTY 465. SCIENCE AND CIVILIZATION
A thematic study of the interrelationship of science and society in modern history, science as a social institution in history.

HTY 485. DIRECTED READING
PR: CI. Arrangement with instructor prior to registration. Readings in special topics.

PART III

HTY 487. 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. (Formerly HTY 587.)

HTY 491. PRO-SEMINAR IN HISTORY
PR: CI. Advanced topics in the fields emphasizing readings, discussion, research, and writing. One pro-seminar is required of all history majors. Non-majors may enroll with the consent of the instructor. Topics vary within each field. (Formerly HTY 591.)

HTY 492. 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 HTY 491. (Formerly HTY 592.)

FOR GRADUATE STUDENTS ONLY

HTY 600. 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.

HTY 601. THEORY AND INTERPRETATION
A systematic examination and evaluation of various schools of historical interpretation.

HTY 680. COLLOQUIUM IN HISTORY
Reading and discussion of selected topics within the fields.
HUMANITIES (HUM)

Subject and scope to be determined by the instructor. May be repeated for credit.

HUM 308. THE HUMANITIES
(4)
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.

HUM 311, 312, 313. HUMANITIES AND HUMANE VALUES
(5, 5, 5)
Masterpieces of music, visual arts, theater, literature, and philosophy in varying cultural and historical situations.

HUM 315. THE HUMANITIES
(4)
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. (Formerly CBS 315.)

HUM 316. THE HUMANITIES
(4)
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. (Formerly CBS 316.)

HUM 317. THE HUMANITIES
(4)
Studies in Culture: The 20th Century. Analyses of selected works of 20th Century art, primarily emphasizing film, with secondary emphases on painting and fiction. (Formerly CBS 317.)

HUM 350. THE CURRENT SCENE
(2)
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.)

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.

HUM 685. DIRECTED READING AND RESEARCH
(1-10)
PR: Graduate standing and consent of the program of the candidate's major, and consent of the History of Ideas program. Individual studies in the history of ideas.
HUM 411, 412. TWENTIETH-CENTURY ARTS AND LETTERS (5, 5)
PR: Sophomore standing or CI. Case studies in the arts and letters of the twentieth century.

HUM 415, 416. ARTS AND LETTERS OF THE ROMANTIC PERIOD (4, 4)
PR: Sophomore standing or CI. Case studies in the arts and letters of the romantic period.

HUM 417, 418. NINETEENTH-CENTURY ARTS AND LETTERS (4, 4)
PR: Sophomore standing or CI. Case studies in the arts and letters of the nineteenth century.

HUM 419, 420. THE ENLIGHTENMENT (4, 4)
PR: Sophomore standing or CI. Case studies in the arts and letters of the Enlightenment.

HUM 423, 424. RENAISSANCE ARTS AND LETTERS (4, 4)
PR: Sophomore standing or CI. Case studies in the arts and letters of the Renaissance.

HUM 427, 428. MEDIEVAL ARTS AND LETTERS (4, 4)
PR: Sophomore standing or CI. Case studies in the arts and letters of the middle ages.

HUM 431, 432. CLASSICAL ARTS AND LETTERS (4, 4)
PR: Sophomore standing or CI. Case studies in the arts and letters of the ancient world.

HUM 481. DIRECTED STUDY (1-5)
Specialized individual study determined by the student's needs and interests.

HUM 483. 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.

HUM 491. SELECTED PROBLEMS IN HUMANITIES (3)
Problems in the interrelationships among the fine arts and the natural, social and behavioral sciences. A senior essay for humanities majors.

FOR SENIORS AND GRADUATE STUDENTS
HUM 535, 536, 537. HUMANITIES IN AMERICA (4, 4, 4)

INTERDISCIPLINARY LANGUAGE-LITERATURE (LLI)

LOWER LEVEL COURSES
LLI 200. USE OF THE LIBRARY (2)
An introduction to the resources of the University of South Florida Library. Emphasis will be placed on library materials germane to the course work of the undergraduate. (S/U only.)

UPPER LEVEL COURSES
LLI 383. SELECTED TOPICS (3-5)
Course contents depend on student's need and instructor's interest. Agreement with instructor required prior to registration.

LINGUISTICS (LIN)


UPPER LEVEL COURSES
LIN 301. INTRODUCTION TO LINGUISTICS (4)
Introduction to the basic principles of linguistic science: phonological and grammatical analysis and description; language change and genetic relationships. (Note: One section of LIN 301 is for Anthropology majors and requires ANT 201 as a prerequisite.)

LIN 321. LANGUAGE AND MEANING (4)
A survey introduction for non-specialists to the basic principles of semantics and the way language conveys ideas.

LIN 401. DESCRIPTIVE LINGUISTICS (4)
PR: LIN 301, ENG 475, or CI. Introduction to the basic techniques of formalizing linguistic descriptions through elementary phonological, morphological, and syntactic data solution problems drawn from a variety of languages. Both taxonomic and generative analyses and descriptions will be developed and compared.

LIN 483. SELECTED TOPICS (3-5)
PR: CI. Course content depends upon student's needs and instructor's interest and may range over the entire field of linguistics.

LIN 485. DIRECTED READING (3-5)
PR: CI. Readings in special topics. Must be arranged prior to registration.
FOR SENIORS AND GRADUATE STUDENTS
LIN 511. HISTORY OF LINGUISTIC THOUGHT (4)
Survey of the development of language study in the West from Antiquity to the present: Classical and medieval theories of language; origins of traditional grammar; rationalistic linguistic theory and philosophical grammar, and an examination of the origin of contemporary linguistic controversies.

LIN 530. FIELD METHODS (4)
PR: LIN 401 and SPE 503. An introduction to the techniques of gathering language data in the field and to making an analysis of such data. Native informants are brought on campus to replicate the field experience: students will become familiar with equipment and tools used by linguists in the field.

LIN 540. SOCIOLINGUISTICS (4)
PR: LIN 301 or ENG 475. An analysis of the interrelation of a language and the structure of the society using it. The linguistic behavior patterns characteristic of particular social, political, economic, educational, and racial groups. Problems in communication between strata.

LIN 541. PSYCHOLOGICALINGUISTICS (4)
PR: LIN 301 or ENG 475. The nature of linguistic structure and its correlates in behavior and perception. Examination of the hypotheses of Whorf, Chomsky, and others.

LIN 543. SEMIOTICS (4)
PR: CI. Introduction to kinesics and paralinguistics: the linguistic structure of gesture, proxemics, and other significant areas of non-verbal communication and signaling behavior.

LIN 545. DEVELOPMENTAL PSYCHOLOGICALINGUISTICS (4)
PR: LIN 301, ENG 475, or CI. A survey of current research and theory in the processes of normal language acquisition and development.

LIN 551. STUDIES IN COMPARATIVE STRUCTURE (5)
PR: CI. An introduction to linguistic typology consisting in a systematic comparison of characteristic representatives of the various language types, such as Vietnamese, Malay, Hungarian, Swahili, Sanskrit, Hebrew, and others. No knowledge of any of these languages on the part of the student is presumed.

LIN 581. INDIVIDUAL RESEARCH (3-5)
PR: CI. Specialized individual work in area of student's interest.

LIN 583. SELECTED TOPICS (3-5)
PR: CI. Course content depends upon students' needs and instructor's interest and may range over the entire field of linguistics. Study of languages not otherwise offered, such as Japanese and Hindi. May be repeated.

LIN 585. DIRECTED READING (4)
PR: CI. Readings in special topics. Must be arranged prior to registration.

FOR GRADUATE STUDENTS ONLY
LIN 600. INTRODUCTION TO GRADUATE STUDY IN LINGUISTICS (2)
Required of all M.A. candidates. An introduction to the aims and methodology of linguistics as a graduate discipline: the field of linguistics and its relationship to adjacent arts and sciences; bibliographical resources; methods of research; and, a brief survey of the historical development of linguistics and current issues in the field.

LIN 601. SYNTACTIC DESCRIPTION (4)
Analysis of syntactic descriptions of various languages through data-solution problems in co-occurrence relations, agreement, permutation, conjoining, and embedding. Feature grammars and other models are discussed.

LIN 602. PHONOLOGICAL DESCRIPTION (4)
Analysis of the phonological component of a grammar, its role and formal structures. The generative model is compared to taxonomic descriptions. Theory and data-solution problems.

LIN 611. HISTORICAL LINGUISTICS (4)
An advanced survey of the principles and methodology of historical linguistics.

LIN 612. COMPARATIVE LINGUISTICS (4)
The principles and methodology of comparative linguistics, focusing upon a major Indo-European subfamily, such as Romance, Germanic, or Balto-Slavic.

LIN 621. STUDIES IN SEMANTICS (4)
Selected problems in the area meaning and the relationship between linguistic structure and cognition. Mappings of presupposition, kinship fields, emotive concepts, and other problems are surveyed. Theories such as Fodor-Katz-Chomsky, Ross-Lakoff-McCawley, and others are contrasted.

LIN 631. FORMAL STYLISTICS (4)
Studies in the relationship between the development of language study and literary criticism: developments in modern linguistic theory and their application to problems of aesthetics, literary structure, and style.

LIN 641. PRINCIPLES OF ENGLISH AS A SECOND LANGUAGE (4)
Analysis of the phonological, morphological, and syntactic features of English as a basis for linguistic application to problems of English language acquisition by non-native speakers.

LIN 661. TOPICS IN THEORETICAL LINGUISTICS (4)
Offerings will include current issues in any area of linguistic theory.

LIN 671. TOPICS IN APPLIED LINGUISTICS (4)
Offerings may include topics in such fields as sociolinguistics, psycholinguistics, and stylistics.

LIN 683. SELECTED TOPICS (3-5)
Content will depend upon instructor's interests and students' needs. Such topics as computational and mathematical linguistics, biolinguistics, dialectology and linguistic geography, and pidgins and creoles may be treated, as well as the study of the structures of languages not ordinarily taught.

LIN 685. DIRECTED READING (3-5)
Readings in special topics and specialized individual work. Must be arranged prior to registration.

LIN 699. RESEARCH AND THESIS (1-8)
Required of all candidates for the M.S. degree in Linguistics. Registration may be repeated, but accumulated credit may not exceed eight hours.

MANAGEMENT (MAN)


UPPER LEVEL COURSES
MAN 301. PRINCIPLES OF MANAGEMENT (5)
Study of the fundamentals of management, integrating the classical, behavioral, and management science approaches into an organized system of concepts and practices.

MAN 312. INTRODUCTION TO MANAGEMENT SCIENCE (4)
A survey of management science techniques and their application to problem solving and decision making.

MAN 322. ORGANIZATIONAL BEHAVIOR ANALYSIS (4)
A survey of the behavioral and research literature in the behavioral and social sciences relevant to organizational functioning. Emphasis will be placed on the role of the individual, the group and inter-group relations in organizational settings and the impact of managerial environments on organizational behavior and change. Two hours lecture, two hours management problem laboratory.
MAN 332. INDUSTRIAL RELATIONS (4)
A conceptualization of the administrative problems arising from unionization. Emphasis on the relationships between management and employee representatives in private and public employment, and on the historical and legal framework of industrial relations.

MAN 341. PERSONNEL MANAGEMENT (3)
Systematic analysis of major functions in personnel, including manpower planning, recruiting, selection, job evaluation, performance appraisal, wage and salary, incentives, training and development, etc., emphasizing the role of the individual in the organization.

MAN 421. OPERATIONS MANAGEMENT: A SYSTEMS APPROACH (3)
A systems approach to the study of effective operations management tools and concepts. Computerized approaches to problem solving are introduced and an emphasis is placed on interpretation of output for decision making purposes. A knowledge of the basic tools and techniques of management science is required.

MAN 431. ADVANCED ORGANIZATIONAL BEHAVIOR ANALYSIS (3)
Methods of analyzing complex organizational functioning and performance will be studied using selected behavioral models. This course assumes a familiarity with the literature in the field of organizational behavior and its general implications for management. One hour lecture and two hours management laboratory.

MAN 451. MANAGERIAL BEHAVIORAL LABORATORY (3)
The development of first hand understanding of the personal, inter-personal and inter-group factors involved in social interaction. A general knowledge of the literature in the field of organizational behavior and social psychology is assumed. One hour lecture and two hours behavior dynamics laboratory.

MAN 453. CHANGING ORGANIZATIONS (3)
The central unifying concept is the role of the Change Agent. Theory and research related to social-organizational change and resistance to change is considered along with its implications for the design of conditions and their differential effects on organizational climate. A knowledge of the literature in organizational and social behavior is necessary. Lecture and management laboratory.

MAN 461. LABOR RELATIONS LAW (3)
A survey of the various legal constraints applicable to labor-management relations. Includes practice in use of library resources for discovering statutes, cases or administrative rulings. This course assumes a general understanding of the organizations of management and union, the role of each in collective bargaining, and traditional methods for resolving industrial conflict. One and one-half hours lecture, one and one-half hours case analysis and research.

MAN 463. SEMINAR IN NEGOTIATION AND ADMINISTRATION OF LABOR AGREEMENTS (3)
An application of industrial relations theory to cases provided by the instructor. Includes exercises in contract negotiation, administration, grievance settlement, and arbitration. This course assumes a general understanding of the organizations of management and union, the role of each in collective bargaining, and traditional methods for resolving industrial conflict. Three hours laboratory under supervision of instructor.

MAN 465. LABORATORY IN THE RESOLUTION OF GROUP CONFLICT (3)
An application of conflict resolution theory to a variety of social settings, including industrial and governmental organizations and inter-racial conflict. This course assumes a general understanding of inter-personal and group behavior. Three hours laboratory under the supervision of instructor.

MAN 471. MANAGEMENT SCIENCE APPLICATIONS (3)
An analysis of the application of management science models to typical organizational problems. Emphasis is on (1) problem formulation (2) data collection and (3) interpretation and implementation of solutions. A laboratory using decision science problems of organizations is a major part of this course. A knowledge of the basic tools and techniques of management science is required.

MAN 472. MANAGEMENT SCIENCE MODELS (3)
A study of the theoretical basis of various management science models. These include linear, integer, dynamic, quadratic and geometric programming; plus, gradient methods and branch and bound. A knowledge of the basic tools and techniques of management science is required.

MAN 473. SIMULATION AND MODELING TECHNIQUES (3)
A study of manual and computer simulation techniques and their application to problem solving in management (behavioral and quantitative). Knowledge of a computer language and the basic tools and techniques of management science is advised.

MAN 483. SELECTED TOPICS IN MANAGEMENT (1-6)
The content and organization of this course will vary according to the current interests of the faculty and needs of students.

MAN 489. GUIDED RESEARCH IN MANAGEMENT (1-4)
PR: Graduating quarter of CC. Student engages in integrating field project, or other research in which special interests and as much course work as possible can be utilized. Only most general departmental supervision is exercised; management is by results.

MAN 499. INTEGRATIVE SEMINAR IN MANAGEMENT (3)
PR: One of the following group: MAN 312, MAN 322, MAN 332; and two additional upper level MAN courses, and senior standing. or CI. A capstone course intended to integrate the concepts, generalizations, principles, and skills learned separately in previous, more specialized courses in Management and Administration. Emphasis, decision-making, action planning, and implementation.

FOR SENIORS AND GRADUATE STUDENTS

MAN 501. SURVEY OF MANAGEMENT (3)
A background-building course for senior undergraduates or beginning graduate students who require additional background in any course area. Modules will be offered in behavioral, quantitative and industrial relations areas.

MAN 572. URBAN MANAGEMENT (3)
A problem-oriented course dealing with an analysis of a modern urban environment and urban management systems. Urban managers may participate in the seminar and significant urban problems will be used as vehicles for instruction. These will include the development of a management information system for making land use decisions and the planning and evaluation of community development programs.

FOR GRADUATE STUDENTS ONLY

MAN 601. MANAGEMENT OF ORGANIZATIONAL BEHAVIOR (3)
A survey course emphasizing the applications of theory and research in behavioral and social sciences to the practice of management. Topics include the determinants of behavior in complex organizations, the impact of work environments on employees, organization diagnosis and change using field data wherever possible.

MAN 602. ADMINISTRATIVE DECISION PROCESSES (3)
PR: GBA 603 and GBA 605. A survey of the development and implementation of systematic decision processes in organizations. The course analyzes the application of Management Science and Operations Management techniques to problem solving in organizations.

MAN 603. MANAGEMENT OF COMMUNICATIONS (3)
The analysis, organization and presentation of verbal and written communications and reports. Students will select and define a problem area, construct an annotated bibliography in that area, develop a research design for collection and analysis of appropriate data, and write a report on the proposed program in a form acceptable to the organizational
and academic community. This work should represent a first step in selecting and developing a thesis. (MAN 699).

MAN 604. SIMULATION OF ADMINISTRATIVE SYSTEMS
(3)
A study of manual and computer simulation techniques and their application to administrative problem solving. The course emphasizes: model design and construction; data collection and analysis; model testing and implementation problems. A computer language, such as GPSS or SIMSCRIPT, is used for model construction.

MAN 606. QUANTITATIVE ANALYSIS OF MANAGEMENT DECISIONS
(3)
A study of the development and application of Operations Research tools for administrative problem solving. Using a decision science lab and case approach, the course emphasizes: systematic data collection for problem analysis; identification of appropriate tools for various types of problems; implementation difficulties; and, analysis and interpretation of results.

MAN 607. MANAGEMENT OF CONFLICT
(3)
A survey of the literature on social conflict with emphasis on the causes of conflict within and between various types of organizations. The course will examine and evaluate traditional, as well as, innovative techniques for the resolution of conflict.

MAN 608. THE MANAGEMENT OF OPERATIONS
(3)
A study of the development of systematic planning and control systems at the operational level in organizations. Topics include, but are not limited to: quality control, materials management, cost control, work measurement and work flows, inventory management, production control, and project management and control.

MAN 609. MANAGERIAL BEHAVIOR
(3)
A laboratory approach to the understanding of patterns of interpersonal and inter-group behavior which are significant for the managerial role. Topics include perception expectation, motivation, defenses, conformity—deviation, status, anxiety, behavior control, self development, leadership styles, efficient utilization of time, and a critical analysis of current procedures used for manager development.

MAN 610. COMPUTERS AND MANAGEMENT: THE EXECUTIVE VIEWPOINT
(3)
A study of the use and impact of computers and in modern organizations. The course emphasizes: current practices and future trends; the extended use of computers for broader planning and decision making; the development of Data Based Management Systems and MIS; and, the behavioral problems associated with computerization. Students desiring “hands-on” computer experience may register for an additional special topics course to be taken concurrently with this course.

MAN 611. ORGANIZATIONAL THEORY AND ITS IMPLICATIONS FOR THE MANAGER
(3)
The course covers the major theories of organization and a comparative analysis of the differential options these theories provide for managerial strategy. It deals with the design of managerial environments for accomplishing different goals, the research literature in this field and the implication of this research for prediction and design of environmental change.

MAN 613. THE MANAGEMENT OF ORGANIZATIONAL CHANGE
(3)
An experiential learning course utilizing real data from profit and not-for-profit organizations. The course is designed to provide students with direct experience in the systematic planning, implementation and control of change. By actually collecting and analyzing real data each student develops an operationally viable model for the changes inevitable in any on-going organization.

MAN 615. THE PRACTICE OF MANAGEMENT
(3)
The course offers the student the opportunity to focus on an overall organization and to gain an understanding of the interaction between various components which the manager must integrate—the economic, financial, social, political, and technological. The aim is to provide students with experience in integrative skills through organizational design, planning and control, communication and leadership. To be taken during the last two quarters of study; preferably the final quarter.

MAN 621. MANPOWER MANAGEMENT
(3)
A study of the major factors involved in the development of an effective manpower management strategy; including manpower planning, selection, organization and job design, performance evaluation, career advancement, employer benefits, rights and compensation. Emphasis is on an open-system view recognizing the need to operate within the complex external legal and societal environment while reducing internal conflict.

MAN 622. PLANNING, CONTROL AND HUMANISM IN MANAGEMENT
(4)
A study of an increasing dilemma which is central to the role of all those in supervisory or managerial roles—the conflict between the need to exercise increasingly efficient controls through behavior, planning and budgets and the need for more humanistic management. The dilemma will be considered in a framework of stages of organizational development showing how stages occur in a particular order, how control is managed at each stage and how the conflict between control and humanism decreases with progression. Methods for accomplishing more rapid organizational progression through stages will be presented.

MAN 683. SELECTED TOPICS
(1-6)
If the general guidance of a faculty member on some facet of management not regularly offered in a regular course; or, in conjunction with any regularly scheduled graduate course where a more indepth study of the subject is mutually deemed to be beneficial to the student’s program. Topics would include, but not be limited to: management of health care, managing governmental systems, managing educational systems, entrepreneurial management, managing not-for-profit organizations, managing motivation development. May be retaken for credit providing topic selected is different.

MAN 699. FIELD RESEARCH OR THESIS
(6)
An approved professional-level project under the supervision of a departmental faculty member.

MARINE SCIENCE (MSC)


UPPER LEVEL COURSES

MSC 311. INTRODUCTION TO OCEANOGRAPHY
(3)
Topics in biological, chemical, geological and physical oceanography presented in lectures by a number of specialists in these fields.

FOR SENIORS AND GRADUATE STUDENTS

MSC 511. MARINE POLICY
(3)

PR: MSC 311 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 uses 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.

MSC 519. ICHTHYOLOGY
(5)
PR: CI or senior or graduate status. BIO 201-203, BIO 465 (helpful), ZOO 311 (helpful). The evolution, systematics, and ecology of fishes. (Also offered as ZOO 519.)

MSC 521. CHEMICAL OCEANOGRAPHY
(4)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>MSC 531</td>
<td>GEOLOGICAL OCEANOGRAPHY</td>
<td>Graduation standing or CI. An introduction to the physical, historical sedimentary, and structural geology of the ocean basins and their borders. Lec.-lab.</td>
</tr>
<tr>
<td>MSC 541</td>
<td>PHYSICAL OCEANOGRAPHY</td>
<td>Graduation standing or CI, PHY 305. The world ocean including its morphology, physical properties, currents, waves, tides, heat budget, and related topics. Lec.-lab.</td>
</tr>
<tr>
<td>MSC 551</td>
<td>BIOLOGICAL OCEANOGRAPHY</td>
<td>Graduation standing or CI, BIO 201-203. The study of life in the sea with special reference to distribution, reproduction, adaptation, competition, and populations. Lec.-lab. For students who have not majored in a biological science.</td>
</tr>
<tr>
<td>MSC 583</td>
<td>SELECTED TOPICS IN OCEANOGRAPHY</td>
<td>CI: Special topics in biological, chemical, geological, and physical oceanography.</td>
</tr>
<tr>
<td>MSC 610</td>
<td>SCIENTIST-IN-THE-SEA, I, HYPERBARIC OPERATIONS</td>
<td>CI and diver certification (NAVI or equiv.). Basic principles, physiology, and psychology involved in submarine hyperbaric operations, inside and outside habitats. Lec.-lab. (Also listed as EGB 610.)</td>
</tr>
<tr>
<td>MSC 611</td>
<td>SCIENTIST-IN-THE-SEA II, MARINE SCIENCES</td>
<td>CI and diver certification (NAVI or equiv.). Research equipment and techniques for underwater work in oceanography presented by practicing researchers in the field. Lec.-lab. (Also listed as EGB 611.)</td>
</tr>
<tr>
<td>MSC 612</td>
<td>SCIENTIST-IN-THE-SEA III, UNDERWATER ENGINEERING</td>
<td>CI and diver certification (NAVI or equiv.). 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 as EGB 612.)</td>
</tr>
<tr>
<td>MSC 622</td>
<td>METHODS IN CHEMICAL OCEANOGRAPHY</td>
<td>CI: MSc 521 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 sea-water.</td>
</tr>
<tr>
<td>MSC 632</td>
<td>METHODS IN GEOLOGICAL OCEANOGRAPHY</td>
<td>CI: MSc 531 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 interpreted data analysis. Lec.-lab, field trips.</td>
</tr>
<tr>
<td>MSC 642</td>
<td>METHODS IN PHYSICAL OCEANOGRAPHY</td>
<td>MTH 305, MSc 541 or MSc 521, 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).</td>
</tr>
<tr>
<td>MSC 643</td>
<td>OCEANIC MODELING</td>
<td>MSc 541, MTH 501 or equivalent, and CI. Theory of oceanic modeling including classical analytic wind-driven circulation models, thermohaline models, and both explicit and implicit techniques for numerical modeling of circulation, upwelling, tidal velocities, and diffusion.</td>
</tr>
<tr>
<td>MSC 650</td>
<td>MARINE ALGAL ECOLOGY</td>
<td>BOT 543 or BOT 547 or CI. A consideration of environmental factors that influence the distribution, abundance, and growth of marine algae. (Also listed as BIO 650.)</td>
</tr>
<tr>
<td>MSC 651</td>
<td>MARINE PLANKTON SYSTEMATICS</td>
<td>ZOO 313. The identification of plankton from different depth zones in the sea and from various oceanic regions. Lec.-lab. (Also listed as BIO 651.)</td>
</tr>
<tr>
<td>MSC 652</td>
<td>METHODS IN BIOLOGICAL OCEANOGRAPHY</td>
<td>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.</td>
</tr>
<tr>
<td>MSC 653</td>
<td>MARINE PLANKTON ECOLOGY</td>
<td>ZOO 315. The relations and distributions of planktonic organisms as affected by their physical, chemical and biological environments. Lec.-lab. (Also listed as BIO 653.)</td>
</tr>
<tr>
<td>MSC 656</td>
<td>DYNAMICS OF MARINE BENTHIC COMMUNITIES</td>
<td>EGB 231, ZOO 557, 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.</td>
</tr>
<tr>
<td>MSC 671</td>
<td>FIELD STUDIES IN MARINE SCIENCE</td>
<td>One of the following: MSc 521, 531, 541, 551, 622, 632, 642, 652, or CI. Combination of class room study with the collection, analysis, and interpretation of field data to attack specific problems in marine science both for deep sea and nearshore environments.</td>
</tr>
<tr>
<td>MSC 681</td>
<td>GRADUATE RESEARCH</td>
<td>CI: Directed research on non-thesis topics. May be repeated. (S/U only.)</td>
</tr>
<tr>
<td>MSC 683</td>
<td>SELECTED TOPICS IN OCEANOGRAPHY</td>
<td>CI: Special topics in biological, chemical, geological, and physical oceanography.</td>
</tr>
<tr>
<td>MSC 691</td>
<td>GRADUATE SEMINAR IN OCEANOGRAPHY</td>
<td>Graduate standing. May be repeated. (S/U only.)</td>
</tr>
<tr>
<td>MSC 699</td>
<td>M.A. THESIS</td>
<td>CI: May be repeated to a maximum of 9 credits. (S/U only.)</td>
</tr>
</tbody>
</table>

**MARKETING (MKT)**

**Acting Chairperson:** T. E. Hess; **Professors:** D. C. Sleeper, W. D. Stevens; **Associate Professors:** W. K. Cunningham, W. A. DeBord, D. E. Fairley, T. E. Hess, H. H. Towery; **Assistant Professors:** R. L. Anderson, J. D. Carmichael, N. L. Nicholas, A. C. Wallace.

**UPPER LEVEL COURSES**

**MKT 301. BASIC MARKETING**

PR: ECN 201-202 or CI. Survey of the marketing of goods and services within the economy. The integration of functional, commodity, and institutional approaches from the consumer and managerial viewpoints.

**MKT 311. PRINCIPLES OF SALESMANSHIP AND SALES MANAGEMENT**

PR: MKT 301. Personal selling and sales management as basic elements in the marketing strategy of firms. Includes the development, management of resources and the dynamics of interpersonal and small group behavior and decision processes.

**MKT 312. PRINCIPLES OF ADVERTISING AND SALES PROMOTION**

PR: MKT 301. A comprehensive coverage of advertising, stressing purposes, techniques, organization, research, and media selection including relationships with other marketing mix components. Consideration given to economic and social aspects of advertising and total promotional strategies.

**MKT 315. MARKETING INSTITUTIONS AND CHANNELS**

PR: MKT 301. A detailed study of marketing channels as a
functional area of marketing management responsibility and as a part of marketing strategy. Attention given to wholesaling and retailing and their structural, dynamic interrelationships including distribution logistics.

MKT 316. MARKETING MODELS AND MARKETING SYSTEMS
PR: ECN 331, MKT 315, and GBA 333. An investigation of the utility of formal, logical, mathematical, and other quantitative methods and models as these might be applied to marketing management.

MKT 401. MARKETING LOGISTICS
PR: MKT 315, ECN 331, GBA 333, or Cl. Analysis of the logistics of marketing systems for firms engaged in the marketing of goods and services. Component parts of each system are studied and analytical tools are presented for selecting those alternative which will attain the goals of the firm.

MKT 403. PUBLIC RELATIONS AND THE MARKETING PROCESS
PR: MKT 312 or Cl. Principles, practices, and problems in public relations as an integrated part of and supplement to marketing management responsibilities and decisions.

MKT 405. INDUSTRIAL MARKETING
PR: MKT 315. Problems of marketing industrial goods. Characteristics of markets, channels, industrial sales, promotional practices, research and marketing policies.

MKT 407. MANAGEMENT OF ADVERTISING AND SALES PROMOTION
PR: MKT 312 or Cl. Discussion and analysis of cases bearing on managerial aspects of advertising and sales promotion including research, budget determination, strategy, tactics, and evaluation of results.

MKT 409. INTERNATIONAL MARKETING
PR: MKT 312, MKT 315, or Cl. A study of the procedures and problems associated with establishing marketing operations in foreign countries. The institutions, principles and methods involved in the solution of these business problems will be treated as well as effects of national differences on business practices.

MKT 411. MARKETING RESEARCH
PR: MKT 312, MKT 315, ECN 331 or MTH 345; or Cl. A study of research methods applicable to problem-solving in the field of marketing.

MKT 413. CONSUMER BEHAVIOR
PR: MKT 301 or Cl. An investigation and application of the behavioral factors affecting consumer demand. Consideration given to industrial, governmental and ultimate consumers.

MKT 414. SEMINAR IN MARKETING AND CONSUMER BEHAVIOR RESEARCH
PR: MKT 312, MKT 411, MKT 413. Indepth discussion, formulation application, and evaluation of advanced research techniques and practices as currently applied to facilitate marketing decisions.

MKT 417. RETAILING MANAGEMENT
PR: MKT 301, MKT 315, MKT 413. A comprehensive analysis of the retailing structure, institutions and environment. To include pertinent management theories and practices of organizing, planning and controlling retail operations.

MKT 419. MARKETING MANAGEMENT PROBLEMS
PR: MKT 411, MKT 413, and 3 other MKT courses, or Cl. The integration of marketing knowledge applied to decision roles in managing the total marketing effort of firms, and coordination with other major functional areas on specific problems.

MKT 489. SPECIAL STUDIES IN MARKETING
PR: MKT major and Cl. Intensive independent research in marketing under the direction of a major professor; progress and final analysis reported in seminar.

FOR SENIORS AND GRADUATE STUDENTS
MKT 501. SURVEY OF MARKETING
PR: ECN 501. A critical analysis of the field of marketing including aspects of marketing policies, institutions, research, and trends. Special emphasis given to product development, pricing strategy, channel selection, and promotion as a basis for marketing management decisions. Assigned readings, discussions, and reports.

FOR GRADUATE STUDENTS ONLY
MKT 601. ADVANCED MARKETING PROBLEMS
PR: MKT 301 or 501, ECN 605 or Cl. A study of the marketing problems of the firm approached from a management point of view. Emphasis is placed upon the development of the student's ability to analyze marketing situations, identify problems, determine solutions, implement corrective action, and plan marketing strategy.

MKT 602. ANALYSIS FOR MARKETING MANAGEMENT
PR: MKT 601, GBA 603, GBA 605, or Cl. The use of quantitative techniques and analytical concepts in marketing decision making; marketing research, model building and simulation; selected statistical decision techniques and computer applications.

MKT 603. SEMINAR IN MARKETING
PR: MKT 301 or 501; ECN 601, 605. The study of contemporary marketing thought, advanced marketing concepts, and recent developments in the field of marketing. Readings, discussions, and individual investigation.

MKT 605. BEHAVIORAL CONCEPTS IN MARKETING DECISION MAKING
PR: MKT 601 or Cl. The application and techniques of the behavioral sciences to the understanding and improvement of the marketing process and decision making concerning consumer behavior.

MKT 607. SEMINAR IN PROMOTIONAL POLICY AND STRATEGY
PR: MKT 605 or Cl. An analysis of theories and practices of advertising, selling and sales management, and sales promotion as they relate to the total marketing program of firms. Emphasis upon the coordination of promotional policy and strategy.

MKT 609. MARKETING CHANNELS AND PHYSICAL DISTRIBUTION MANAGEMENT
PR: MKT 602, MKT 605, or Cl. An analysis of the development of integrated distribution systems. Channel alternative including the institutions involved and physical flow as a part of marketing strategy.

MKT 611. MARKETING RESEARCH AND INFORMATION SYSTEMS
PR: MKT 602, GBA 603, GBA 605, or Cl. A study of the marketing research process, methods and techniques and the need and applicability of information systems.

MKT 683. DIRECTED RESEARCH IN MARKETING (1-6)
PR: MKT 601, MKT 602, and Cl. Intensive advanced independent research in marketing guided by a marketing professor.
COM 301. THE POPULAR ARTS IN AMERICA (4)
A survey of the growth of the popular arts (motion pictures, radio, television, art, best sellers, jazz and other forms of music, the comics, etc.) as mirrors, transmitters and transformers of American cultural values.

COM 302. WRITING FOR THE MASS MEDIA (4)
PR: Sophomore standing; 2.5 GPR; grade of "C" in English 101, 102, 103; typing proficiency. An introduction to the basic skills of writing for the mass media with practice in library research, persuasive writing, and informational writing.

COM 303. MASS COMMUNICATIONS AND SOCIETY (4)
PR: Sophomore standing; 2.5 GPR; grade of "C" in English 101, 102, 103; 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.

COM 311. INTRODUCTION TO ADVERTISING (4)
PR: COM 302 and COM 303. A study of the structures, functions, and persuasive language of advertising in mass media with attention to social, political, economic and legal aspects.

COM 312. ADVERTISING MEDIA STRATEGY (4)
PR: COM 311 or CI. Problems, techniques, strategy of media research, planning, budgeting and effective utilization in advertising.

COM 313. ADVERTISING COPY (4)
PR: EGN 100 or EGN 201, MKT 301, COM 311 or CI. Study and laboratory experience in preparation of advertising copy for newspapers, magazines, radio, television, direct mail, outdoor displays and special items.

COM 314. RADIO-TELEVISION ADVERTISING (4)
PR: COM 311 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.

COM 320. MAGAZINES IN SOCIETY (4)
PR: COM 302 and COM 303. A study of the development of various types of magazines in America, and a critical analysis of current problems and performance of periodicals along with changes indicated for the future.

COM 321. MAGAZINE ARTICLE AND FEATURE WRITING (4)
PR: COM 330, ENG 321, ENG 325, 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.

COM 325. MAGAZINE EDITING (4)
PR: COM 321 or CI. Comparative study of types of magazines and business papers as to objectives and content; planning to meet magazine objectives and reading interest; article and photograph selection and preparation for printing; use of research methods in planning and evaluation; ethical and legal problems of the editor.

COM 330. BEGINNING REPORTING (4)
PR: COM 302 and COM 303. Basic instruction in news judgment, sources of news, newspapering and news writing techniques. Typing ability is required.

COM 331. ADVANCED REPORTING (4)
PR: COM 330. Getting information and writing the more complex and specialized story, techniques of investigative and analytical reporting, including ethical and legal considerations.

COM 334. CRITICAL WRITING: EDITORIALS, REVIEWS, COLUMNS (4)
PR: COM 331, COM 433. 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.

COM 337. REPORTING PRACTICUM (2)
PR: COM 435 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.

COM 341. PRINCIPLES OF PUBLIC RELATIONS (4)
PR: COM 302 and COM 303. 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.

COM 351. LITERATURE AND THE FILM (3)
PR: EGN 102. A study of what happens when a novel is adapted for the movies; of the insights of modern writers and literary critics into the motion picture as an art form analogous to, yet distinct from, literature and of the impact of literature on film-making. Not open for credit to COM majors.

COM 352. PHILOSOPHY AND THE FILM (3)
A study of the philosophical implications of the motion picture as an art form; esthetics in general versus film esthetics; the connection between the world views of such modern philosophers as Bergson, Whitehead, and Bradley, and the world view expressed through the motion picture; the connections between "pure ideas," the ideas in the documentary film and the ideas in the fictional film. Not open for credit to COM majors.

COM 353. INTRODUCTION TO FILM WRITING (4)
PR: COM 354 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.

COM 354. THE FILM AS MASS COMMUNICATION I: SYNTAX (4)
PR: COM 302 and COM 303. 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.

COM 355. THE FILM AS MASS COMMUNICATION II: RHETORIC AND STYLISTICS (4)
PR: COM 354. A continuation of COM 354 to include the effective arrangements of scenes and sequences in motion picture and television films. Concurrent laboratory experiences in sound and editing.

COM 356. THE FILM AS MASS COMMUNICATION III: WORKSHOP (4)

COM 357. CLASSICS OF THE SILENT FILM (4)
Examples of the silent film studies from social, intellectual, historical, and artistic points of view.

COM 358. CLASSICS OF THE SOUND FILM (4)
Examples of the sound film studies from social, intellectual, historical, and artistic points of view.

COM 361. INTRODUCTION TO BROADCASTING (4)
PR: COM 302 AND COM 303. A survey of the organization, structure, and function of the broadcasting industry. (Formerly SPE 241)

COM 362. BROADCAST NEWS (4)
PR: COM 330, COM 361. The study and methods in gathering, writing and editing newscasts for radio and television. (Formerly COM 335)

COM 363. BROADCAST ANNOUNCING (4)
PR: COM 361. Development of skills required for effective announcing and other appearances before microphone and cameras. (Formerly SPE 343)

COM 364. RADIO PRODUCTION AND DIRECTION (4)
PR: COM 361. Radio production and direction; laboratory and broadcast experiences. (Formerly SPE 347)

COM 367. RADIO PRACTICUM (2)
PR: COM 364 and CI. The study, rehearsal, and production of radio programs and materials. (Formerly SPE 348)
COM 368, WRITING FOR RADIO AND TV (4)
PR: COM 361. The writing of radio and television scripts such as documentaries, children's programs, commercials, dramas, talks and demonstrations. (Formerly SPE 349)

COM 370, INTRODUCTION TO VISUAL COMMUNICATIONS (4)
PR: COM 302 and COM 303. The survey of visual communication theory, history, contemporary application and social influences. Emphasis will be on still photography, motion pictures, video taping and graphics as applied to the media.

COM 371, PHOTOJOURNALISM (4)
PR: COM 302 and COM 303. Camera operation, darkroom techniques, picture composition; editing, ethics, history and laws in connection with photojournalism.

COM 372, PHOTOJOURNALISM II (4)
PR: COM 371 or CI. 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.

COM 375, TYPOGRAPHY I (4)
PR: COM 302 and COM 303. 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.

COM 376, TYPOGRAPHY II (4)
PR: COM 375 or CI. A study of the history of typesetting, the emergence of computers and colotype 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.

COM 383, SELECTED TOPICS IN MASS COMMUNICATION STUDIES (1-4)
Courses designed to meet current or specific topics of interest to the instructor and students.

COM 400, INTERNATIONAL COMMUNICATION (4)
Mass communications as internal and international systems; flow of the news; international news communications networks; satellite communication; overseas activities of American media interests; international propaganda; communication and national development; international media organizations and their activities.

COM 403, HISTORY AND PRINCIPLES OF COMMUNICATIONS LAW (4)
PR: COM 302 and COM 303. Historic and Constitutional backgrounds of freedom and control of expression, statutory enactments, major Supreme Court cases, court decisions and administrative rulings which have shaped legal control of communications.

COM 405, GOVERNMENT AND THE MEDIA (4)
PR: COM 403. The relationships between government and the media, with emphasis on current activities of such 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.

COM 414, ADVERTISING CAMPAIGNS (4)
PR: COM 312, 313. Advanced advertising course requiring planning and production of complete general advertising campaign, including research, production methods, budgeting and media schedules.

COM 417, ADVERTISING PRACTICUM (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.

COM 425, MAGAZINE PLANNING AND PRODUCTION (4)
PR: COM 325, 371, 375. Research in new magazine design and production techniques; training in the creative use of typography, photography, art work, text in the "area concept"; letterpress and offset production; financial management of magazines; preparation of a detailed dummy for a model magazine.

COM 427, 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.

COM 433, NEWS EDITING I (4)
PR: COM 330. 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.

COM 434, NEWS EDITING II (4)
PR: COM 433. Continuation of COM 433, 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.

COM 435, PUBLIC AFFAIRS REPORTING (4)
PR: COM 331 or COM 362. Covering city council meetings, courthouse, 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.

COM 437, EDITING PRACTICUM (2)
PR: Senior standing, COM 434, and CI. For selected News-Editorial Sequence majors. Practical experience outside the classroom in a daily newspaper copydesk, where the student works for academic credit under the tutelage of a professional news editor.

COM 439, SEMINAR: CONTEMPORARY NEWSPAPER PROBLEMS (4)
PR: Senior standing and COM 434, COM 435 or CI. A study of the role of the free press in a democratic society and its efforts to fulfill its social and ethical obligations by analyses and discussions of the problems which face the reporter, the editor, and the publisher. (Formerly COM 539.)

COM 441, WRITING FOR PUBLIC RELATIONS (4)
PR: COM 330, 341. 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.

COM 447, 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.

COM 449, PUBLIC INFORMATION (4)
PR: COM 441 or CI. 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. (Formerly COM 541.)

COM 450, ADVANCED CAMERA TECHNIQUES (4)
PR: COM 354. Advanced camera technology, professional procedures, emulsion selection, color control, studio and location shooting, laboratory methods, matte shooting and special effects.

COM 451, SOCIAL HISTORY OF THE FILM TO 1945 (4)
PR: COM 302 and COM 303. The industrial, technological, philosophical and social factors bearing on the rise and development of the motion picture as a popular art. Intensive study of a series of films through screenings and readings.

COM 452, SOCIAL HISTORY OF THE FILM, 1945 TO THE PRESENT (4)
### MATHEMATICS

**140 MATHEMATICS**

**COM**

**COM 453. THE DOCUMENTARY FILM**

PR: Sophomore standing. The development of the documentary movement; earliest newsreels; Flaherty, Grierson, and the GPO Unit, U.S. Government-sponsored films, the Canadian Film Board, Cinema Verite; study of about 60 fact-films from some 20 countries. Stresses objective criteria, critical analysis.

**COM 454. FILM CRITICISM**

PR: COM 330, 451, 452, 453, CI. The film as a mass medium, comparing and contrasting its mass communication aspect with other important aspects. Critical analyses of selected films and intensive readings in the theory of film. Literary, social, dramatic, allegorical, philosophic and historic approaches to film criticism.

**COM 455. ADVANCED FILM LIGHTING**

PR: COM 450 or CI. Advanced lighting of studio and location sets stressing professional procedures and standards from pre-production to post-production.

**COM 456. SENSITOMETRY AND PHOTOMETRICS**

PR: COM 354. The materials and processes of cinema photo; response of materials to development and exposure.

**COM 457. CINEMA DYNAMICS**


**COM 458. FILM DIRECTING**

PR: COM 354. Introduction to the techniques of film direction.

**COM 461. TV PRODUCTION AND DIRECTION**

PR: COM 361 and junior standing. A basic course in the techniques of producing and directing TV programs. (Formerly SPE 441.)

**COM 462. ADVANCED TV PRODUCTION AND DIRECTION**

PR: COM 461 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. (Formerly SPE 442.)

**COM 463. TV NEWS FILM**

PR: COM 362 or CI. Techniques in filming for television news.

**COM 465. BROADCAST LAW**

PR: COM 361 or CI. 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.

**COM 466. MEDIA CRITICISM: BROADCASTING**

PR: COM 361. A critical study of contemporary broadcast content. (Formerly COM 482.)

**COM 467. TV PRACTICUM**

PR: COM 461 or CI. The study, rehearsal and production of television programs and materials. (Formerly SPE 443.)

**COM 468. THE BROADCAST PROGRAM**

PR: COM 361. Program concepts, resources, costs, selection and scheduling. Analysis of programming in terms of structure, appeals and strengths.

**COM 471. COLOR PHOTOGRAPHY**

PR: COM 372 or CI. 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.

**COM 481. INDIVIDUAL RESEARCH IN MASS COMMUNICATION**

PR: CC and CI. The course provides means for a student to do independent study in an area not covered by a numbered course.

**COM 483. SELECTED TOPICS IN MASS COMMUNICATION STUDIES**

PR: Junior standing. Courses designed to meet current or specific topics of interest to the instructor and students.

**COM 485. DIRECTED READINGS IN MASS COMMUNICATION STUDIES**

PR: Junior standing, CC and CI. Reading and directed study in special topics.

**COM 491. SENIOR SEMINAR: INTERCOMMUNICATION—THE MASS MEDIA IN PERSPECTIVE**

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.

### FOR SENIORS AND GRADUATE STUDENTS

**COM 500. THEORY OF MASS COMMUNICATION**

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.

**COM 530. JOURNALISM STUDIES**

PR: Senior standing. Not open for credit to COM majors. An intensive review of mass communication theory and practice as they relate to content in secondary school journalism courses, with some emphasis also on supervision of school publications.

**COM 550. FILM STUDIES**

PR: Senior standing. Not open for credit to COM majors. An intensive review of film theory and practice as they relate to content in secondary school journalism courses, with some emphasis also on supervision of school publications.

**COM 554. FILM PRODUCTION MANAGEMENT**

PR: COM 356. The planning and management of motion picture productions.

**COM 581. INDIVIDUAL RESEARCH IN MASS COMMUNICATION**

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.

**COM 583. SELECTED TOPICS IN MASS COMMUNICATION STUDIES**

PR: Senior standing. Courses, including summer workshops, designed to meet current or specific topics of interest to the instructor and students.

**COM 585. DIRECTED READINGS IN MASS COMMUNICATION**

PR: Senior standing, CC and CI. Reading and directed study in special topics.

### MATHEMATICS (MTH)


### LOWER LEVEL COURSES

**MTH 107, 108. 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.

**MTH 109, 110. FUNCTIONAL MATHEMATICS I, II**

(4,4) Designed as a terminal course for general cultural purposes. Explores the language of mathematics through the study of logic and set theory.
MTH 122. 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 MTH 101 or MTH 211.)

MTH 123. COLLEGE TRIGONOMETRY
(3)
Angles, Trigonometric functions, properties and graphs of trigonometric functions, right triangles, laws of sines and cosines, polar coordinates. (No credit for students with credit in MTH 101.)

MTH 211. ELEMENTARY CALCULUS I
(4)
PR: One year of secondary school mathematics or CC. Basic Algebra concepts, real numbers, functions, graphs. The sequence MTH 211-212-213 is primarily for students from Biological Sciences, Social Sciences, and Business. (No credit for math majors or students with credit in MTH 122.)

MTH 212. ELEMENTARY CALCULUS II
(4)
PR: MTH 211 or CC. The derivative, techniques of differentiation, curve sketching, applications of the derivative. (No credit for Mathematics majors or students with credit in MTH 302 or MTH 351.)

MTH 213. ELEMENTARY CALCULUS III
(4)
PR: MTH 212. Antiderivatives, the definite integral, techniques of integration, logarithmic and exponential functions, application. (No credit for Mathematics majors or students with credit in MTH 303 or MTH 352.)

UPPER LEVEL COURSES

MTH 302. CALCULUS I
(5)
PR: MTH 122, 123 with a grade of "C" or better or CC. Limits derivations applications, definite integral. (No credit for students with credit in MTH 212 or MTH 351.)

MTH 303. CALCULUS II
(4)
PR: MTH 302 with a grade of "C" or better or CC. Antiderivatives, the definite integral, applications, log, exponential, and trig functions. (No credit for students with credit in MTH 213 or MTH 352.)

MTH 304. CALCULUS III
(4)
PR: MTH 303 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 MTH 353.)

MTH 305. CALCULUS IV
(4)
PR: MTH 304 with a grade of "C" or better or CC. Vectors in 3-space, partial derivatives, multiple integrals, infinite series. (No credit for students with credit in MTH 354.)

MTH 309. SET THEORY
(3)
PR: MTH 302 or CC. Relations, functions, order, cardinal numbers.

MTH 310. 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.)

MTH 311. 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.)

MTH 323. LINEAR ALGEBRA
(4)
PR: MTH 302 or CC. Vectors, matrices, systems of linear equations, linear transformations.

MTH 331. 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.)

MTH 332. BASIC ALGEBRAIC CONCEPTS
(4)
PR: MTH 331. Equations, systems of equations and inequalities. The real numbers as a complete ordered field. Complex numbers. (No credit for science majors.)

MTH 333. 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.)

MTH 335. INTRODUCTORY STATISTICS I
(5)
Hypothesis testing, estimation; normal, Chi-square, t, F, binomial, multinomial, distributions; ANOV, CR, RCB designs; single df, regression, correlation, contingency tables. Students who successfully complete this course may not also receive credit for either ECN 331-431 Business and Economic Statistics or SSI 301 Social Science Statistics.

MTH 346. INTRODUCTORY STATISTICS II
(5)
PR: MTH 345 or CC. Factorials, ANCOV; multiple curvilinear regression; response surfaces; Latin square. Split Plots, incomplete blocks designs; distribution free methods.

MTH 351. ENGINEERING CALCULUS I
(4)
PR: Pass diagnostic tests in algebra and trigonometry. Differentiation, limits, differentials, extrema, indefinite integral. (No credit for students with credit in MTH 302 or MTH 212.)

MTH 352. ENGINEERING CALCULUS II
(4)
PR: MTH 351. Definite integral, trigonometric functions, log, exponential, applications. (No credit for students with credit in MTH 303 or MTH 213.)

MTH 353. ENGINEERING CALCULUS III
(3)
PR: MTH 352. Techniques of integration, numerical methods, analytic geometry, polar coordinates, vector algebra, applications. (No credit for students with credit in MTH 304.)

MTH 354. ENGINEERING CALCULUS IV
(3)
PR: MTH 353. Multivariate calculus, series, applications. (No credit for students with credit in MTH 305.)

MTH 401. DIFFERENTIAL EQUATIONS
(4)
PR: MTH 305. First order linear and nonlinear differential equations, higher order linear equations, applications.

MTH 405. ADVANCED CALCULUS I
(3)
PR: MTH 305 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, Riemann-Stieltjes integrals, improper integrals, infinite series, uniform convergence, implicit-function theorems, line and surface integrals.

MTH 406. ADVANCED CALCULUS II
(3)
PR: MTH 405. Continuation of MTH 405.

MTH 407. ADVANCED CALCULUS III
(3)

MTH 420. ELEMENTARY ABSTRACT ALGEBRA
(3)
PR: MTH 309 or CC. Groups, rings integral domain, fields, integers, the rational, reals and complex number systems.

MTH 423. GEOMETRY I
(3)
PR: MTH 302. Emphasis on axiomatics, advanced Euclidean geometry, elements of projective geometry, non-Euclidean geometries.

MTH 424. GEOMETRY II
(3)
PR: MTH 423. Continuation of MTH 423.

MTH 431. VECTOR ANALYSIS
(3)
PR: MTH 305. The algebra and calculus of vectors, applications, general coordinates, introduction to tensor analysis.

MTH 445. INTRODUCTORY PROBABILITY THEORY I
(3)
PR: MTH 305 and MTH 309 or CC. Probability spaces, discrete and continuous probability distributions, expectations.

MTH 446. INTRODUCTORY PROBABILITY THEORY II
(3)
PR: MTH 445. Joint distributions, sums of random variables, weak and strong laws of large numbers, limit theorems.

MTH 447. NUMERICAL ANALYSIS I
(4)
PR: MTH 323; 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.

MTH 448. NUMERICAL ANALYSIS II
(4)
PR: MTH 401 and 447. Continuation of MTH 447.

MTH 471. THE SCOPE AND SIGNIFICANCE OF MATHEMATICS
(4)
PR: Senior or junior standing. Students having completed MTH 302 are not eligible to enter this course. The development of mathematical thought and its application to the
MTH 439. FOURIER ANALYSIS (3)
PR: MTH 305 or CC. Trigonometric Fourier series, orthogonal systems, convergence of trigonometric Fourier series, operations on Fourier series.

MTH 501. ADVANCED DIFFERENTIAL EQUATIONS I (4)
PR: MTH 323, MTH 401 or CC. Existence and uniqueness of solutions, oscillation and comparison theorems, asymptotic behavior of solutions, stability, perturbation theory, applications.

MTH 502. ADVANCED DIFFERENTIAL EQUATIONS II (4)

MTH 510. ELEMENTARY MATHEMATICAL LOGIC (3)
PR: CC. Truth tables, tautologies, quantifiers, rules of inference, informal proofs in mathematics.

MTH 511. ADVANCED LINEAR ALGEBRA (4)
PR: MTH 309, 323 or CC. Vector spaces, linear independence, dimension, matrices, linear transformations.

MTH 513. REAL ANALYSIS I (4)

MTH 514. REAL ANALYSIS II (4)
PR: MTH 513. Continuation of MTH 513.

MTH 515. CALCULUS ON MANIFOLDS (4)
PR: MTH 511 and 514. Calculus of several variables.

MTH 520. COMPLEX ANALYSIS I (4)
PR: MTH 405. Complex numbers, analytic functions and mappings, integrals.

MTH 521. COMPLEX ANALYSIS II (4)
PR: MTH 520. Power series, residues and poles, conformal mapping.

MTH 523. ALGEBRA I (4)
PR: MTH 305, 309, 511. An introduction to group theory.

MTH 524. ALGEBRA II (4)
PR: MTH 523. An introduction to Galois theory.

MTH 525. APPLIED STATISTICAL METHODS I (3)
PR: MTH 445, CC. Statistical inference in physical and engineering sciences utilizing sample probability distributions, point and interval estimation and test of significance.

MTH 526. APPLIED STATISTICAL METHODS II (3)
PR: MTH 525. Applications of analysis of variance and covariance, regression analysis use of $x^2$ for contingency tables and goodness of fit procedures.

MTH 531. TOPOLOGY I (4)

MTH 532. TOPOLOGY II (4)
PR: MTH 531. Continuation of MTH 531.

MTH 535. TENSOR ANALYSIS (3)
PR: MTH 431 or CC. The calculus of tensors, applications to differential geometry and physics.

MTH 537. SPECIAL FUNCTIONS (3)
PR: MTH 401. Orthogonal functions, the gamma functions, Bessel functions, applications.

MTH 539. FOURIER ANALYSIS (3)
PR: MTH 305 or CC. Trigonometric Fourier series, orthogonal systems, convergence of trigonometric Fourier series, operations on Fourier series.

MTH 540. COMPLEX ANALYSIS AND APPLICATIONS (3)
PR: MTH 305 or CC. Complex numbers, analytic and harmonic functions, power series, contour integrals, residues and poles with emphasis on applications.

MTH 541. PARTIAL DIFFERENTIAL EQUATIONS AND APPLICATIONS (3)
PR: MTH 401 and CC. Separation of variables, the heat equation, wave equation, Laplace's equation, classification, Green's functions with emphasis on applications.

MTH 542. METHODS OF APPLIED MATHEMATICS (3)

MTH 543. INTEGRAL TRANSFORMS I (4)
PR: MTH 401, 405, or CC. Introduction to integral transforms with special emphasis on the Laplace and Fourier transforms, applications to differential equations.

MTH 544. INTEGRAL TRANSFORMS II (4)
PR: MTH 543. Continuation of MTH 543.

MTH 545. PROBABILITY THEORY I (3)
PR: MTH 406 or MTH 513. Concepts of probability theory, axioms of probability, random variables, probability distributions and distributions of functions of stochastic variables.

MTH 546. PROBABILITY THEORY II (3)

MTH 547. MATHEMATICAL STATISTICS I (3)
PR: MTH 546. Sample distribution theory, point & interval estimation theory and theory of hypothesis testing.

MTH 548. MATHEMATICAL STATISTICS II (3)
PR: MTH 547. Statistical decision theory to include admissibility of Bayes rules, risk functions, minimax invariant rules and most powerful tests.

MTH 549. STOCHASTIC PROCESS I (3)

MTH 550. NON-PARAMETRIC STATISTICS I (3)
PR: MTH 547, CC. Theory and methods of non-parametric statistics, order statistics, tolerance region and their applications.

MTH 551. NUMBER THEORY (4)
PR: CC. Congruences, quadratic residues, selected topics.

MTH 553. 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.

MTH 554. TIME SERIES ANALYSIS I (3)
PR: MTH 547. Basic concepts of the theory and applications of time series analysis, to include filtering, forecasting modeling and spectral analysis of univariate realizations with applications.

MTH 555. MATRIX COMPUTATIONS (3)

MTH 556. ASYMPTOTIC METHODS (3)
PR: MTH 501 or 542 and MTH 540 or 567. Asymptotic series, applications to differential equations and integrals, and perturbation theory.

MTH 557. MATHEMATICAL OPTIMIZATION THEORY I (3)

MTH 558. MATHEMATICAL OPTIMIZATION THEORY II (3)

MTH 560. ANALYSIS OF ALGORITHMS (4)
PR: MTH 548 or CC. Mathematical Theory associated with algorithms for computer information processing: expected time and space requirements of algorithms, comparison of algorithms, construction of polynomial algorithms, theory, underlying particular algorithms.

MTH 561. ANALYSIS OF ALGORITHMS II (4)
MTH 562. MULTIVARIATE STATISTICAL ANALYSIS I
PR: MTH 548 and 511, or CC. The multivariate normal, estimation of mean vector and covariance matrix, correlation analysis, generalized $T^2$-statistics and testing of the general linear hypothesis.

MTH 563. ANALYSIS OF NUMERICAL METHODS I

MTH 564. ANALYSIS OF NUMERICAL METHODS II
PR: MTH 563. Continuation of MTH 563.

MTH 571. GEOMETRY FOR TEACHERS
PR: MTH 423 and 424 and bachelor's degree or CC. Vectors, measures, perpendiculardity and parallelism, properties of geometric figures, induction and deduction. (No credit for Math. majors.)

MTH 573. ABSTRACT ALGEBRA FOR TEACHERS
PR: MTH 323 and MTH 420 and bachelor's degree or CC. Groups, fields, vector spaces as they relate to high school algebra and geometry. (No credit for Math. majors.)

MTH 574. COMPLEX VARIABLES FOR TEACHERS
PR: MTH 305 and MTH 420 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 Math. majors.)

MTH 575. MATHEMATICAL ANALYSIS I FOR TEACHERS
PR: MTH 305 and bachelor's degree or CC. Advanced consideration of limits continuity, derivatives, differentials. (No credit for Math. majors.)

MTH 576. MATHEMATICAL ANALYSIS II FOR TEACHERS
PR: MTH 575 or CC. Advanced considerations of the definite integral, fundamental theorem of calculus, infinite series. (No credit for Math. majors.)

MTH 583. SELECTED TOPICS
PR: Senior or junior standing and CC. Each topic is a course of study. 0-1-History of Mathematics, 0-3-Logic and Foundations I, 0-5-Number Theory, 0-7-Topics in Algebra, 0-9-Mathematics for Physics, 11-Topics in Probability and Statistics, 13-Topics in Analysis, 15-Topics in Topology.

FOR GRADUATE STUDENTS ONLY

MTH 603. THEORY OF ORDINARY DIFFERENTIAL EQUATIONS I
PR: MTH 501 or CC. Existence theorems, topics in oscillation theory, asymptotic behavior, stability and boundedness of solutions of differential equations.

MTH 604. THEORY OF ORDINARY DIFFERENTIAL EQUATIONS II
PR: MTH 603. Continuation of MTH 603.

MTH 605. MEASURE AND INTEGRATION I
PR: MTH 514. Abstract measure and integration in sigma rings, applications to Euclidean spaces, Fubini's Theorem, Radon Nikodym Theorem, M-repn, $L^p$ theory.

MTH 606. MEASURE AND INTEGRATION II
PR: MTH 605. Continuation of MTH 605.

MTH 607. MEASURE AND INTEGRATION III
PR: MTH 606. Continuation of MTH 606.

MTH 611. COMPLEX ANALYSIS I

MTH 612. COMPLEX ANALYSIS II
PR: MTH 611. Continuation of MTH 611.

MTH 613. COMPLEX ANALYSIS III
PR: MTH 612. Continuation of MTH 612.

MTH 614. INTRODUCTION TO FUNCTIONAL ANALYSIS I

MTH 615. INTRODUCTION TO FUNCTIONAL ANALYSIS II
PR: MTH 614. Continuation of MTH 614.

MTH 624. ADVANCED ALGEBRA I
PR: MTH 524 or CC. Algebraic automata theory.

MTH 625. ADVANCED ALGEBRA II
PR: MTH 624 or CC. Algebraic coding theory.

MTH 632. ADVANCED TOPOLOGY I
PR: MTH 532 and CC. Function spaces, compactifications, covering spaces, other topics.

MTH 633. ADVANCED TOPOLOGY II
PR: MTH 632. Continuation of MTH 632.

MTH 635. ALGEBRAIC TOPOLOGY
PR: MTH 633 or CC. Homotopy, homology groups, local homology groups.

MTH 636. TOPOLOGICAL ALGEBRA I
PR: MTH 633 and CC. Topological semigroups, topological groups, topological rings and fields, Haar measure.

MTH 637. TOPOLOGICAL ALGEBRA II
PR: MTH 636. Continuation of MTH 636.

MTH 639. DIFFERENTIAL GEOMETRY
PR: CC. Local differential geometry, curvature, evolutes and involutes, calculus of variations.

MTH 641. TOPICS IN NUMBER THEORY I
PR: MTH 524 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.

MTH 642. TOPICS IN NUMBER THEORY II
PR: MTH 641. Continuation of MTH 641.

MTH 643. PARTIAL DIFFERENTIAL EQUATIONS I
PR: MTH 541 or CC. Classification of second order equations, Cauchy problems, Dirichlet and Neumann problems, mixed problems, properties of solutions.

MTH 644. PARTIAL DIFFERENTIAL EQUATIONS II
PR: MTH 643. Continuation of MTH 643.

MTH 645. ADVANCED PROBABILITY THEORY I
PR: MTH 606 or CC. Measure theoretic approach to probability, random variables, distribution functions, expectation and characteristic functions.

MTH 646. ADVANCED PROBABILITY THEORY II
PR: MTH 645. Convergence of sequence of random variables, weak and strong laws of large numbers, limit theory of probability distributions.

MTH 648. ADVANCED MATHEMATICAL STATISTICS

MTH 649. STOCHASTIC PROCESS II
PR: MTH 549 or CC. Continuous parameter Markov chains, margingale theory, stationary processes with discrete and continuous increments.

MTH 650. NON-PARAMETRIC STATISTICS II
PR: MTH 550 or CC. Theory and applications of advanced non-parametric methods to include order statistics Kolmokoror-Smirnov and Cramer statistics.

MTH 651. LOGIC AND FOUNDATIONS I
PR: CC. Propositional calculus, Post's theorem, first order and equational calculi, models, completeness and consistency theorems, Godel's theorem, recursive functions.

MTH 652. LOGIC AND FOUNDATIONS II
PR: MTH 651. Continuation of MTH 651.

MTH 654. TIME SERIES ANALYSIS II
PR: MTH 554. Multivariate time series analysis of stationary process to include the theory of filtering, forecasting and spectral analysis.

MTH 655. TRIGONOMETRIC SERIES I
PR: MTH 514. Selected Topics in Fourier Series and sum-
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mability, orthogonal polynomial, almost periodic functions, completeness of sets of functions.

MTH 656. TRIGONOMETRIC SERIES II (3)
   PR: MTH 655. Continuation of MTH 655.

MTH 657. CALCULUS OF VARIATIONS (4)
   PR: MTH 514 and CC. Maxima and minima of functionals, problems of Lagrange, Bolza and Mayer and other topics.

MTH 659. ALGEBRAIC NUMBER THEORY (4)
   PR: MTH 524 or CC. Algebraic number fields, algebraic integers, basis and discriminant of algebraic number fields, ideals, decomposition of ideals. Theorem of Minkowski, applications of Galois Theory to the Theory of Ideals, Units.

MTH 671. MATHEMATICAL OPTIMIZATION THEORY III (3)
   PR: MTH 558 or CC, MTH 615. Linear programming in abstract spaces; integer programming; stochastic programming. Recent research in mathematical programming and related areas.

MTH 673. PARTIAL DIFFERENCE EQUATIONS (4)

MTH 681. GRADUATE RESEARCH (1-15)
   PR: CC (S/U only.)

MTH 683. SELECTED TOPICS (1-6)
   PR: CC. 01-Topology, 02-Analysis, 03-Algebra, 04-Applied Mathematics, 05-Graph Theory, 06-Number Theory, 07-

MEDICAL TECHNOLOGY (MET)

Director: E. D. Olsen; Professors: E. D. Olsen, W. S. Silver; Associate Professor: J. R. Linton.

UPPER LEVEL COURSES

MET 311. 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.

MET 431. 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.

MET 432. CLINICAL MICROSCOPY II (5)
   PR: Senior standing and acceptance into an approved affiliated hospital. A continuation of MET 431. A hospital internship course for medical technology majors.

MET 442. 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.

MET 451. CLINICAL BACTERIOLOGY (8)
   PR: Senior standing and acceptance into an approved affiliated hospital. Instruction in lecture and laboratory on the various aspects of morphology, physiology, and classification of bacteria, especially those related to disease. A hospital internship course for medical technology majors.

MET 453. CLINICAL CHEMISTRY I (9)
   PR: Senior standing and acceptance into an approved affiliated hospital. Instruction in the techniques and procedures for use in clinical chemical analyses. A hospital internship course for medical technology majors.

MET 454. CLINICAL CHEMISTRY II (9)
   PR: Senior standing and acceptance into an approved affiliated hospital. A continuation of MET 453, including procedures required for serology, transfusions, blood preservation, and antibody studies. A hospital internship course for medical technology majors.

MET 485. CLINICAL LABORATORY INSTRUMENTAL ANALYTICAL TECHNIQUES (2)
   PR: Senior standing and acceptance into an approved affiliated hospital. Instruction in the use of special laboratory instruments such as automated instruments, use of radioisotopes, and techniques of measuring basal metabolism. 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
Chairperson: H. N. Schnitzlein; Professor: H. N. Schnitzlein; Associate Professor: J. J. Dowrick; Assistant Professors: R. K. Boler, Sr., N. A. Moore, G. C. Morgan, E. G. Salter, Jr.; Instructors: H. K. Brown, T. M. Holt.

MED 500. GROSS ANATOMY (7)
   PR: Admission to College of Medicine. A study of the gross structure of the human body. Lec.-lab and discussion.

MED 602. MICROSCOPIC ANATOMY (4)
   PR: Admission to College of Medicine. A study of the microscopic structure of normal tissues and organs with emphasis on human material. Lec.-lab and discussion.

MED 603. NEUROANATOMY (4)
   PR: Admission to College of Medicine. A study of the gross and microscopic structure and the functions of the human nervous system. Lec.-lab and discussion.

MED 604. ANATOMY SEMINAR (0)
MED 701. REGIONAL ANATOMY I—Head and Neck (5)
PR: Enrolled in College of Medicine. Regional gross anatomy of the head and neck. This course offers an anatomical background for the clinical practices of Otorhinolaryngology, Oral Surgery, Plastic Surgery, Macillo-facial surgery, and Ophthalmology.

MED 702. REGIONAL ANATOMY II—Thorax, Abdomen, Pelvis and Perineum (5)
PR: Enrolled in College of Medicine. Regional gross anatomy of the thorax, abdomen, pelvis and perineum. This course offers the anatomical basis for the clinical practices of Surgery, Obstetrics and Gynecology and Medicine.

MED 703. REGIONAL ANATOMY III—Extremities (5)
PR: Enrolled in College of Medicine. Gross anatomy of the upper and lower extremities. This course will provide the anatomical substrate for the clinical practice of orthopedic and plastic surgery.

MED 704. SYSTEMIC ANATOMY (20)
PR: Enrolled in College of Medicine. Gross and microscopic structure of the various organ systems. This course will provide the detailed anatomical background for the clinical practice of Medicine and its included subspecialties.

MED 705. MEDICAL DEVELOPMENT ANATOMY AND TERATOLOGY (5)

MED 706. ADVANCED NEUROANATOMY (5)
PR: Enrolled in College of Medicine. A comprehensive study of the structure and functional pathways of the central nervous system. This course will provide the basis for the clinical practice of Neurology, Neurosurgery and Psychiatry.

MED 707. ADVANCED MICROSCOPIC ANATOMY (5)
PR: Enrolled in College of Medicine. A survey of the ultrastructure of cells and tissues with emphasis on human organs and electron microscopic technique. Provides a background for medical research.

MED 708. APPLIED NEUROANATOMY (10)
PR: Enrolled in College of Medicine. Demonstration of applicability of Neuroanatomy to the clinical practice of medicine. Lectures and demonstrations in Neuroanatomy will be correlated with a practice in a neurosurgical environment.

FOR GRADUATE AND MEDICAL STUDENTS

MSG 601. CORE COURSE IN HUMAN ANATOMY (7)
PR: Admission to Ph.D. Program in Medical Sciences. An introduction to human anatomy consisting of both gross and microscopic study of the organ systems.

MSG 607. ADVANCED HUMAN GROSS ANATOMY (8-16)
PR: MSG 601-MSG 606 or consent of the Chairman. Lectures, assigned readings and conferences on the functional and clinical aspects of human gross anatomy.

MSG 608. ADVANCED MICROSCOPIC ANATOMY (4-8)
PR: MSG 601-MSG 606 or consent of the Chairman. An in-depth study of the microscopic anatomy of human cells, tissues, and organs.

MSG 609. METHODS OF ELECTRON MICROSCOPY IN MEDICAL RESEARCH (4)
PR: MSG 601-MSG 606, MSG 608, MSG 610 or consent of the Chairman. Instruction and practice in the methods of electron microscopy as applies to medical research.

MSG 610. NEURAL CORRELATES OF BEHAVIOR (4)
PR: MSG 601-MSG 606 or consent of the Chairman. The study of the structure of neurons and their interrelations will be undertaken using gross and microscopic material. Experimental and historical approaches will provide an opportunity to learn current morphological concepts.

MSG 611. COMPARATIVE NEUROANATOMY (3)
PR: MSG 601-MSG 606 or consent of the Chairman. A survey of the central nervous system of vertebrates.

MSG 612. HUMAN EMBRYOLOGY (4)
PR: MSG 601-MSG 606 or consent of the Chairman. A study of the human embryo including maturation of the germ cells, fertilization, cleavage, germ layer formation, and organ formation. Emphasis will be placed upon the etiology of congenital defects and other malformations.

MSG 614. COMPARATIVE HEMATOLOGY (3)
PR: MSG 601-MSG 606, MSG 607, 608, or consent of the Chairman. A study of hemapoesis and peripheral blood in representative vertebrates.

MSG 615. ANATOMICAL ILLUSTRATIONS AND METHODS (3)
PR: MSG 601-MSG 606, MSG 607, 608, 610 or consent of the Chairman. Instruction and practice in the methods of anatomical illustration, including materials and methods for producing originals and copies of originals for written and oral presentations.

MSG 616. HISTORY OF ANATOMY (2)
PR: MSG 601-MSG 606 or consent of the Chairman. Conferences and assigned readings on the great anatomists and their discoveries.

Biochemistry

MED 605. BIOCHEMISTRY (9)
PR: Admission to College of Medicine. A study of the chemistry and metabolism of biologically important compounds. The interrelationships of various metabolic pathways will be discussed with emphasis on the biochemical aspects of human diseases. Lec.-lab and discussion.

MED 606. BIOCHEMISTRY SEMINAR (6)
PR: Consent of instructor. Current literature dealing with biochemical aspects of human disease will be discussed. Lec. and discussion.

MED 788. RESEARCH IN BIOCHEMISTRY (10-20)
PR: Enrolled in College of Medicine. The student will undertake a specific research project in collaboration with one of the faculty and will participate in research conferences and seminars. Current research areas in the department involve studies of biochemical aspects of neoplasia, muscle differentiation and cholesterol metabolism.

MED 789. MOLECULAR BASIS OF METABOLIC REGULATION (5)
PR: Admitted to College of Medicine. Emphasis will be on mammalian systems and alterations of metabolic control in disease states. The course will consist of lectures and conferences based on the current literature. Topics to be discussed include: mechanisms of hormone action, second messengers (e.g., cyclic AMP), transcriptional control, translation control, protein modification and allosteric regulation.

FOR GRADUATE AND MEDICAL STUDENTS

MSG 603. CORE COURSE IN MEDICAL BIOCHEMISTRY (7)
PR: Admission to Ph.D. Program in Medical Sciences. This course is particularly designed for students in the Medical Science Program. The chemistry and metabolism of biologically important compounds, stressing the relationship of structure and function, and the interrelationships and regulation of the various metabolic pathways will be discussed with special emphasis on human systems.

MSG 619. METABOLIC BASIS OF HUMAN DISEASE (3)
PR: MSG 601-MSG 606 or consent of the Chairman. A graduate course dealing with the disorders in human metabolism that can be described in biochemical terms. Study of these biochemical disorders will aid in the understanding of normal metabolic regulation, differentiation, development and other biological phenomena.
MSG 657. BIOLOGICAL MEMBRANES-STRUCTURE AND FUNCTION (4)
PR: MSG 601-MSG 606 or consent of Chairman. An advanced course dealing with the biogenesis and molecular organization of membrane components; the function of membranes with emphasis on the relationship of the cell membrane to cellular regulation; and discussions of experimental approaches and techniques for the study of cell membranes.

MSG 658. LIPID METABOLISM AND REGULATION (4)
PR: MSG 601-MSG 606 or consent of Chairman. An advanced course dealing with the biochemistry of lipids, the dietary and hormonal regulation, lipogenesis, lipolysis, cholesterol synthesis and bile acid formation and the possible relationship to atherosclerosis. The metabolism and function of prostaglandins will be studied.

MSG 659. MACROMOLECULAR METABOLISM (4)
PR: MSG 601-MSG 606 or consent of Chairman. A study of proteins and nucleic acids with the emphasis of the course being on the metabolism and role of the macromolecules in the regulation of cell division, cell function and metabolism.

Comprehensive Medicine
Chairperson: O. Barrett, Jr.; Professors: O. Barrett, Jr., R. J. Loiselle; Associate Professors: M. M. Rath; Assistant Professor: W. M. Tucker.

Family Practice
Assistant Professor: S. K. Nayer.

MED 711. OUT-PATIENT FAMILY MEDICINE (20)
PR: Enrolled in College of Medicine. With approval of the Dean, students may elect eleven weeks association on a tutorial basis with an approved practitioner of family medicine. With him, they will see patients in the office, make rounds and house calls, and be "on call" for emergencies.

MED 712. IN-PATIENT FAMILY MEDICINE (10)
PR: Enrolled in College of Medicine. Students will serve as clinical clerks on services offering approved residencies in Family Practice.

Interdisciplinary

MED 700. EXTRAMURAL CLERKSHIP (10-20)
PR: Enrolled in College of Medicine. This elective offers the opportunity to gain special extramural experience in programs approved by the Dean and appropriate faculty of the College of Medicine. May be repeated up to 40 credit hours.

MED 763. PERINATOLOGY (20)
PR: Enrolled in College of Medicine. Multidisciplinary experience in management of the high-risk obstetric patient and fetus. Factors of importance during pregnancy, labor, delivery, and the first month of life. Emphasis will be placed on teratogenic influences, abnormal conditions of pregnancy as related to the fetus and newborn, and early management of the infant. Will include modern concepts of intrauterine monitoring and physiology and current problems in maternal-fetal relationships.

MED 764. PEDIATRIC CARDIOLOGY (10)
PR: Enrolled in College of Medicine. Participation in pediatric cardiac clinic and in pediatric cardiac catheterization laboratory.

MED 765. PSYCHIATRIC BASIS OF CARDIOLOGY (10)
PR: Enrolled in College of Medicine. Correlative sessions aimed at gaining the skills in interpreting data from various cardiovascular tests including the catheterization laboratory and the exercise laboratory.

MED 766. RESEARCH AND CLINICAL EXPERIENCE IN ALLERGY (20)
PR: Enrolled in College of Medicine. This course is designed to provide both clinical and research experience for the student interested in allergic problems. The first 5 1/2-week period will be given at the College of Medicine where the student will be involved in current research activities and participate in the Allergy Clinics. The second period will be spent in the Allergy Section, Watson Clinic, Lakeland.

MED 797. DEPARTMENTAL OVERVIEWS (5-20)
PR: Enrolled in College of Medicine. A course designed to reconsider and amplify basic principles in any area where the student requires additional background.

FOR GRADUATE AND MEDICAL STUDENTS

MSG 781. GRADUATE RESEARCH (1-15)
PR: MSG 601-MSG 606 or consent of the Chairman. Directed research for Ph.D. students only.

MSG 783. SELECTED TOPICS (1-4)
PR: MSG 601-MSG 606 or consent of Chairman. Course design and subject matter will depend on interest of faculty members and student demand.

MSG 791. GRADUATE SEMINAR (1)
PR: MSG 601-MSG 606 or consent of the Chairman. Discussion of current topics.

MSG 795. PH.D. DISSERTATION (1-15)
PR: MSG 601-MSG 606 or consent of Chairman. Advanced research and summary of selected topic.

Medical Microbiology
Chairperson: C. W. Fishel; Professor: C. W. Fishel; Associate Professors: D. Halkias, L. J. Paradise; Assistant Professors: R. J. Grasso, T. W. Klein, G. J. Lancz, W. M. LeFor, A. L. Winters.

MED 607. MEDICAL MICROBIOLOGY (9)
PR: Admission to College of Medicine. A study of the role of bacteria, viruses, mycological agents, and parasites as they are related to disease production. Host response to these agents is also an important aspect particularly as related to immune processes. Lect-lab and discussion.

MED 608. MEDICAL MICROBIOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Medical Microbiology. Presentation and discussion of current topics of interest in medical research. Lect. and discussion.

MED 727. EXPERIMENTAL ONCOLOGY (20)
PR: Enrolled in College of Medicine. A course dealing with the biological aspects of neoplasia which will include lectures on differentiation, immunological aspects of tumor growth, viral, chemical and physical carcinogenesis, tumor metabolism and approaches to chemotherapy.

MED 728. CLINICAL MICROBIOLOGY (10)
PR: Enrolled in College of Medicine. The students will receive further training oriented toward the understanding of methods used in the laboratory diagnosis of bacterial, mycotic and parasitic diseases. Correlation of clinical diagnosis and microbiological findings will be made by reviewing patients' charts and discussing the case with the attending physician.

FOR GRADUATE AND MEDICAL STUDENTS

MSG 604. CORE COURSE IN MEDICAL MICROBIOLOGY (7)
PR: Admission to Ph.D. Program in Medical Sciences. An in-depth survey of modern microbiology including studies of bacterial agents, parasitic and fungal organisms, viruses, and immunology.

MSG 617. DIAGNOSTIC MICROBIOLOGY (4)
PR: MSG 601-MSG 606 or consent of the Chairman. This course will consist primarily of conferences, reading assignments and laboratory training. The student will be presented with the theoretical background in understanding the indigenous microflora of man and will be guided in developing practical skills and familiarity with methodology in handling clinical specimens and in isolating, identifying and reporting pathogenic microorganisms.

MSG 618. RESEARCH PLANNING AND METHODS (4)
MED 620. CELLULAR IMMUNOLOGY (4)
PR: MSG 601-MSG 606 or consent of Chairman. Current concepts of cellular interactions in the immune response.

MED 621. ADVANCES IN IMMUNOLOGY (3)
PR: MSG 601-MSG 606 or consent of Chairman. Detailed study of the cellular and biochemical events associated with the development and regulation of immunity and hypersensitivity.

MED 622. IMMUNOCHEMISTRY (4)
PR: MSG 601-MSG 606 or consent of the Chairman. Advanced studies concerning the relationship between antigen and antibody molecules emphasizing chemical interactions.

MED 623. ADVANCED IN VIROLOGY (3)
PR: MSG 601-MSG 606 or consent of the Chairman. The course will cover molecular aspects of viral replication, the effects upon host macromolecular biosynthesis and the molecular basis of viral oncogenic transformation.

MED 624. MICROBIAL PHYSIOLOGY and GENETICS (3)
PR: MSG 601-MSG 606 or consent of Chairman. Microbial metabolic activities and genetic expression will be discussed as they relate to the pathogenesis of infectious diseases.

MED 626. REGULATORY CONTROL MECHANISMS IN ANIMAL CELL SYSTEMS (3)
PR: MSG 601-MSG 606 or consent of Chairman. Regulatory control mechanisms exhibited by procaryotic and eucaryotic systems will be considered as they relate to cellular function.

MED 627. HOST-PARASITE INTERACTIONS (3)
PR: MSG 601-MSG 606 or consent of the Chairman. Lectures and discussions concerned with properties of microorganisms that pertain to their virulence and with anatomic, physiologic, and biochemical alterations occurring in animal and human hosts in response to invasion by virulent microorganisms.

Medicine

MED 619. INTRODUCTION TO MEDICINE (14)
PR: Admission to College of Medicine. A course designed to provide the student with a comprehensive frame of reference for viewing health and disease as an interplay of biological, social and psychological factors. Lec., patient contact, and discussion. The course includes Physical Diagnosis and Tutorial Clerkships.

MED 621-PHYSICAL DIAGNOSIS (5)
PR: Admission to College of Medicine. The basic techniques of clinical evaluation are presented emphasizing history taking and the demonstration of normal and abnormal physical findings. Lec., patient contact, and discussion.

MED 624. MEDICINE CLERKSHIP (20)
PR: Admission to College of Medicine. Each student is assigned to a number of patients, all of whom are followed closely through the entire hospital course. This casework is the primary teaching device. Also, special conferences and clinics provide instruction in various medical and related sub-specialties.

MED 739. ADVANCED GENERAL MEDICINE EXTERNSHIP (12)
PR: Enrolled in College of Medicine. The basic objective is to achieve a higher level of knowledge and capability in the diagnosis and treatment of adult medical illness. The student will assume a higher degree of responsibility for patient care than during the basic clerkship. Students will be expected to function essentially as interns writing and executing orders over the signature of the House Staff. They will take night calls as a member of the care team.

MED 741. CLINICAL CARDIOLOGY (12)
PR: Enrolled in College of Medicine. By functioning essentially as a primary care physician on the Cardiology specialty ward and Coronary Care Unit, the clinical aspects of cardiac disease will be emphasized through primary patient care, daily staff rounds and attendance at cardiac conference.

MED 742. ELECTROCARDIOGRAPHIC INTERPRETATION (10)
PR: Enrolled in College of Medicine. To offer experience in interpretation of electrocardiograms through daily reading with staff instruction. Interpretation of vector-cardiograms and intracardiac catheter electrograms will also be introduced.

MED 743. CLINICAL DERMATOLOGY (10)
PR: Enrolled in the College of Medicine. This rotation has been designed and is especially recommended for those students interested in Family Medicine, Pediatrics, or Internal Medicine. Four of the weeks are spent at University of South Florida affiliated hospitals where both adult and pediatric patients are seen. During the remaining time the student has the opportunity to work on a tutorial basis at the private office of one of the clinical faculty members.

In addition to the clinical practice, periodic reviews of basic and clinical dermatology, as well as informal discussions, take place throughout the course.

MED 744. CLINICAL ENDOCRINOLOGY AND METABOLISM (10)
PR: Enrolled in College of Medicine. Students will attend endocrine clinics, see consultations on the wards, and participate in specialty rounds and conferences. Each student will be assigned several patients to evaluate and discuss in depth with the senior staff.

MED 745. GASTROENTEROLOGY ELECTIVE (10-20)
PR: Enrolled in College of Medicine. This elective is intended as an experience in Clinical Gastroenterology and Hepatology. An acceptable level of competence in interpretation of symptoms and physical findings, in utilization of appropriate laboratory and other diagnostic studies, in knowledge of the basic therapies and interventional approaches, in interpretation of gastrointestinal radiographs, and in performance of sigmoidoscopy will be achieved through a combination of personal instruction and direct patient contact. Participation in and/or observation of a variety of other G.I. procedures will be afforded. Attendance at combined meetings of the G.I. section will provide a further source of learning. Opportunities to participate in an on-going clinical research project will be made available for those students taking more than one unit. May be repeated once.

MED 746. HEMATOLOGY-ONCOLOGY (10)
PR: Enrolled in College of Medicine. Students will be taught the clinical abnormalities and most of the laboratory techniques for diagnosing the common hematological disorders and many of the oncological disorders. This will be done by accompanying fellows and residents on consultations, making rounds with the staff, studying blood and bone marrow slides under the supervision of the attending staff and fellow, and studying specialized laboratory techniques under the direction of the senior technicians. Interested and prepared students will be permitted to do clinical or laboratory research projects under the direction of the attending staff or fellow.

MED 747. INFECTIOUS DISEASE (10)
PR: Enrolled in College of Medicine. The division offers electives which will provide the student with in-depth acquaintance with the clinical and clinical laboratory aspects of infectious disease. The student participates in the consultative evaluation of routine, complex and emergent infections and is expected to develop competence in the ordering, understanding and interpretation of clinical microbiological studies. As a part of the learning experience students will review serious or unusual
MED 748. ADVANCED CLINICAL NEUROLOGY (10)
PR: Enrolled in College of Medicine. The objectives are to learn to perform and interpret the neurologic examination; interpret laboratory and radiologic data; arrive at a reasonably correct clinical diagnosis and understand the principles of management and treatment. The student will be assigned hospitalized patients and outpatients under the supervision of the resident and faculty.

MED 749. CLINICAL NEPHROLOGY (10)
PR: Enrolled in College of Medicine. The object of this course is to provide general experience in clinical adult nephrology, fluid and electrolyte problems, and the care of acutely ill patients. This will include evaluation of patients with early and late renal failure, nephrotic syndrome, acute renal failure, etc. Exposure to both acute hemodialysis and peritoneal dialysis will be available. The student will see and evaluate consultations.

MED 750. CLINICAL ALLERGY AND PULMONARY DISEASE (10-20)
PR: Enrolled in the College of Medicine. This elective has as its basic objective to provide further training in Clinical Allergy and Pulmonary Disease. The student will participate in the clinical management of patients with respiratory disorders. Included in this experience will be instruction in the management of ventilators and respiratory assist apparatus. Time will be spent in the Pulmonary Function Laboratory. The student will learn how to perform and interpret pulmonary function tests. Experience will also be afforded in the diagnosis and management of respiratory related allergic disorders.

MED 785. MEDICINE IN THE TROPICS (20)
PR: Enrolled in College of Medicine. This is an eleven week elective involving the senior student in supervised care of patients in a hospital located in the tropical zones of the Western Hemisphere, in a different clinical setting. The student will work closely with a physician, carry out a clinical research project, and maintain contact with the sponsoring faculty. Reference text material will be available at each site. The course is designed to provide the student with familiarity with tropical diseases. As important, however, is exposure to medical techniques and facilities employed in treatment of common illnesses as they occur in tropical countries. This experience will improve the students’ appreciation for the practice of “Global Medicine.”

Obstetrics/Gynecology

Chairperson: J. M. Ingram; Professor: J. M. Ingram; Associate Professor: C. L. Lay; Assistant Professors: C. J. Hochberg, B. S. Verkauf, R. L. Vermillion.

MED 628. OBSTETRICS-GYNECOLOGY CLERKSHIP (13)
PR: Admission to College of Medicine. Consists of eight weeks of general clinical obstetrics and gynecology. Students are assigned patients, and share in patient care of the obstetric and gynecologic wards, delivery suite, operating rooms and outpatient clinics. The faculty and students participate in daily tutorial sessions, clinical conferences, and obstetric and gynecologic pathology seminars. Audiovisual learning aids and specialized study carrels are available to the student at all times.

MED 713. GYNECOLOGIC ONCOLOGY (10)
PR: Enrolled in College of Medicine. A survey of malignancy of the reproductive system. The didactic portion of the course is supplemented by presentation of patients currently in the therapy on the wards, in Radiotherapy, and in the Gynecologic Cancer Clinic. Principles of surgery, radiotherapy, chemotherapy, and cryotherapy will be covered in depth.

MED 714. RESEARCH IN OBSTETRICS-GYNECOLOGY (10)
PR: Enrolled in College of Medicine. For the student who is interested in concentrating upon one area of research and in reporting the results in a paper. Advice by the departmental faculty in researching the literature and in approaching a particular subject will be given. This elective will be offered to students who have demonstrated interest in research and unusual proficiency in the Clinical Clerkship in Obstetrics/Gynecology.

MED 715. PREPARATION FOR PRACTICE (10-20)
PR: Enrolled in College of Medicine. For students who are preparing for family medicine, or who are considering obstetrics and gynecology as a specialty. Inpatient and outpatient duties in obstetrics and gynecology. Special lectures in obstetric management and office gynecology, with emphasis on office practice techniques. May be repeated one time.

MED 716. THE INFERTILE COUPLE (10)
PR: Enrolled in College of Medicine. A clinical study of infertility in the human for students who desire additional instruction in examination, diagnosis, and treatment of the infertile couple. Assigned reading of pertinent medical literature, both historical and current, is correlated with didactic lectures and with clinical observation in patients. The student is made familiar with diagnostic techniques and the use of specialized apparatus and instruments, and participates in the treatment of patients in the clinic and office.

Ophthalmology


MED 717. TUTORIAL COURSE OF ADVANCED OPHTHALMOLOGY (20)
PR: Enrolled in College of Medicine. A practical working course in ophthalmology. This course intends to bridge the gap between medical school and ophthalmology residency.

MED 718. MEDICAL OPHTHALMOLOGY (5)
PR: Enrolled in College of Medicine. To augment introductory material on eye examination and recognition of eye diseases. Particular emphasis placed on medical diseases as they affect the ocular system (i.e., diabetes, thyroid, vascular disorders, etc.). Designed to compliment careers in internal and family medicine.

MED 784. NEURO OPHTHALMOLOGY (5)

Pathology


MED 617. PATHOLOGY (16)
PR: Admission to College of Medicine. Course will consist of lectures and laboratory which will cover general and systemic pathology. Major emphasis will be given to the etiology and pathogenesis of disease states. Gross and microscopic appearance of organs and tissues in disease will be examined and studied. Students will participate in post-mortem examinations.

MED 618. PATHOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Pathology. Presentation and discussion of current topics of medical importance in general area of pathology. Lec. and discussion.

MED 620. LABORATORY MEDICINE (4)
PR: Admission to College of Medicine. Course will deal with the fundamentals of laboratory procedures in relation to diagnosis and patient care. Didactic demonstrations and laboratory exercises will be conducted to acquaint the student with the significance of laboratory tests.

MED 729. ELECTIVE IN LABORATORY MEDICINE (CHEMISTRY, HEMATOLOGY) (10)
PR: Enrolled in College of Medicine. The student will participate under supervision in the examination and evaluation of laboratory tests (clinical chemistry, hematology). Emphasis will be on correlation of laboratory data with clinical diagnoses. The student and laboratory staff will review selected abnormal findings at daily morning "rounds."

MED 730. PATHOLOGIC ANATOMY (AUTOPSIES AND SURGICAL PATHOLOGY) (20-40)
PR: Enrolled in College of Medicine. The student will perform autopsies and examine surgical specimens under supervision at the Veterans Administration Hospital. He or she will be expected to attend all Pathology Conferences. Particular attention will be given to clinico-pathological correlation.

MED 731. SURGICAL PATHOLOGY (10)
PR: Enrolled in College of Medicine. The student will participate in the processing and in the signing out of surgical specimens at the Veterans Administration Hospital. He or she will be expected to attend Tumor Board and other afternoon exercises dealing with clinico-pathological correlation.

MED 732. EXPERIMENTAL PATHOLOGY (20)
PR: Enrolled in College of Medicine. Experimental studies using morphologic and biochemical techniques with disease models pertaining to inflammation, degeneration, neoplasia, immunopathology or nutritional and metabolic disorders. Students will conduct experimental studies under supervision of senior investigator.

FOR GRADUATE AND MEDICAL STUDENTS

MSG 606. CORE COURSE IN PATHOLOGY (7)
PR: Admission to the Ph.D. Program in Medical Sciences. This course will cover fundamentals of general pathology.

MSG 628. HUMAN SYSTEMIC PATHOLOGY (4)
PR: MSG 601 - MSG 606 or consent of the Chairman. This course will cover fundamentals of systemic pathology.

MSG 629. BIOCHEMICAL PATHOLOGY (3)
PR: MSG 601 - MSG 606 or consent of the Chairman. Several topics in biochemical pathology will be reviewed.

MSG 630. IMMUNOPATHOLOGY (3)
PR: MSG 601 - MSG 606 or consent of Chairman. Review of theoretical aspects and applicable tools available in studies of diseases related to immunologic disturbances.

MSG 631. ADVANCED GROSS PATHOLOGY (2)
PR: MSG 601 - MSG 606 or consent of Chairman. Course will cover gross pathology of human diseases.

MSG 632. ADVANCED MICROSCOPIC PATHOLOGY (2)
PR: MSG 601 - MSG 606 or consent of Chairman. Course will cover microscopic pathology of human diseases.

MSG 665. ELECTRON MICROSCOPY OF DISEASE STATES (3)
PR: MSG 601 - MSG 606 or consent of the Chairman. Ultrastructural techniques and studies of tissue from disease states.

MSG 634. AUTORADIOGRAPHIC TECHNIQUES (2)
PR: MSG 601 - MSG 606 or consent of Chairman. Instruction on light and electron microscopic techniques applicable to disease processes.

MED 740. ANIMAL RESEARCH METHODS (4)
PR: MSG 601- MSG 606 or consent of the Chairman. Animal Research Methods is a laboratory and lecture course for the medical college graduate student. It is designed to inform the student of humane techniques, economics, housing of animals, aseptic surgical techniques, pre and post-operative care, selection of species and legal responsibilities of investigator and institution involving federal laws governing use of animals in research.

Pediatrics


MED 626. PEDIATRICS CLERKSHIP (13)
PR: Admission to College of Medicine. This is an eight week course designed to present the core curriculum in pediatrics. It is an integrated course consisting of a one-week rotation in the newborn nursery and a 7-week rotation of a combined inpatient and outpatient experience. The course is designed to present the student with an opportunity to become proficient in obtaining a pediatric history, performing a pediatric physical examination, and determining normal and abnormal growth and development. Methods of approaching the patient and solving the problems related to differential diagnosis will be stressed. All physicals, examinations, and records will be done under the supervision of the senior house-staff and will be reviewed by the attending staff.

Clinical conferences will be presented for the student in addition to departmental conferences.

The student will present a one hour seminar at the conclusion of the course on a topic of his choice related to patients he has seen.

MED 719. OUTPATIENT PEDIATRICS, TAMPA GENERAL HOSPITAL (10)
PR: Enrolled in College of Medicine. Experience in follow-up of patients, specialty clinics, emergencies.

MED 720. INPATIENT PEDIATRICS, TAMPA GENERAL HOSPITAL (10)
PR: Enrolled in College of Medicine. Responsibility and decision making in critical pediatric problems.

MED 721. OUTPATIENT PEDIATRICS, ALL CHILDREN'S HOSPITAL (10)
PR: Enrolled in College of Medicine. Experience in follow-up of patients, specialty clinics, emergencies.

MED 722. INPATIENT PEDIATRICS, ALL CHILDREN'S HOSPITAL (10)
PR: Enrolled in College of Medicine. Responsibility and decision making in critical pediatric problems.

MED 723. NEONATAL RESEARCH (20)

MED 724 NEONATOLOGY (10)
PR: Enrolled in College of Medicine. Experience and responsibility of problems critical to the newborn.

MED 725. METABOLIC DISEASE RESEARCH (10)
PR: Enrolled in College of Medicine. Laboratory use of chromatography amino acid and organic acid analysers. Clinical or laboratory research. Experience in metabolic clinic. Independent investigation opportunities.

MED 726. PEDIATRIC ENDOCRINOLOGY (10-20)

MED 787. RESEARCH IN PEDIATRIC MEDICINE AND GENETICS (20)
PR: Enrolled in College of Medicine. The facilities of the Pediatric Research laboratories are available for students who wish to pursue individual research in this area. Various projects relating pediatric medicine to biochemical genetics, cytogenetics, and population genetics are available. Each student will be expected after consultation to submit a protocol defining a specific problem, accumulate experimental data, and evaluate the results.

Pharmacology

MED 609. PHARMACOLOGY (9)
PR: Admission to College of Medicine. Studies of pharmacodynamics of drugs including mechanisms of action, side effects, and toxicities. Lec.-lab and discussion.

MED 610. PHARMACOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Pharmacology. Presentation of current research investigations as related to medical problems. Lec. and discussion.

MED 733. CLINICAL PHARMACOLOGY (5)
PR: Enrolled in College of Medicine. The primary objective is to provide experience in the application of general pharmacological principles and the general principles of drug therapy for the rational rather than empirical use of pharmacological agents. Organized primarily as conferences around case-presentations, the focus is directed to the therapeutic indications, alternative choices, contraindications, side-effects, and toxicological aspects of representatives of the classes of drugs involved in the selected case. Lectures on selected topics of general clinico pharmacological interest are also presented.

MED 734. IMMUNOPHARMACOLOGY (1/2)
PR: Enrolled in College of Medicine. The course concerns itself with the sequence of events which take place between the antigen-antibody interaction, and the effect of the immunologically released pharmacologic mediators on their specific cells. While the pharmacologic mediation of immune reactions is the main subject of the course, current problems of drug allergy, as well as drug-induced immuno-suppression are also discussed.

MED 735. PULMONARY PHARMACOLOGY (5)
PR: Enrolled in College of Medicine. This course covers experimental methodology for studying drug effects on the pulmonary system and on isolated portions of that system. The student participates in seminar type research discussions and planning, and participates in the collection of data in the laboratory and its analysis.

MED 736. DRUG METABOLISM AND PHARMACOGENETICS (5)
PR: Enrolled in College of Medicine. The pharmacological and clinical implications of drug metabolism are discussed. The enzymatic mechanisms of drug biotransformation reactions and alterations of these reactions due to pharmacological, environmental and genetic factors are presented. Application of information derived from drug metabolism studies to such clinical problems as dosage, dose interval, tolerance, and drug interactions are emphasized.

FOR GRADUATE AND MEDICAL STUDENTS

MSG 605. CORE COURSE IN PHARMACOLOGY (7-14)
PR: Admission to Ph.D. program in Medical Sciences. Lectures and demonstrations on systematic pharmacology and elementary aspects of therapeutics. Emphasis is on the mechanisms of action in relation to the use of drugs in man.

MSG 635. THEORETICAL PHARMACOLOGY (5-10)
PR: MSG 601 - MSG 606 or consent of the Chairman. Lectures on the principles of drug action, the drug-receptor concept and the factors involved in drug absorption, distribution, excretion and metabolism are presented. Other major topics include pharmacogenetics, tolerance, toxicity, carcinogenesis and mutagenesis.

MSG 636. CLINICAL PHARMACOLOGY (5-10)
PR: MSG 601 - MSG 606 or consent of the Chairman. Lectures and clinical seminars on the pharmacological basis of rational therapeutics and on the clinical use of drugs. Principles underlying clinical trials are also discussed.

MSG 637. PHARMACOLOGY LABORATORY (2-4)
PR: MSG 601 - MSG 606 or consent of the Chairman. General training in laboratory techniques applicable to both physiological and biochemical research in Pharmacology.

MSG 638. IMMUNOPHARMACOLOGY (3-6)
PR: MSG 601 - MSG 606 or consent of the Chairman. Study of antigen-antibody interaction and the effect of the immunologically released pharmacological mediators on their target cells. Also current problems of drug allergy and drug-induced immunosuppression are presented.

MSG 639. PHARMACOLOGY OF BACTERIAL PRODUCTS (4-8)
PR: MSG 601 - MSG 606 or consent of the Chairman. Study of the pharmacological activities of components of bacterial cells, or the products elaborated by bacteria on mammalian host-cells.

MSG 640. THE PHARMACOLOGY OF BIOLOGICAL MEMBRANES (4-8)
PR: MSG 601 - MSG 606 or consent of the Chairman. Study of the effects of drugs on cells and biological membrane.

MSG 641. DRUG METABOLISM (3-6)
PR: MSG 601 - MSG 606 or consent of the Chairman. Discussion of the enzymatic mechanism of drug biotransformation and the techniques for their investigation.

MSG 642. DRUG ADDICTION, TOLERANCE AND PHYSICAL DEPENDENCE (2-4)
PR: MSG 601 - MSG 606 or consent of the Chairman. Consideration of the biochemical basis, clinical and social implications of drug use resulting in addiction, tolerance and physical dependence.

MSG 643. THE HISTORY OF PHARMACOLOGICAL THOUGHT (1-2)
PR: MSG 601 - MSG 606 or consent of the Chairman. Lectures discussing the important conceptual advancements in the evolution of Pharmacology to a Modern Science.

Physiology


MED 611. MEDICAL PHYSIOLOGY (9)
PR: Admission to College of Medicine. A study of the functional aspects of components of the body and its organ systems and their integration into operational units. The physiology of homostasis and the central nervous system will be included. Lec.-lab and discussion.

MED 612. PHYSIOLOGY SEMINAR (0)
PR: Consent of Chairman, Department of Physiology. Seminars in which current research areas of interest as related to medicine are discussed. Lec. and discussion.

MED 737. RESEARCH IN PHYSIOLOGY (5-40)
PR: Enrolled in College of Medicine. Introduction to research techniques and problem solving in the laboratory. Participation in an ongoing research project in the department including experimentation and data handling. May be repeated twice.

MED 738. CARDIO-PULMONARY-RENAL PHYSIOLOGY (5)
PR: Enrolled in College of Medicine. Advanced course illustrating the interrelationships between the cardiovascular, pulmonary and renal organ systems with emphasis on clinical problems.

FOR GRADUATE AND MEDICAL STUDENTS

MSG 682. CORE COURSE IN PHYSIOLOGY (7)
PR: Admission to Ph.D. Program in Medical Sciences. Consideration of the fundamental concepts of mammalian and human physiology.

MSG 644. KIDNEY, FLUIDS AND ELECTROLYTES (3)
PR: MSG 601 - MSG 606 or consent of Chairman. Study of kidney function as well as regulation of the composition of the body fluids.

MSG 645. RESPIRATION (3)
PR: MSG 601 - MSG 606 or consent of Chairman. Study of the mechanics and regulation of respiration.

MSG 646. ENDOCRINE MECHANISMS (3)
PR: MSG 601 - MSG 606 or consent of Chairman. Mechanisms and regulation of hormonal actions.

MSG 647. NEUROPHYSIOLOGY (3)
MED 614. BIOSTATISTICS (1)
PR: Consent of Chairman, Department of Psychiatry. Current research surveys in Psychiatry. Lec. and discussion.

MED 615. INTRODUCTION TO PSYCHIATRY (3)
PR: Admission to College of Medicine. Principles of human behavioral science will be presented from the standpoint of the developing organism reacting to its environment. Lec. Patient contact, and discussion.

MED 771. PSYCHIATRIC ILLNESS—BACKGROUNDs AND ORIGINS (5)
PR: Enrolled in College of Medicine. This course encompasses topics such as consciousness, waking, sleeping, memory and learning, emotionality, sensory and motor functions as well as speech, seen from the viewpoint of the psychiatrist with particular emphasis being laid upon the underlying cerebral substrata.

MED 773. ELECTIVE IN CHILD PSYCHIATRY (10)
PR: Enrolled in College of Medicine. An opportunity to provide for interested students to augment their experience in the diagnosis and management of behavioral disorders in children. Emphasis is placed upon problems that are met in family and pediatric practice. Students participate in teaching conferences, supervisory sessions and case seminars. Observations of disturbed children in a nursery school setting introduces the students to the problems of the pre-school period.

MED 775. PSYCHIATRIC RESEARCH TECHNIQUES (10)
PR: Enrolled in College of Medicine. Conferences, practicum and selected readings in the area of psychiatric evaluation of autonomic and CNS functions in human subjects. Studies of emotional responding and studies of altered states of consciousness.

MED 776. INTRODUCTION TO PSYCHOSOMATIC MEDICINE (5)
PR: Enrolled in College of Medicine. Conferences will focus on major issues in Psychosomatic medicine. The format includes presentations by invited specialists and recent developments in ideology, diagnosis and management.

MED 778. QUANTITATIVE MODELS IN PSYCHIATRY AND PSYCHOPATHOLOGY (10)
PR: Enrolled in College of Medicine. A survey of univariate and multi-variate statistical models as they apply to research problems in psychiatry and psychopathology. Problems and topics on application will be selected primarily from the clinical areas.

MED 779. FORENSIC PSYCHIATRY (10)
PR: Enrolled in College of Medicine. This course includes examination of court defendants, visits to court rooms, and various correctional institutions, along with reading and discussion.

MED 782. PRINCIPLES OF PSYCHIATRIC THERAPY (5)
PR: Enrolled in College of Medicine. Treatment of suitable patients under supervision. Basic readings in the teaching of psychiatric therapy will be assigned as well as other readings relevant to issues that appear during the course of supervision.

MED 792. ADVANCED CLERKSHIP IN PSYCHIATRY (10-20)
PR: Enrolled in College of Medicine. Students are instructed in the Veterans Administration and St. Joseph's Hospitals. The assignments provide for an intimate participant-observer role of the medical students in their study and care of inpatients and their families. With this assignment the students assume significant responsibility in their direct work with their patient and the patient's family. The work is supervised by staff and faculty members in the form of tutorials, model demonstrations and personal supervision. Major emphasis ranges from the essentials of those events of human interactions which occur between the patient, the patient's family and the student to knowledge of the significant types of human distress subsumed under the terms emotional and mental illness. An important feature of this training is to demonstrate to the student the application of psychiatric knowledge to problems in general medicine. Instruction is given in clinical psychiatric diagnosis, clinical psychology and in the care and treatment of patients with acute and sustained distress. These patients typically present traditional nosologic entities much as psychosis, neuroses and personality disorders. Students will be exposed to and participate in a variety of treatment modalities including chemotherapy, individual and group psychotherapy and the therapeutic community approach.

MED 614. BIOSTATISTICS (1)
PR: Admission to College of Medicine. Presentation of methods of collection, tabulation, graphic illustration, and analysis of numerical data encountered in medical research areas. Lecture.

MED 615. INTRODUCTION TO PSYCHIATRY (3)
PR: Admission to College of Medicine. Principles of human behavioral science will be presented from the standpoint of the developing organism reacting to its environment. Lec. Patient contact, and discussion.

MED 616. PSYCHIATRY SEMINAR (0)
PR: Consent of Chairman, Department of Psychiatry. Current research surveys in Psychiatry. Lec. and discussion.

MED 627. PSYCHIATRY CLERKSHIP (13)
PR: Admission to College of Medicine. Standard clinical clerkship is in the second year of the medical school curriculum. Didactic material is presented one day per week in conjunction with clinical casework conducted on the wards of the affiliated hospitals. The main points of emphasis will be: (1) evaluation and management of psychiatric emergencies; (2) practical psychopharmacology; and (3) introduction to the process of psychotherapy, again emphasizing short term intervention for individuals and their families.

MED 770. PSYCHIATRY LIASON SERVICE ROUNDS (5)
PR: Enrolled in College of Medicine. Problem patients, generally from the medical and surgical ward will be interviewed by a member of the liaison staff following presentation by one of the residents. This will be followed by discussion which will emphasize problems in differential diagnosis and management.
Radiology


MED 767. GENERAL RADIOLOGY (10-20)
PR: Enrolled in College of Medicine. The general principles of X-ray interpretation, including a review of pertinent anatomy, physiology, and general diagnosis. Techniques used, film interpretation and fluoroscopy.

MED 768. GENERAL AND SPECIALTY RADIOLOGY (10-20)
PR: Enrolled in College of Medicine. The first part of the period will be concerned with general principles and techniques of X-ray examination and diagnosis. “Specialty Radiology” will relate to special studies used, study of specific organ systems (Pulmonary, Cardiovascular, Gastrointestinal, Nervous System, Genitourinary, Skeletal) or to the special areas of Nuclear Medicine and Radiation Therapy.

Surgery


MED 625. SURGERY CLERKSHIP (20)
PR: Admission to College of Medicine. Students actively participate in patient care on the Surgical Services. They are an integral part of the surgical team and are required to accomplish supervised clinical work-up, participate in performance of surgical procedures and in patient follow-up. Students attend conferences and seminars on a regularly scheduled basis during the Clerkship. Educational direction and patient care supervision are provided by the faculty of the Department of Surgery.

MUS 101. RUDIMENTS OF MUSIC (3)
Open only to non-music majors; development of skills in hearing and performing music and in basic notation.

MUS 201, 202, 203. 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.

MUS 204. APPLIED MUSIC (3)
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.

MUS 205. INTRODUCTION TO ELECTRONIC MUSIC (3)
History and repertoire of electronic music; standard sound studio techniques; basic electronics as applied in electronic sound synthesis; mathematics for music composition and electronic music.

MUS 206. CLASS PIANO (2)
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.
MUS 207. SECONDARY APPLIED MUSIC (1)
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.
Sec. 001 Violin
Sec. 010 French Horn
002 Viola
011 Trumpet
003 Violoncello
012 Trombone/Baritone
004 Double Bass
013 Tuba
005 Flute
014 Percussion
006 Oboe
315-021 Voice
007 Clarinet
022-025 Piano
008 Saxophone
026 Harp
009 Bassoon

MUS 208. COMPOSITION (3)
PR: CI. Required of music majors with an area emphasis of Composition; class instruction in original composition; may be repeated for credit.

MUS 221, 222, 223. AURAL THEORY (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 MUS 201, 202, 203.

MUS 231, 232, 233. INTRODUCTION TO MUSIC LITERATURE (2,2,2)
PR: MUS 201 or concurrent enrollment. A survey of representative music examples of the past and present with emphasis upon the study of styles and form. Required for music majors.

UPPER LEVEL COURSES
MUS 301, 302, 303. MUSIC THEORY (3,3,3)
PR: MUS 203. Required of music majors; continuation of MUS 201-203.

MUS 304. APPLIED MUSIC (3)
PR: Necessary competency at MUS 204 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.
Sec. 001 Violin
Sec. 010 French Horn
002 Viola
011 Trumpet
003 Violoncello
012 Trombone/Baritone
004 Double Bass
013 Tuba
005 Flute
014 Percussion
006 Oboe
015-021 Voice
007 Clarinet
022-025 Piano
008 Saxophone
026 Harp
009 Bassoon

PR: MUS 205 and CI. Composition for tape medium with analog synthesizers; use of sound recording studio; repertory of analog music synthesis; technical basis of analog systems design and construction.

MUS 308. COMPOSITION (3)
PR: MUS 203 and MUS 205 and CI. Class instruction in original composition. Required of composition majors. May be repeated for credit four quarters only.

MUS 309, 310, 311. CONTEMPORARY TECHNIQUES OF COMPOSITION (3,3,3)
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.

MUS 312. IMPROVISATION (1)
PR: MUS 203 and CI: A course of study designed to acquaint the student with basic improvisational techniques; emphasis on performance. May be repeated for credit.
Sec. 001 Fundamental Techniques
002 Jazz Techniques

MUS 321, 322, 323. ADVANCED AURAL THEORY (2,2,2)
PR: CI. 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 MUS 301, 302, 303.

MUS 326. BASIC CONDUCTING (2)
PR: CI. The study and practical application of basic conducting techniques. Development of skills related to the conducting of musical scores.

MUS 371. ISSUES IN MUSIC (2)
Open only to non-music majors; lectures and live performances by artist faculty of significant works from the literature for the piano; analysis and illustration in performance of the abstract and aesthetic elements in music which vitally concern the artist-performer. (S/U only)

MUS 372-373. THE ENJOYMENT OF MUSIC (3,3)
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 and its materials, designed to develop an understanding of basic principles of music and a technique for listening to music; Section 001 of MUS 372 is for students who are majoring in dance, theatre arts, and visual arts.

MUS 374. MAJOR PERFORMING ORGANIZATIONS (1)
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; may be repeated for credit.
Sec. 001 University Orchestra
005 Wind Ensemble
002 University Singers
006 Wind Ensemble
003 Opera Workshop
007 University Band
004 Choral Union
901 University Community Chorus

MUS 375. CHAMBER MUSIC ENSEMBLES (1)
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.
Sec. 001 Chamber Singers
008 Horn Quartet
002 Jazz Laboratory Band
009 Clarinet Choir
003 Brass Choir
010 Percussion Ensemble
004 Brass Quintet
011 Marimba Ensemble
005 Woodwind Quintet
012 Flute Choir
006 Piano Ensemble
013 New Music Ensemble
007 String Quartet

MUS 376. HISTORY OF POPULAR MUSIC (2)
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 Requirement by the non-major, and may be used to satisfy part of the 9 hours in College Requirement for Fine Arts majors in Art, Dance, and Theatre.

MUS 401, 402, 403. MUSIC HISTORY (3,3,3)
PR: CI. Required of music majors; a survey of the historical development of musical styles and of the music representative of those styles.

MUS 404. APPLIED MUSIC (3)
PR: Necessary competency at MUS 304 level determined by faculty jury examination. Required of all applied music majors.
Private and class instruction in string, woodwind, bass, and percussion instruments, voice, and piano. May be repeated for credit four quarters only.  

Sec. 001 Violin Sec. 010 French horn  
002 Viola 011 Trumpet  
003 Violoncello 012 Trombone/Baritone  
004 Double Brass 013 Tuba  
005 Flute 014 Percussion  
006 Oboe 015-021 Voice  
007 Clarinet 022-025 Piano  
008 Saxophone 026 Harp  
009 Bassoon

MUS 405, 406, 407. ELECTRONIC MUSIC—DIGITAL SYNTHESIS  
PR: MUS 205 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.

MUS 408. COMPOSITION  
PR: Necessary competency at MUS 308 level determined by faculty jury examination. Required of music majors with an area emphasis of composition; private instruction in original composition; may be repeated for credit four quarters.

MUS 410, 411. ORCHESTRATION  
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. (Formerly MUS 510, MUS 511.)

MUS 412. MUSIC STUDIO PEDAGOGY  
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. (Formerly MUS 512.)

Sec. 001 Strings  
002 Winds & Percussion  
003 Voice  
004 Piano  
005 Class Piano

MUS 421. SIXTEENTH CENTURY PRACTICE  
PR: MUS 303. 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 ofaural and visual analysis.

MUS 426. CHORAL CONDUCTING  
PR: MUS 326 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.

MUS 427. INSTRUMENTAL CONDUCTING  
PR: MUS 326 & CI. A study of those techniques of conducting unique to instrumental music ensembles: Baton technique, score reading, terminology, rehearsal management.

MUS 431. EIGHTEENTH CENTURY PRACTICE  
PR: MUS 303. 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 ofaural and visual analysis.

MUS 441. TWENTIETH CENTURY PRACTICE  
PR: MUS 303. A study of 20th century theoretical concepts; development of skills in perceiving and writing music in contemporary styles through the use ofaural and visual analysis.

MUS 453. MUSIC SENIOR SEMINAR  
PR: CI. To aid majors to understand, appraise and perfect their own art through critical and aesthetic judgments of their colleagues. (S/U only)

MUS 454. APPLIED MUSIC  
PR: Necessary competency at MUS 404 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. Must be repeated for credit for a minimum of 9 hours for majors. (Formerly MUS 504.)

MUS 455, 456, 457. ELECTRONIC MUSIC—REAL-TIME PERFORMANCE  
PR: MUS 307 and 407 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. (Formerly MUS 505, 506, 507.)

MUS 458. COMPOSITION  
PR: Necessary competency at MUS 408 level determined by faculty jury examination. Required of music majors with an area emphasis of Composition; private instruction in original composition. Must be repeated for credit for a minimum of 9 hours for majors. (Formerly MUS 508.)

MUS 459. SEMINAR IN NEW MUSICAL SYSTEMS  
PR: CI. Experimental sound sources and ensemble groupings; creation of new instruments; unfamiliar sonic materials and unique social contexts for music. May be repeated for credit.  
(Formerly MUS 509.)

MUS 481. DIRECTED STUDY  
PR: CC. Independent studies in the various areas of music; credit of study and credits must be assigned prior to registration; may be repeated.

MUS 483. SELECTED TOPICS IN MUSIC  
PR: CI and CC. The content of the course will be governed by student demand and instructor interest. May be repeated for credit for different topics only.

MUS 485. 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.

FOR SENIORS AND GRADUATE STUDENTS  
MUS 561. MASTER CLASSES  
PR: CI. Study and performance of selected literature with special emphasis on style, form and techniques; especially designed for teachers, piano majors, and talented secondary school students.

Sec. 001 Piano  
002 Voice

MUS 562. MUSIC WORKSHOPS  
PR: CI. Intensive study in the specialized areas indicated below; open to teachers, University students, and secondary students; credit available to qualified students.

Sec. 001 Band  
002 Chamber Music  
003 Chorus

MUS 581. 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.

FOR GRADUATE STUDENTS ONLY  
MUS 601, 602, 603. CRITICAL ANALYSIS OF MUSIC REPERTORY  
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.
MUS 604. APPLIED MUSIC (2-4)
PR: Necessary competency determined by faculty jury audition. Required of all applied music majors. Private and class instruction.
Sec. 012 Strings secondary Sec. 042 Percussion secondary
014 Strings 044 Percussion
022 Woodwinds secondary 052 Voice secondary
024 Woodwinds 054 Voice
032 Brass secondary 062 Piano secondary
034 Brass 064 Piano

MUS 605, 606, 607. 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.

MUS 608. SEMINAR IN COMPOSITION (4)
PR: CI. Composition of music for any media; discussion of problems presented by the most current ideas in composition; evaluation of new music in seminar context. May be repeated for credit.

MUS 609, 610. MUSICAL ACOUSTICS (4,4)
PR: CI. Required of music theory majors; study of the nature and transmission of sound, the hearing process, tuning and temperament; includes principles of electronic sound producers and basic concepts of architectural acoustics.

MUS 611, 612, 613. KEYBOARD REPERTORY (3,3,3)
PR: CI. A study of style, history and performance practice in keyboard repertory including masterworks of all periods.

MUS 614, 615, 616. SONG LITERATURE (3,3,3)
PR: CI. Solo song literature from the 17th century through the contemporary with emphasis on German lied, French songs, and contemporary English and American songs; special emphasis on performance.

MUS 617. 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.

MUS 618. SYMPHONIC LITERATURE (5)
PR: CI. A chronological study of the development of orchestral music; analysis and study of major works from a stylistic and biographical perspective.

MUS 619, 620. 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.

MUS 621. TWENTIETH CENTURY MUSIC LITERATURE (5)
PR: CI. A study of the compositional techniques of composers from Debussy to the present; emphasis on counterpoint, harmonic structure, tonality, atonality, polytonality, texture, and serial technique.

MUS 622, 623, 624. CHORAL LITERATURE AND CONDUCTING (6,6,6)
PR: CI. Combination of seminar, classroom and laboratory types of experiences designed to provide depth in stylistic study of choral music literature and performance.

MUS 625. SEMINAR IN CONDUCTING (3)
PR: CI. Intensive study of conducting techniques with emphasis on interpretation of music scores and application in laboratory sessions.
Sec. 001 Choral
002 Instrumental

MUS 626, 627, 628. TEACHING OF MUSIC THEORY (4,4,4)
PR: CI. Comparative study of teaching techniques, procedures, and materials used in teaching the individual student in performance.

MUS 629. STUDIO TEACHING SEMINAR (3)
PR: Graduate standing in performance and CI; emphasis on techniques used in teaching the individual student in performance.

MUS 630. CHAMBER MUSIC LITERATURE (5)
PR: CI. A survey and stylistic analysis of chamber music repertory from 1750 through the present day; emphasis on aural recognition of representative works.

MUS 647. MAJOR ENSEMBLE PERFORMANCE (1)
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, percussion instruments; may be repeated for credit.
Sec. 001 University Orchestra 007 University Wind Ensemble
002 University Singers 006 Wind Ensemble
003 Opera Workshop 007 University Band
004 Choral Union
005 University Community Chorus

MUS 675. CHAMBER ENSEMBLE PERFORMANCE (1)
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.

MUS 681. DIRECTED STUDY (1-9)
PR: CC. Independent graduate studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

MUS 691. GRADUATE SEMINAR (2)
PR: CC. May be repeated to a maximum of six credits.

MUS 698. GRADUATE RECITAL (3)
PR: CC.

MUS 699. GRADUATE THESES (3)
PR: CC. May be repeated to a maximum of nine credits.

NATURAL SCIENCES (NAS)

UPPER LEVEL COURSES
NAS 409. SCIENCE AND HUMAN LIFE I (4)
The role of science in society. The manner in which science is organized, how it operates, its harmonious and conflicting relationships with other fields of knowledge. (For non-science majors.)

NAS 410. SCIENCE AND HUMAN LIFE II (4)
Continuation of NAS 409. (For non-science majors.)

NURSING (NUR)

Dean: G. R. MacDonald; Associate Professors: F. Carbonell, J. Sasmor; Assistant Professors: M. Boostrom, N. Entekin, J. Fanning, S. Fletcher, L. Lloyd, J. Rackow, A. Slatter; Instructors: P. Adams, A. Grillot, H. Guiss, N. Gunter, B. Mauger, R. Stiehl.

UPPER LEVEL COURSES
NUR 300. COMMUNITY HEALTH RESOURCES (3)
PR: Admission to nursing major or permission of faculty. Study of health resources in the community including voluntary and official health agencies. Consideration will be given to pre-ventive and maintenance services as well as to hospitals and other institutional components of medical care. Also, will consider the roles, responsibilities, and relationships of personnel in the various health occupations with whom nurses work. Instruction will be multidisciplinary with seminars and selected field work experience.

NUR 301. HUMAN ANATOMY (4)
PR: BIO 201-202-203 (or equivalents). A course in basic human anatomy including cellular and organ system relationships as a foundation for normal and abnormal function. (lec.-lab.)
NUR 302. NUTRITION (3)
PR: BIO 201-202-203 and CHM 211-212-213 (or equivalents). The study of normal and therapeutic nutrition for all age groups from infancy through senescence. Considerss the effects of cultural, religious, and socioeconomic factors in defining and modifying food patterns of individuals and groups.

NUR 303. NURSING PROCESS I (4)
PR: Admission to nursing major. 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. Lec.-discussion sessions and related extra-class activities.

NUR 304. HUMAN PHYSIOLOGY (5)
PR: BIO 201, 202, 203 and CHM 211, 212, 213 (or equivalents). 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.

NUR 305. NURSING PROCESS II (3)
PR: NUR 303. 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.

NUR 306. SEMINAR IN NURSING I (2)
PR: Preceding courses required for the nursing major or permission of faculty. 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.)

NUR 307. NURSING CORE I (5)
PR: Preceding courses required for the nursing major or permission of faculty. 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, pharmacology, and epidemiology.

NUR 308. NURSING INTERVENTION I (5)
PR: Preceding courses required for the nursing major or permission of faculty. 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.

NUR 309. SEMINAR IN NURSING II (2)
PR: Preceding courses required for the nursing major or permission of faculty. Description same as NUR 306 Seminar in Nursing I. (S/U only.)

NUR 310. NURSING PROCESS LABORATORY (3)
PR or concurrent: NUR 305. Junior standing in nursing or permission of faculty. 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.)

NUR 400. NURSING CORE II (5)
PR: Preceding courses for the nursing major or permission of faculty. Continuing 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.

NUR 401. NURSING INTERVENTION II (5)
PR: Preceding courses for the nursing major or permission of faculty. Application of theory in a clinical setting with clients of all ages who represent various levels of wellness and illness.

NUR 402. SEMINAR IN NURSING III (2)
PR: Preceding courses required for the nursing major or permission of faculty. Description same as NUR 306 Seminar in Nursing I. (S/U only.)

NUR 403. NURSING INQUIRY I (3)
PR: Nursing majors only. 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.

NUR 404. NURSING CORE III (5)
PR: Senior standing in nursing or permission of faculty. Students continue development of the nursing process with emphasis on synthesis of the four phases based on theory in pathophysiology, pharmacology and epidemiology. Leadership concepts in the total nursing process introduced.

NUR 405. NURSING INTERVENTION III (5)
PR: Senior standing in nursing or permission of faculty. Application of theoretical knowledges 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.

NUR 406. SEMINAR IN NURSING IV (2)
PR: Preceding courses required for the nursing major or permission of faculty. Description same as NUR 306 Seminar in Nursing I. (S/U only.)

NUR 407. NURSING CORE IV (3)
PR: Senior standing in nursing or permission of faculty. Students continue development of the nursing process with emphasis on management of nursing assistance to clients.

NUR 408. NURSING INTERVENTION IV (7)
PR: Senior standing or permission of faculty. 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.)

NUR 409. SEMINAR IN NURSING V (2)
PR: Preceding courses required for the nursing major or permission of faculty. Description same as NUR 306 Seminar in Nursing I. (S/U only.)

NUR 412. INDEPENDENT STUDY (2-5)
PR: Open to major and non-majors with faculty permission. Individual or group investigation of special problems relevant to the health of individuals or groups. Direct service to individuals or groups may be involved. Project requirements (e.g., oral and written reports, conferences, etc.) will be determined on an individual basis by faculty preceptors. May be repeated up to a total of 5 quarter credit hours.

NUR 483. SELECTED TOPICS IN NURSING (2-4)
PR: Junior or senior standing or permission of faculty. Content will depend upon student demand and faculty interest and may focus on any area relevant to nursing practice. May involve class, seminar and/or clinical laboratory and may be repeated for different topics. (S/U only.)
OFF-CAMPUS TERM (OCT)

Director: D. K. Lupton.

UPPER LEVEL 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.

OCT 401. COMMUNITY INTERACTION (3-5)
A field course for students in the OCT Program utilizing the community as a learning laboratory to develop sensitivity to the problems of our society.

OCT 410. OFFICE CAMPUS TERM SOCIAL ACTION PROJECT (1-2)

PHILOSOPHY (PHI)

Chairperson: James A. Gould; Professor: J. A. Gould; Associate Professor: W. H. Truitt; Assistant Professors: J. A. Bell, B. Silver, T. R. Taylor, R. Weatherford.

LOWER LEVEL COURSES
PHI 111. GREAT PHILOSOPHERS OF THE WESTERN WORLD (2)
Lectures and discussions of the great philosophers since Plato, focusing on particular problems.

PHI 112. PHILOSOPHIC CONTROVERSIES (2)
A discussion of central controversies in philosophy such as the nature of love, violence, freedom, truth, morality, etc.

PHI 113. PRACTICAL LOGIC (2)
Elementary theory and application of logical fallacies, deductive and inductive logic. Not for majors.

UPPER LEVEL COURSES
PHI 301. BASIC PHILOSOPHY I: GOD AND REALITY (4)
An introduction to the major philosophical problems in religion, metaphysics, and the philosophy of mind.

PHI 303. LOGIC (5)
Language analysis and classical and modern formal logic, including the logic of classes and propositions, and discussion of philosophical issues.

PHI 304. SCIENTIFIC METHOD (4)
Probability, inductive inference, the hypothetico-deductive method, experimentation, and selected topics in the philosophy of science.

PHI 311. BASIC PHILOSOPHY II: VALUE AND SOCIETY (4)
An introduction to the major philosophical problems in ethics, aesthetics, and social political philosophy.

PHI 317. BASIC PHILOSOPHY III: KNOWLEDGE AND SCIENCE (4)
An introduction to the major philosophical problems in methodology, epistemology, and the philosophy of science.

PHI 321. ETHICS (4)
An examination of the writing of the philosophers: Plato, Aristotle, Kant, Sartre, etc., about moral problems and principles.

PHI 333. ANCIENT AND MEDIEVAL PHILOSOPHY (4)
A survey of philosophy from Thales through the medieval writers.

PHI 334. RENAISSANCE AND MODERN PHILOSOPHY (4)
A survey of philosophy from the Renaissance through Kant.

PHI 335. RECENT PHILOSOPHY (4)
A survey of philosophy from Kant through nineteenth century philosophy.

PHI 341. PHILOSOPHY OF RELIGION (4)
Analysis of religious experience and activity and examination of principal religious ideas in light of modern philosophy. (Formerly PHI 411.)

PHI 351. EXISTENTIALISM (4)
A study of the religious and atheistic existentialists and the bearing of their views on religion, ethics, metaphysics, and theory of knowledge. (Formerly PHI 407.)

PHI 377. SOCIAL PHILOSOPHY (4)
An analysis of rival theories of social order and their philosophical foundations.

PHI 381. DIRECTED STUDY (1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 383. SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 405. CONTEMPORARY PHILOSOPHY (4)
PR: 8 hours or CI. Selected schools of twentieth century thought such as idealism, positivism, pragmatism, realism, and existentialism.

PHI 406. ANALYTICAL PHILOSOPHY (4)
PR: 8 hours, PHI 303. A study of the method devoted to clarifying philosophical problems through analysis of the language in which these problems are stated.

PHI 408. PHILOSOPHY OF MARXISM (4)

PHI 409. CLASSICAL CHINESE PHILOSOPHY (4)
PR: PHI 301 or 311 or 317 or CI. Examination of the major classical Chinese philosophers from the sixth century through the third century B.C.

PHI 410. CONTEMPORARY CHINESE PHILOSOPHY (4)
PR: PHI 301 or 311 or 317 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 413. AMERICAN PHILOSOPHY (4)
Major traditions in American thought—Puritanism, the Enlightenment, Transcendentalism, Idealism, Pragmatism, and Analytic Philosophy—in relation to American culture.

PHI 415. PLATO (4)
PR: 8 hours of Philosophy or CI. The examination of Plato will include the dialogues Protagoras, Gorgias, Memo, Republic, etc.

PHI 416. ARISTOTLE (4)
PR: 8 hours of Philosophy or CI. Study of Aristotle's philosophy.

PHI 422. 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 425. KANT (4)
PR: 8 hours of Philosophy or CI. Lecture and discussions of Kant's philosophy, especially The Critique of Pure Reason.

PHI 453. THEORY OF KNOWLEDGE (4)
PR: 8 hours of Philosophy, PHI 317, or CI. An examination of human knowledge, its scope and limits, and an evaluation of evidence, criteria of truth, the nature of belief, conditions
for meaningfulness, theories of perception, and a study of memory and sense perception in the four major fields of nature, history, personal experience, and the a priori.

PHI 461. ANCIENT AND MEDIEVAL POLITICAL PHILOSOPHY
A survey of political philosophy from 6 B.C. until 1600 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 463. MODERN POLITICAL PHILOSOPHY
A survey of political philosophy from 1600 A.D. until 1900 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 465. CONTEMPORARY POLITICAL PHILOSOPHY
A survey of political philosophy in the twentieth century, including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 481. DIRECTED STUDY
(1-5)
PR: Individual study directed by a faculty member. Approval slip from instructor required.

PHI 483. SELECTED TOPICS
(1-5)
PR: CI. Selected topics according to the needs of the senior students. Approval slip from instructor required.

FOR SENIORS AND GRADUATE STUDENTS

PHI 507. PHILOSOPHY OF NATURAL SCIENCE
PR: 8 hours 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 508. PHILOSOPHY OF THE SOCIAL SCIENCES
PR: 8 hours or CI. Philosophic issues arising in the social sciences: value assumptions, laws and theories, models, etc.

PHI 509. SYMBOLIC LOGIC
PR: PHI 303 or CI. Mathematical treatment of formal logic, including methods of proof, quantification, the logic of relations, and introduction to properties of deductive systems.

PHI 511. PHILOSOPHY OF LAW
PR: 8 hours or CI. The nature and function of law, relations between law, morality, and metaphysics, logic of legal reasoning, analysis of fundamental concepts and institutions.

PHI 521. CONTEMPORARY CONTROVERSYS IN PHILOSOPHY OF RELIGION
PR: A survey of contemporary philosophical problems in religion such as demythologizing, falsification, and the meaning and justification of key concepts, e.g., God, immortality, faith, etc.

PHI 531. PHILOSOPHY OF LANGUAGE
PR: 8 hours of Philosophy, major in linguistics, or CI. An examination of semantical, syntactical, and functional theories of language with special attention given to the problems of meaning, linguistic reference, syntactical form, and the relations between scientific languages and ordinary linguistic usage.

PHI 543. PHILOSOPHY OF HISTORY
PR: 8 hours of philosophy, major in history, or CI. A systematic study of historical theories and of the methods of historical explanation. An examination of classical theories from Vico through Herder, Hegel, Marx down to Spengler and Toynbee, etc.

PHI 551. PHENOMENOLOGY AND EXISTENTIALISM
PR: 8 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.

PHI 571. SEMINAR IN EPISTEMOLOGY I
PR: Major in philosophy or psychology and CI. This course may be taken more than once for credit with CI and departmental approval.

PHI 572. SEMINAR IN EPISTEMOLOGY II
PR: Major in philosophy or social science and CI. This course may be taken more than once for credit with CI and departmental approval.

PHI 573. SEMINAR IN METAPHYSICS I
PR: Major in philosophy or CI. Cosmology. This course may be taken more than once for credit with CI and departmental approval.

PHI 574. SEMINAR IN METAPHYSICS II
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 575. SEMINAR IN CONTEMPORARY ETHICS
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 581. DIRECTED STUDY
(1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 583. SELECTED TOPICS
(1-5)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 585. RESEARCH
(1-5)
PR: CI. Individual research supervised by a faculty member. Approval slip from instructor required.

PHI 591. SEMINAR IN THE HISTORY OF PHILOSOPHY
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.

FOR GRADUATE STUDENTS ONLY

PHI 607. STUDIES IN THE PHILOSOPHY OF SCIENCE
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 609. STUDIES IN LOGIC
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 611. STUDIES IN THE PHILOSOPHY OF LAW
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.

PHI 615. STUDIES IN MAJOR PHILOSOPHICAL SYSTEMS
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 621. STUDIES IN PHILOSOPHY OF RELIGION
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 622. STUDIES IN AESTHETICS
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 631. STUDIES IN THE THEORY OF MEANING
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 643. STUDIES IN PHILOSOPHY OF HISTORY
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.

PHI 677. 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 679. 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.

PHI 680. 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.

PHI 681. DIRECTED STUDY  \( (1-5) \)
PR: Graduate standing and CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 683. SELECTED TOPICS  \( (1-5) \)
PR: Graduate standing and CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 691. GRADUATE SEMINAR  \( (4) \)
PR: Graduate standing. A seminar in the history of philosophy. The instructor will determine the subject matter.

PHI 693. THESIS  \( (5) \)
PR: Graduate standing. Supervision of the writing of the M.A. thesis.

### PHYSICAL EDUCATION-ELECTIVE (PEB)

**Director:** R. T. Bowers; **Professors:** R. T. Bowers, G. W. Hertz; **Associate Professors:** R. J. Grindey, R. E. Heeschen, A. J. Jonaitis, S. W. Prather, Jr., J. E. Young; **Assistant Professors:** D. L. Holcomb, H. A. Honker, P. G. Ortewin, S. C. Taylor, I. Trice; **Lecturer:** M. J. Cheatham.

#### LOWER LEVEL COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PEB 132.</td>
<td>SWIMMING I</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 151.</td>
<td>ARCHERY</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 153.</td>
<td>BADMINTON</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 161.</td>
<td>FOLK &amp; SQUARE DANCE</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 171.</td>
<td>FOIL FENCING</td>
<td>(2)</td>
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<tr>
<td>PEB 173.</td>
<td>GOLF</td>
<td>(2)</td>
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<tr>
<td>PEB 175.</td>
<td>GYMNASTICS</td>
<td>(2)</td>
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<tr>
<td>PEB 179.</td>
<td>TENNIS</td>
<td>(2)</td>
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<tr>
<td>PEB 200.</td>
<td>SPECIAL CONDITIONING</td>
<td>(2)</td>
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<tr>
<td>PEB 210.</td>
<td>BASKETBALL-VOLLEYBALL</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 220.</td>
<td>CANOEING</td>
<td>(2)</td>
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**PR:** PEB 132 or equivalent. Development and refinement of the skills necessary for enjoying canoeing. Skills, safety techniques and trips. (S/U only.)

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<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>PEB 232.</td>
<td>SWIMMING II</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 250.</td>
<td>HANDBALL-PADDLEBALL</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 254.</td>
<td>WRESTLING</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 270.</td>
<td>AEROBICS</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 276.</td>
<td>WEIGHT CONTROL</td>
<td>(2)</td>
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<tr>
<td>PEB 290.</td>
<td>HUMAN KINESIOLOGY I</td>
<td>(2)</td>
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<tr>
<td>PEB 291.</td>
<td>HUMAN KINESIOLOGY II</td>
<td>(2)</td>
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<tr>
<td>PEB 364.</td>
<td>WATER SAFETY INSTRUCTION</td>
<td>(2)</td>
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**Upper Level Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PEB 293.</td>
<td>SKIN &amp; SCUBA DIVING</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 295.</td>
<td>WEIGHT TRAINING</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 297.</td>
<td>AEROBICS</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 299.</td>
<td>HUMAN KINESIOLOGY II</td>
<td>(2)</td>
</tr>
<tr>
<td>PEB 366.</td>
<td>WATER SAFETY INSTRUCTION</td>
<td>(2)</td>
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**PHYSICAL EDUCATION-ELECTIVE 159**
PHYSICAL SCIENCES (PHS)

Lower Level Courses

PHS 208. MAN THINKS ABOUT HIS PHYSICAL UNIVERSE
Science is viewed as a creative, intellectual activity. Special emphasis is given to observations, their interpretation, and the development of conceptual models. Topics such as man's conception of his place in the physical universe, the natural motions of objects, the Newtonian Revolution, energy, and the nature and behavior of light, are examined. Some laboratory work. Intended for non-scientists and especially recommended for prospective elementary teachers. No credit for science majors. Qtr. I, II, III, IV.

PHS 209. THE ECOLOGICAL-ENVIRONMENTAL IMPACT OF GEO-CHEMICAL PHENOMENA
Designed for non-science majors with the content oriented toward stimulating interest and providing for discovering concepts and principles in the geo-chemical changes in the earth and how these changes are related to the environmental ecology. A syllabus is used instead of a conventional textbook. It will be offered only Qtr. III. No credit for science majors.

PHYSICS (PHY)

Lower Level Courses

PHY 201-202. GENERAL PHYSICS AND LABORATORY
First quarter of 3-quarter sequence of general physics (mechanics, heat, electricity, wave motion, optics, atomic and nuclear physics) and laboratory for science students. Must be taken concurrently. Qtr. I, II, III, IV.

PHY 203-204. GENERAL PHYSICS AND LABORATORY

PHY 205-206. GENERAL PHYSICS AND LABORATORY

PHY 271. ENERGY AND HUMANITY
A non-technical survey of energy forms, sources, present and projected needs, uses and abuses in modern civilization. (For non-majors.) Qtr. I, II, III, IV.

Upper Level Courses

PHY 301-302. GENERAL PHYSICS AND LABORATORY
CR: MTH 302 or MTH 351. First quarter of 3-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. Qtr. I, II, III, IV.

PHY 303-304. GENERAL PHYSICS AND LABORATORY
PR: PHY 301-302; CR: MTH 303 or MTH 352. Second quarter of general physics and laboratory for physics majors and engineering students. Must be taken concurrently. Qtr. I, II, III, IV.

PHY 310. WAVE MOTION AND SOUND
Basic ideas are explored, including the nature of sound, sources of sound, hearing, noise pollution, and unusual uses of sound. Two or three laboratory exercises will be done. No credit for science majors. Qtr. I, III. (Alternating with PHY 212)

PHY 311. GREAT EXPERIMENTS IN SCIENCE
A descriptive investigation and analysis of the methods of operation and the results of the experiments relative to the impact made upon mankind. The course will be offered Quarters I and IV. For non-majors.

PHY 312. AEROSPACE AND MAN
Man's interaction with aerospace is explored. Included are basic principles of flight, general aviation, the space program and its relation to flying and gliding, and basic rocketry. No credit for science majors. Qtr. II, IV. (Alternating with PHY 210)

PHY 313. CONTROVERSIAL ISSUES IN SCIENCE
A study of several great controversies in science of the past and some of the contemporary controversies now confronting man. Qtr. III only. No credit for Chemistry majors.

PHY 305-306. GENERAL PHYSICS AND LABORATORY
PR: PHY 301-302; CR: MTH 303 or MTH 352. Third quarter of general physics for physics majors and engineering students. Must be taken concurrently. Qtr. I, II, III, IV.

PHY 307. MECHANICS I

PHY 309. ELECTRICITY AND MAGNETISM I
PR: MTH 305 or MTH 354. Electromagnetic circuits; resistance, capacitance, inductance, direct- and alternating-current circuits, thermoelectricity and instrumentation. Laboratory. First quarter of sequence PHY 309-409-419. Qtr. II.

PHY 311. PROBLEMS IN GENERAL PHYSICS I
CR: PHY 301. First quarter of three quarter sequence of general physics problems. A course designed to allow those interested students to investigate problems not covered in the general physics course. Qtr. I, II, III, IV.

PHY 312. PROBLEMS IN GENERAL PHYSICS II

PHY 313. PROBLEMS IN GENERAL PHYSICS III
CR: PHY 305. Third Quarter of sequence PHY 311-312-313, Qtr. I, II, III, IV.

PHY 315. MATHEMATICAL ANALYSIS OF PROBLEMS IN MECHANICS AND ELECTRICITY
PR: One year of non-calculus general physics. CR: MTH 305 or MTH 354. Designed for students who have not had the general physics sequence using calculus. Review of mechanics and electricity emphasizing problems which involve the use of calculus. Qtr. I, III.

PHY 323. MODERN PHYSICS

PHY 331. OPTICS
PR: PHY 305 or PHY 315. CR: MTH 304 or MTH 353. Reflection, refraction, dispersion, interference, diffraction, polarization and laboratory. Qtr. II.

PHY 341. INTERMEDIATE LABORATORY
(2)
CR: PHY 205 or 305 or equivalent. Experiments in modern physics, including the area of atomic, nuclear, solid state and wave phenomena. Qtr. I, III.

PHY 371. CONTEMPORARY PHYSICS (5)
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, IV.

PHY 405. STATISTICAL PHYSICS I (3)
PR: MTH 305 or MTH 354 and either PR: 305 or CR: PHY 315. Statistical approach to thermodynamics and kinetic theory and introduction to statistical mechanics. First quarter of the sequence PHY 405-406. Qtr. I.

PHY 406. STATISTICAL PHYSICS II (3)
PR: 405. Continuation of the sequence PHY 405-505. Qtr. II. (Formerly PHY 505.)

PHY 407. MECHANICS II (3)
PR: PHY 307 and MTH 401. Continuation of PHY 307. Motion of a group of particles, coupled oscillators, normal modes, dynamics of rigid bodies, Lagrange's and Hamilton's equations, principle of least action. Qtr. II.

PHY 409. ELECTRICITY AND MAGNETISM II (3)

PHY 415. FUNDAMENTAL ACOUSTICS (4)

PHY 417. MECHANICS III (3)
PR: PHY 407. Continuation of PHY 407. Elastic media, the wave equation, transverse and longitudinal wave motion, the diffusion equation, boundary value problems and Fourier series, Fourier integral, fluid dynamics. Qtr. III. (Formerly PHY 507.)

PHY 419. ELECTRICITY AND MAGNETISM III (3)
PR: PHY 409. Method of images, Laplace's equation, radiation, transmission, reflection and refraction of electromagnetic waves, guided waves. Third quarter of sequence PHY 309, 409, 419. Qtr. I. (Formerly PHY 509.)

PHY 421. SOLID STATE PHYSICS I (4)

PHY 422. ELECTRONICS FOR RESEARCH (4)
PR: General Physics or CR: Direct and alternating current circuits, transmission, rectification, amplification, feedback, pulse circuits, and integrated circuits, laboratory. (No credit for physics or mathematics majors.) Qtr. I, III. (Formerly PHY 522.)

PHY 437. QUANTUM MECHANICS I (3)
PR: PHY 407, MTH 401 or CR: Wave-particle duality, uncertainty principle, Schrodinger's equation, postulates, angular momentum, and central forces. First quarter of sequence PHY 437-537. Qtr. II.

PHY 441. ADVANCED LABORATORY (2)
PR: PHY 341. Experimental work primarily related to nuclear physics. Emphasis on modern physical experimental techniques employing some of the new types of equipment. Qtr. I, III.

PHY 470. ACOUSTICS FOR COMMUNICICOLOGY (4)
PR: non. Non-mathematical study of general wave motion and associated phenomena. Acoustic resonance and response of the ear. Introduction to harmonic analysis of complex waveforms with application to testing with pure tones and various types of waves. Acoustic instrumentation. (No credit for science majors.) Qtr. I, II.

PHY 471. MECHANICS AND HEAT—FINE ARTS (4)
PR: None. Principles of the mechanics and thermal behavior of solids, liquids, and gases, with descriptions of applications to appropriate art forms and techniques. (No credit for physics or mathematics majors.) Qtr. I. (Formerly PHY 571.)

PHY 472. ELECTRICITY AND SOUND—FINE ARTS (4)
PR: None. Principles of electricity, magnetism, electronics, and sound with descriptions of applications to appropriate art forms and techniques. Laboratory. (No credit for science majors.) Qtr. II. (Formerly PHY 572.)

PHY 473. OPTICS—FINE ARTS (4)
PR: None. Principles of optics, with descriptions of applications to appropriate art forms and techniques. Laboratory. (No credit for science majors.) Qtr. III. (Formerly PHY 573.)

PHY 481. UNDERGRADUATE RESEARCH (1-6)
PR: Senior or advanced junior standing and CC. Individual experimental work under supervision of instructor. (S/U only.) Qtr. I, II, III, IV.

PHY 483. SELECTED TOPICS IN PHYSICS (1-6)
PR: Senior or advanced junior standing and CC. Each topic is a course in directed study under the supervision of a faculty member.

PHY 491. PHYSICS SEMINAR (1)
PR: Senior or advanced junior standing or CC. May be repeated once. (S/U only.) Qtr. I, II, III, IV.

FOR SENIORS AND GRADUATE STUDENTS

PHY 501. NUCLEAR PHYSICS (4)
PR: 437 or CR: Systematics of stable nuclides, nuclear forces, nuclear models, reactions, radiation, and nuclear instruments. Qtr. I.

PHY 517. PLASMA PHYSICS I (4)
PR: PHY 419 or CR: Introduction to Boltzmann, magnetohydrodynamic and orbit approaches to plasmas. Longitudinal and electromagnetic waves in plasmas. Collisions and radiation. Instabilities. Qtr. IV.

PHY 521. SOLID STATE PHYSICS II (3)
PR: PHY 421. Optical, electrical and magnetic properties of insulators, superconductivity, imperfections in solids. Second quarter of sequence PSY 421-521. Qtr. II.

PHY 523. ELECTRONICS (4)
PR: PHY 409 and PHY 341. Vacuum and gas-discharge tubes, semiconductors, transistors, electronic circuit analysis and laboratory. Qtr. II.

PHY 537. QUANTUM MECHANICS II (3)
PR: PHY 437 or CR: Matrix mechanics, approximation methods, transformations, scattering and identical particles. Qtr. I.

PHY 541. METHODS OF THEORETICAL PHYSICS (3)
PR: MTH 401 or CR: 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.

PHY 542. METHODS OF THEORETICAL PHYSICS II (3)
PR: MTH 401 or CR: 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.

PHY 543. METHODS OF THEORETICAL PHYSICS III (3)
PR: MTH 401 or CR: 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.

PHY 583. SELECTED TOPICS IN PHYSICS (1-6)
PR: Senior or advanced standing and CC. Each topic is a course in directed study under the supervision of a faculty member.

FOR GRADUATE STUDENTS ONLY

PHY 601. ATOMIC AND MOLECULAR SPECTRA (4)
PR: PHY 437 or CR: Quantitative study of atomic and molecular structure and spectra. Qtr. IV.

PHY 605. STATISTICAL MECHANICS (4)
PR: PHY 406 or CR: Kinetic theory, configuration and phase space. Boltzmann theorem, Liouville theorem, ensemble theory, quantum statistics. Qtr. III.
PHY 607. CLASSICAL MECHANICS I (3)
PR: PHY 541 or CI. Dynamics of particles and systems of particles, Lagrange's equations, central forces, rigid body dynamics. First quarter of sequence PHY 607-608. Qtr. II.

PHY 608. CLASSICAL MECHANICS II (3)
PR: PHY 607 or CI. Hamilton's equations, canonical transformations, Poisson brackets, small oscillations, Hamilton-Jacobi theory, continuous systems. Qtr. III.

PHY 609. CLASSICAL MECHANICS III (3)
PR: PHY 608 or CI. Advanced topics in mechanics of current interest. Offered on demand.

PHY 617. PLASMA PHYSICS (4)
PR: PHY 517, 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.

PHY 621. SOLID STATE PHYSICS III (3)
PR: PHY 521 or CI. Advanced course on Solid State Physics covering material of current interest. Qtr. III.

PHY 631. ELECTROMAGNETIC THEORY I (3)

PHY 632. ELECTROMAGNETIC THEORY II (3)
PR: PHY 631 or CI. Electromagnetic waves, wave guides and resonant cavities, diffraction, relativistic-particle kinematics and dynamics, plasmas and magnetohydrodynamics. Qtr. II.

PHY 633. ELECTROMAGNETIC THEORY III (3)
PR: PHY 632 or CI. Scattering, radiation, multipole fields, radiation damping, and self-fields. Qtr. III.

PHY 637. QUANTUM MECHANICS III (3)
PR: PHY 537 or CI. Dirac equation, quantized fields, collision theory, symmetry and invariance. Qtr. I.

PHY 641. EXPERIMENTAL PHYSICS (2)
PR: Graduate standing. Laboratory techniques frequently required in experimental research. Includes manipulation of glass, production and measurement of vacua, production and measurement of thin films, and use of various machine tools. Qtr. I.

PHY 651. PHYSICAL APPLICATIONS OF GROUP THEORY (4)
PR: PHY 542 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.)

PHY 657. THEORY OF RELATIVITY (4)
PR: PHY 541 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.)

PHY 681. GRADUATE RESEARCH (1-15)
PR: CC. (S/U only.) Qtr. I, II, III, IV.

PHY 683. SELECTED TOPICS IN PHYSICS (1-15)
PR: CC. Each topic is a course in directed study under the supervision of a faculty member.

PHY 689. DIRECTED TEACHING (1-5)
Not applicable toward thesis degree requirements. Supervised teaching for graduate teaching assistants in elementary and/or laboratory courses. A formalized, structured activity wherein a faculty member, by discussion and assignments, considers the principles, rationale, and modus operandi of elementary college courses. Designed to train teaching assistants and to provide help and training to those graduate students who plan to follow a college teaching profession. (S/U only.) Qtr. I, II, III, IV.

PHY 691. GRADUATE SEMINAR (1-3)
PR: PHY 641. (S/U only.) Qtr. I, II, III, IV.

PHY 699. MASTER'S THESIS (1-9)

POLITICAL SCIENCE (POL)


LOWER LEVEL COURSES

POL 199. INTRODUCTION TO POLITICAL SCIENCE (4)
A survey of the basic concepts in government and politics, theories and methods of political science and the American political system as well as materials.

POL 201. AMERICAN NATIONAL GOVERNMENT (4)
Basic principles and procedures of the American governmental system with emphasis on current issues and trends.

POL 203. STATE AND LOCAL GOVERNMENT (4)
Analysis of the structure and function of state and local governments, of the social and political influences that shape them, and of the dynamics of their administrative processes.

UPPER LEVEL COURSES

POL 311. COMPARATIVE POLITICS (4)
Analysis of political systems using the concepts and methods of comparative politics. Studies of selected countries will be included.

POL 331. INTERNATIONAL RELATIONS (4)
Contemporary international affairs, including analysis of politics among nations; control of national foreign policies, sovereignty, nationalism and diplomacy; technology, public opinion and war in international relations.

POL 333. INTERNATIONAL ORGANIZATION (4)
The problems of achieving peace through existing international structures, both within and outside the United Nations. The background, achievement and organizational problems of these agencies.

POL 338. CONTEMPORARY AMERICAN FOREIGN POLICY (4)
Analysis of the development and scope of United States foreign policy focusing upon our aims, decision-making, application of policies, and alternative for specified problem areas in foreign affairs.

POL 341. POLITICAL PARTIES (4)
PR: POL 201 or CI. The development, structure, operation and significance of political parties in the American system of government.

POL 343. EMPIRICAL POLITICAL ANALYSIS (4)
An introduction to the conduct of empirical political inquiry and to research methods. Techniques of data generation, collection, and analysis will be emphasized. Laboratory exercises required.

POL 345. PRIVATE GROUPS AND PUBLIC POLICY (4)
Role of non-party groups in the American society and their impact on public policy; growth of interest groups, internal politics, and formation of public policy.

POL 347. CONTEMPORARY SOUTHERN POLITICS (4)
Comparative study of selected political patterns and trends in the eleven southern states since 1950. Analysis of such topics as massive resistance, the civil rights movement, black political participation. Fractional division within the Democratic Party and the growth of presidential and gubernatorial Republicanism.

POL 351. INTRODUCTION TO PUBLIC ADMINISTRATION (4)
PR: Upper level standing. An examination of the administrative principles and processes by which public policies are implemented in a democratic society.

POL 405. POLITICS OF THE SOVIET UNION (4)
POL 410. POLITICAL SYSTEMS OF SOUTHEAST ASIA (4)
PR: Upper level standing. Comparative analysis of political systems and practices in Southeast Asian countries with emphasis on the nature of nationalism, political development and revolutionary processes in the region.

POL 415. MILITARY POWER IN INTERNATIONAL POLITICS (4)
PR: POL 331. Upper Level Standing or CI. A study of the role of military power affecting war and peace in modern international politics. Among the issues covered are, limited war, nuclear deterrence, balance of power, conventional war, guerrilla warfare, disarmament and nuclear proliferation.

POL 421. GOVERNMENT AND POLITICS OF THE FAR EAST (4)
Development of political ideas and institutions of Japan and China with emphasis on 20th century issues.

POL 425. POLITICS OF LATIN AMERICA (4)
Comparative analysis of political systems of Latin America, with emphasis on modernization, the role of the military, revolutionary processes, and inter-American relations.

POL 428. POLITICS OF AFRICA (4)
Development and growth of emerging African political systems and their relations with each other and with states outside of Africa.

POL 431-432. CONSTITUTIONAL LAW (4,4)

POL 434. JUDICIAL POLITICS (4)
PR: POL 431 or POL 432. Consideration of selected theories of judicial decision-making. Examination and application of social science methodology to the study of court systems.

POL 436. INTERNATIONAL LAW AND DIPLOMACY (4)
Contemporary international norms, agreements and negotiations. Their influence on, and response to, a changing international system.

POL 438. COMPARATIVE FOREIGN POLICY (4)
Comparative study of foreign policy behavior of nations. Analysis of formulation and objectives of foreign policies.

POL 441. THE AMERICAN PRESIDENCY (4)
The presidency as an institution of American democracy; constitutional status and powers, administrative responsibilities, legislative and political leadership, decision-making processes.

POL 443. POLITICAL BEHAVIOR (4)
PR: Upper level standing or CI. Economic, psychological and social dimensions of political behavior; political participation, leadership and elites; political attitudes; voting behavior and decision-making processes.

POL 453. URBAN GOVERNMENT (4)
An introduction to the theory of urbanism, formal and informal structures that govern urban areas, new patterns and policy emphasis of urban government.

POL 454. URBAN POLITICS (4)
PR: Upper level standing. POL 203 or equivalent. An examination of the political processes and systems in urban and suburban communities in America.

POL 455. THE AMERICAN LEGISLATIVE PROCESS (4)
Intensive analysis of the nature of the legislative process in the United States; organization, procedure, leadership, relation with other governmental agencies; group tactics, decision-making process in the formation of policy.

POL 457. PROBLEMS OF PUBLIC FISCAL ADMINISTRATION (4)
PR: POL 351 or CI. Analysis of problems in the growth and development of public budgets with emphasis on principal techniques and theories of fiscal administration.

POL 461. CLASSICAL POLITICAL IDEAS (4)
PR: POL 199 or CI. Basic political ideas from the works of Plato, Aristotle, Cicero, St. Augustine, St. Thomas Aquinas and other leading Greek, Roman, and Medieval-Christian political philosophers.

POL 462. CLASSICAL POLITICAL IDEAS (4)
PR: POL 199 or CI. Basic political ideas from the works of Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham and other leading modern political philosophers.

POL 463. AMERICAN POLITICAL THOUGHT (4)
PR: Upper level standing. American political thought from the Colonial period to the present with emphasis on recent contributions.

POL 464. MODERN POLITICAL THOUGHT (4)
PR: Upper level standing. Basic political ideas from the works of 19th and 20th century political philosophers.

POL 481. INDIVIDUAL RESEARCH (1-8)
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.

POL 491. SENIOR SEMINAR (4)
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.

FOR SENIORS AND GRADUATE STUDENTS

POL 520. ADMINISTRATION OF URBAN AFFAIRS (4)
An analysis of the role of the administrator at the municipal level stressing the division of functions, policy formation, alternative governmental structures and their effect on administrative processes.

POL 525. PROBLEMS OF PUBLIC PERSONNEL ADMINISTRATION (4)
An analysis of recruitment, testing, training, employee and human relations in the public service.

POL 527. COMPARATIVE PUBLIC ADMINISTRATION (4)
Comparison and certain aspects of public administrative systems of various governments, emphasizing such writers as Sifton, Hadari, Appleby, Hu, Simon and Rigg.

POL 530. LEGAL AND REGULATORY PROCESSES (4)
Systematic study of the political-judicial factors in the regulatory process of administrative agencies.

POL 550. METHODOLOGICAL AND CONCEPTUAL PROBLEMS IN COMPARATIVE AND INTERNATIONAL POLITICS (4)
Examination of problems and concepts in the study of comparative and international politics, emphasizing theoretical and empirical relations and relative advantages of different levels and units of analysis. May be repeated for credit.

POL 561. POLITICS OF THE DEVELOPING AREAS (4)
An analysis of the ideologies, governmental structures, and political processes of selected nations of the non-Western world.

POL 571. FIELD WORK (4)
PR: 3.0 average in Political Science and CI. Application of research models now employed in governmental agencies; including developing a structured research proposal. Designed to give the student practical experience in the administrative and political processes.

FOR GRADUATE STUDENTS ONLY

POL 600. SCOPE AND METHODS OF POLITICAL SCIENCE (4)
Advanced study of the scope and methodologies of political science, including their applications to different research areas.

POL 620. URBAN POLICY ANALYSIS (4)
Systematic examination of the organizational and administrative characteristics of planning, program development and reporting activities conducted at local levels by various state, regional and federal agencies.

POL 623. URBAN FINANCIAL ADMINISTRATION (4)
Examination of organizational structure and administrative
processes of urban fiscal agencies, sources of revenue, expenditures and indebtedness, and current problems in budgeting.

POL 625. PROBLEMS IN URBAN POLITICS (4)
Analysis in depth of pressure group behavior and its role in municipal policy formulation, including the study of community power approaches advanced by Rossi, Sofen, Kammarer, Martin and others.

POL 627. ADMINISTRATIVE BEHAVIOR AND PUBLIC POLICY FORMATION (4)
Analysis of the formal, informal and societal characteristics of public bureaucracies and their impact on public policy.

POL 640. POLITICAL SOCIALIZATION (4)
Seminar in selected phases of the political socialization process.

POL 643. CONTEMPORARY POLITICAL IDEAS AND BEHAVIOR (4)
Study of certain phases of political philosophy and theories of modern political analysis.

POL 645. SEMINAR IN STATE POLITICS (4)
Analysis of selected topics in American state politics. May be repeated for credit as topics vary.

POL 650. SEMINAR IN POLITICAL REVOLUTION AND CHANGE (4)
Analysis of selected contemporary problems relating to political revolution and change.

PSYCHOLOGY (PSY)


LOWER LEVEL COURSES

PSY 201. INTRODUCTION TO PSYCHOLOGY (5)
A survey of major topics in psychology (learning, perception, thinking, intelligence, etc.), and an introduction to methods used in psychological investigation. Lecture and discussion, taken concurrently.

UPPER LEVEL COURSES

PSY 311-312. RESEARCH METHODS IN PSYCHOLOGY (4,1)
PR: PSY 201 and SSI 301. Scientific research methods and their applications for psychology. Topics include experimental planning, control procedures, and interpretive principles. Lecture plus two-hour lab. Must be taken concurrently.

PSY 313. APPLIED PSYCHOLOGY (4)
The application of psychological principles and the functions of psychologists in education, government, industry, and clinical practice. Not for major credit.

PSY 335. PSYCHOLOGY OF ADJUSTMENT (4)
Genetic, organic and learned factors involved in the processes of personal adjustment: applications for mental health principles to everyday living. Not for major credit.

PSY 341. CHILD PSYCHOLOGY (4)
Developmental and psychosocial aspects of childhood, including hereditary, maturational, psychological, and social determinants of child behavior. Not for major credit.

PSY 371. CONTEMPORARY PROBLEMS IN PSYCHOLOGY (4)
Selected topics from all areas of psychology designed to give the undergraduate nonmajor an opportunity to become acquainted with psychological concepts relevant to contemporary problems in our society. Not for major credit. (Formerly PSY 401.)

PSY 402. PSYCHOLOGY OF LEARNING (4)
PR: PSY 201, SSI 301, PSY 311-312. Survey of methods, empirical findings and theoretical interpretations in conditioning and instrumental learning. Lec.-lab.

PSY 403. DEVELOPMENTAL PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. Survey of methods, empirical findings and theoretical interpretations in the study of human and animal development.

PSY 404. SOCIAL PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. Survey of methods, empirical findings and theoretical interpretations in the study of an individual's behavior as it is affected by others.

PSY 405. NEUROPSYCHOLOGY (4)

PSY 411. EXPERIMENTAL DESIGN AND ANALYSIS (4)
PR: PSY 201, SSI 301, PSY 311-312. Detailed coverage of those research designs and statistical techniques having the greatest utility for research problems in psychology. Emphasis on topics from analysis of variance.

PSY 415. SYSTEMATIC PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. The historical roots of modern psychological theories, investigation of the various schools of psychology such as behaviorism, Gestalt psychology, psychoanalysis, and phenomenological psychology.

PSY 421. MOTIVATION (4)
PR: PSY 201, SSI 301, PSY 311-312, 402. An examination of human and animal motivations from both physiological and psychological viewpoints.

PSY 425. COMPARATIVE PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312, 402, 405. The study of the evolution of behavior, similarities and differences in capacities for environmental adjustment and for behavioral organization among the important types of living beings from plants and unicellular organisms to the primates including man.

PSY 432. INDUSTRIAL PSYCHOLOGY (4)
PR: PSY 201, SSI 301, PSY 311-312. 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.

PSY 436. PSYCHOLOGICAL ASSESSMENT (4)
PR: PSY 201, SSI 301, PSY 311-312. A consideration of the
INSTRUMENTS FOR INTELLIGENCE ACHIEVEMENT, AND PERSONALITY ASSESSMENT INCLUDING THEIR APPLICATIONS, DEVELOPMENT, AND POTENTIAL ABUSES. STUDENTS MAY NOT RECEIVE CREDIT FOR BOTH PSY 436 AND EDF 303, INTRODUCTION TO MEASUREMENT AND EVALUATION.

PSY 441. HUMAN MEMORY
PR: PSY 201, SSI 301, PSY 311-312. SURVEY OF METHODS, EMPirical FINDINGS, AND THEORETICAL INTERPRETATIONS OF HUMAN LEARNING AND RetENTION, INCLUDING CONCEPT LEARNING, INFORMATION PROCESSING, AND VERBAL LEARNING. LEC.-LAB.

PSY 445. PERCEPTION
PR: PSY 201, SSI 301, PSY 311-312. HOW MAN PERCEIVES HIS ENVIRONMENT. TOPICS INCLUDE SENSORY Bases OF PERCEPTION, PHYSICAL CORRELATES OF PERCEPTUAL PHENOMENA, AND THE EFFECTS OF INDIVIDUAL AND SOCIAL FACTORS ON PERCEPTION. PRIMARY EMPHASIS ON VISION AND AUDITION. LEC.-LAB.

PSY 450. PSYCHOLOGY OF WOMEN
PR: WSP 201. 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 AS WSP 401.)

PSY 451. 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 as WSP 405.)

PSY 452. PERSONALITY
PR: PSY 201, SSI 301, PSY 311-312. METHODS AND FINDINGS OF PERSONALITY THEORIES AND AN EVALUATION OF CONSTITUTIONAL, BIOSOCIAL, AND PSYCHOLOGICAL DETERMINANTS OF PERSONALITY.

PSY 455. PSYCHOPATHOLOGY
PR: PSY 201, SSI 301, PSY 311-312. DESCRIPTIONS, THEORETICAL EXPLANATIONS, RESEARCH EVIDENCE AND TREATMENT OF MALADAPTIVE BEHAVIOR.

PSY 481. SELECTED TOPICS: RESEARCH
PR: UPPER DIVISION STANDING AND CI. THE STUDENT PLANS AND CONDUCTS AN INDIVIDUAL RESEARCH PROJECT UNDER THE SUPERVISION OF A PSYCHOLOGY FACULTY MEMBER. MAY BE REPEATED WITH A MAXIMUM OF EIGHT HOURS CREDIT.

PSY 485. SELECTED TOPICS: READING
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 491. SELECTED TOPICS: SEMINAR
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 492. HONORS SEMINAR
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 TWELVE HOURS CREDIT.

PSY 493. HONORS THESIS
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.

FOR GRADUATE STUDENTS ONLY

PSY 609. MOTIVATION AND EMOTION
PR: CI. A DETAILED EXAMINATION OF HUMAN MOTIVATION AND EMOTION FROM BOTH THE PHYSIOLOGICAL AND PSYCHOLOGICAL VIEWPOINTS. M.A. CORE COURSE.

PSY 612. PERSONALITY
PR: ADMISSION TO M.A. PROGRAM IN PSYCHOLOGY OR CI. ANALYSIS OF TRADITIONAL AND CURRENT THEORY AND RESEARCH IN THE AREA OF PERSONALITY. M.A. CORE COURSE.

PSY 613. BEHAVIORAL DISORDERS OF CHILDREN
PR: CI. CAUSATIVE FACTORS IN BEHAVIORAL DISORDERS COMMON TO CHILDREN AND ADOLESCENTS. THOROUGH STUDY OF SELECTED CHILDHOOD MENTAL DISORDERS AND A SURVEY OF AMELIORATIVE TECHNIQUES FOR TREATING CHILDHOOD BEHAVIOR DIFFICULTIES. STUDENTS MAY NOT RECEIVE CREDIT FOR BOTH PSY 613 AND EDS 531, BEHAVIOR DISORDERS IN THE SCHOOLS.

PSY 614. PSYCHOPATHOLOGY
PR: ADMISSION TO M.A. PROGRAM IN PSYCHOLOGY OR CI. EXPLORATION OF CURRENT APPROACHES TO THE UNDERSTANDING OF PSYCHOLOGICAL BEHAVIOR AND IMPLICATIONS FOR THEORIES OF PERSONALITY. A SURVEY OF TREATMENT METHODS IS INCLUDED. M.A. CORE COURSE.

PSY 616. PSYCHOLOGICAL ASSESSMENT
PR: CI. COURSES COVER THEORY, RESEARCH, AND APPLICATIONS OF PSYCHOLOGICAL ASSESSMENT IN AREAS SUCH AS INTERVIEWING, INTELLIGENCE AND COGNITIVE FUNCTIONING, NEUROPSYCHODIAGNOSTICS, AND PERSONALITY TESTING. MAY BE REPEATED FOR CREDIT WITH DIFFERENT SUBJECT MATTER.

PSY 620. SUPERVISED RESEARCH
PR: CI. THE STUDENT WORKS IN CLOSE COLLABORATION WITH A FACULTY MEMBER IN DESIGNING, CONDUCTING, AND INTERPRETING EXPERIMENTS. MAY BE REPEATED FOR CREDIT. (S/U ONLY.)

PSY 621. APPLICATIONS OF LEARNING PRINCIPLES & PROCEDURES
PR: PRIOR COURSE IN LEARNING, OR CI. APPLICATION OF VARIOUS LEARNING PRINCIPLES AND PROCEDURES TO PROBLEMS IN SPECIALIZED SETTINGS. CO-LISTED REHABILITATION COUNSELING. (REH 621.)

PSY 631. RESEARCH METHODS AND MEASUREMENT
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 634. PHYSIOLOGICAL PSYCHOLOGY
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 SUBHUMANS AND HUMANS. M.A. CORE COURSE.

PSY 635. DEVELOPMENTAL PSYCHOLOGY
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.

PSY 636. LEARNING
PR: ADMISSION TO M.A. PROGRAM IN PSYCHOLOGY OR CI. HABITUATION, SENSITIZATION, CLASSICAL AND INSTRUMENTAL CONDITIONING, GENERALIZATION, DISCRIMINATION, TRIAL AND ERROR LEARNING, PROBLEM SOLVING. M.A. CORE COURSE.

PSY 638. PERCEPTION
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.

PSY 639. SOCIAL PSYCHOLOGY
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.

PSY 641. HUMAN MEMORY
PR: ADMISSION TO M.A. PROGRAM IN PSYCHOLOGY OR CI. REVIEW OF METHODS, FINDINGS AND THEORETICAL INTERPRETATIONS ASSOCIATED WITH...
with the study of acquisition and retention of information.
M.A. core course.

**PSY 642. 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.

**PSY 665. 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.

**PSY 670. 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.

**PSY 675. 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.

**PSY 676. 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.

**PSY 682. 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 699. THESIS**
(1-15)
PR: Admission to graduate degree program in psychology and CI. A study in depth of a problem in psychology approved by a thesis committee. May be repeated for credit. (S/U only.)

**PSY 764. PSYCHOTHERAPY AND BEHAVIOR CHANGE**
(5)
PR: Admission to graduate degree program in psychology and CI. Courses on topics such as psychopathology, community psychology, clinical issues, personality, and developmental psychology. May be repeated for credit with different subject matter.

**PSY 775. SEMINAR IN EXPERIMENTAL PSYCHOLOGY**
(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.

**PSY 780. GRADUATE SEMINAR IN SOCIAL-ORGANIZATIONAL PSYCHOLOGY**
(5)
PR: CI. Seminars on topics such as social psychology, scientific communication, and decision making. May be repeated for credit with different subject matter.

**PSY 781. GRADUATE SEMINAR IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY**
(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.

**PSY 790. 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 799. DISSERTATION**
(1-15)
PR: Admission to Ph.D. program in psychology and CI. A study in depth of a problem in psychology approved by a dissertation committee. May be repeated for credit. (S/U only.)

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**REHABILITATION COUNSELING (REH)**

**REH 507. 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 REH 508. (S/U only.)

**REH 508. PRACTICUM I**
(2)
PR: CI. Supervised observation experience and participation in counseling services in various rehabilitation agencies. Must be taken concurrently with REH 507. (S/U only.)

**REH 509. 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.

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**FOR GRADUATE STUDENTS ONLY**

**REH 602. INTERPERSONAL ASPECTS OF REHABILITATION COUNSELING II**
(5)

**REH 603. PSYCHO-SOCIAL DISABILITY IN REHABILITATION COUNSELING**
(5)
PR: REH 502. Personal, social, and vocational consequences of emotional and social disabilities.

**REH 604. 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.
REL 506. VOCATIONAL PLACEMENT AND ADJUSTMENT OF THE DISABLED (5)
A study of occupations, vocational theories, pre-placement counseling, vocational placement techniques, follow-up procedures, and the psycho-social aspects of work as they pertain to rehabilitating disabled and disadvantaged persons.

REL 607. SELECTED TOPICS IN REHABILITATION (2-5)
PR: Cl. Designed to give the student an opportunity to study in depth some concept, procedure, or body of data in the rehabilitation field. May be repeated for a maximum of 10 hours credit.

REL 608. EVALUATION IN THE REHABILITATION PROCESS (5)
PR: REH 502. Examine the evaluation procedure from the point of view of providing reliable and valid information for use in the counseling process. (Formerly REH 506.)

REL 609. SEMINAR IN REHABILITATION COUNSELING (5)
PR: Cl. 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.

REL 610. SEMINAR IN PRINCIPLES AND PRACTICES OF REHABILITATION COUNSELING II (4)

RELIGIOUS STUDIES (REL/ANC)

Religious Studies (REL)

UPPER LEVEL COURSES

REL 300. INTRODUCTION TO RELIGION (4)
An examination of the phenomenon of religion, which will include (1) an examination of why people do religion; (2) an examination of the character of theology, with special attention to certain basic theological concepts such as God, sin, salvation, liberation, reincarnation, immortality, atheism, terrorism; (3) an analysis of the character of religious ritual in its metatechnological, sacramental and experimental form; and (4) an examination of the place and character of moral systems in religion.

REL 310. 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 310 and REL 410 may not both be credited toward the major.

REL 315. 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 315 and 415 may not both be credited toward the major.

REL 316. NEW TESTAMENT GREEK I (4)

REL 317. NEW TESTAMENT GREEK II (4)

REL 325. HISTORY OF JUDAISM (4)
The historical development of Judaism and Jewish concepts from biblical times to the modern era with emphasis on the formative years from the Prophets to the close of the Talmud.

REL 326. MODERN JUDAISM (3)
A study of Jewish life in the West since 1789, emphasizing Jewish beliefs, practices and institutions.

REL 327. HISTORY OF CHRISTIANITY I (4)

The historical development of Christianity, its ideas and institutions, from the first century to the sixteenth century.

REL 328. HISTORY OF CHRISTIANITY II (4)
The historical development of Christianity, its ideas and institutions from the work of John Wycliff to the rise of "religious modernism" in the 19th century.

REL 329. RELIGION IN AMERICA (4)
To examine the movement from state church to pluralism in American religious institutions, the religious results of non-Protestant immigration; the Jewish factor; the effect of home missions and social concern programs upon American life; political entanglements and the concept of church/state separation.

REL 330. BLACK RELIGIOUS EXPERIENCE IN AMERICA (4)
A course designed to stimulate interest in the religious history, experience, and thinking of American Blacks.

REL 331. 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 340. 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 341. BIBLICAL ARCHAEOLOGY (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 350. WORLD RELIGIONS—EASTERN (5)
An introduction to and a comparison to 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 351. WORLD RELIGIONS—WESTERN (5)
An introduction to and a comparison of the ideas, the
literature, the institutions of the major religions of the Western (Near Eastern origin) World—Judaism, Zoroastrianism, Christianity, and Islam. And a general comparison of Western religious ideas with Eastern religious ideas. REL 360. DIALOGUES IN RELIGION (4)
A course designed to place in dialogic encounter various aspects of contemporary religious beliefs and practices for the purpose of enabling students to hear and participate in discussions concerning the claims and procedures of existing religions.

REL 370. CONTEMPORARY RELIGIOUS THOUGHT (4)
An examination of the central ideas of recent theological thinkers; such men as Barth, Brunner, Bultmann, Bonhoeffer, Rahner, Tillich, Cox, Altfzer, Buber, Niebuhr.

REL 383. SELECTED TOPICS (1-5)
PR: CI. Course contents depend on students' needs.

REL 385. DIRECTED READINGS (1-5)
PR: CI. Individual guidance in concentrated reading on a selected topic.

REL 400. COMPARATIVE MYSTICISM (4)
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 401. RELIGIOUS BEHAVIOR AND INSTITUTIONS (4)
PR: CI. Individual guidance in concentrated reading on a selected topic.

REL 402. RELIGION AND DEPTH PSYCHOLOGY (4)
PR: One Psychology course or CI. This course is designed to enhance the student's understanding of human existence by investigating the interrelationships between human dynamics and religion.

REL 403. JESUS' LIFE AND TEACHINGS (4)
PR: CI. 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 410. OLD TESTAMENT STUDIES I (Torah) (4)
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 411. OLD TESTAMENT STUDIES II (Prophets) (4)
PR: REL 410 or REL 315 or CI. An investigation of the Prophetic literature of the Hebrew Scriptures including the emergence of the prophetical 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 412. OLD TESTAMENT STUDIES III (Writings) (4)
PR: REL 410 or REL 315 or CI. 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 413. DEAD SEA SCROLLS (4)

REL 415. NEW TESTAMENT STUDIES (Gospels) (4)

REL 416. NEW TESTAMENT STUDIES II (Pauline Letters) (4)
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 417. NEW TESTAMENT STUDIES III (Later Letters and Revelation) (4)
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 481. UNDERGRADUATE RESEARCH (1-5)
PR: Junior standing and CI. Individual investigations with faculty supervision.

REL 483. SELECTED TOPICS (1-5)
PR: Junior standing and CI. Course contents depend on students' needs.

REL 491. SEMINAR IN RELIGION (4)
A course designed for persons, especially Religious Studies majors, whose prior religious studies have prepared them for a cooperative creative and/or research effort in the area of religion.

FOR SENIORS AND GRADUATE STUDENTS

REL 583. SELECTED TOPICS (1-5)
PR: Senior standing and CI. Course contents depend on students' needs.

Ancient Studies Sequence (ANC)

UNDERgraduate Courses
ANC 321. 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. (Formerly CLS 321.)

ANC 341-342-343. BASIC HEBREW (3,3,3)
Designed to give students a working knowledge of Classical (Biblical) Hebrew and to introduce them to the Biblical literature in the original language. (Formerly CLS 341, 342, 343.)

ANC 352. 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. (Formerly CLS 352.)

ANC 373. HISTORY OF THE 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. (Formerly CLS 373.)

ANC 421. 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.)

ANC 423. 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.)

ANC 427. GREEK CIVILIZATION (4)
Detailed study of the Aegean and Greek civilizations from their beginning in Crete and Mycenae to the Roman period. Greek discoveries, exploration and colonization. (Alternate years.)

ANC 429. 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.)

ANC 441-442-443. ADVANCED HEBREW (3,3,3)
PR: ANC 341-2-3 or equivalent. Study and analysis of selected passages from pre-Exile, Exile, and post-Exile 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. (Formerly CLS 441, 442, 443.)
ANC 483. SELECTED TOPICS (2-5)
Course contents depend on student demand and instructor's interest and may range over the whole field of Ancient languages, literatures, and civilizations. Offerings on a semiregular basis include Tongues of the Bible (2), The Bible as History (4), Basic Sanskrit (3, 3), and Old Church Slavonic (5).

ANC 485. 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. PR: Consent of coordinator prior to registration.

FOR SENIORS AND GRADUATE STUDENTS
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.

ANC 581. INDIVIDUAL RESEARCH (2-5)
Specialized individual work in particular areas of student's interest.

ANC 583. 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.

ANC 585. 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. PR: Consent of coordinator prior to registration.

NOTE: In any of the numbers 483, 485, 581, 583, 585, enrollment is repeatable for different subject matters.

SENIOR SEMINAR (CBS)

CBS 401. SENIOR SEMINAR (3)
Contemporary issues affecting social and personal values. Visiting lecturers, readings and discussions interrelating the behavioral, natural, and social sciences and the humanities. Designed to focus the university education upon contemporary problems. (S/U only.)

SOCIAL SCIENCES (INTERDISCIPLINARY) (SSI)


LOWER LEVEL COURSES
SSI 100. WORLD PERSPECTIVE (4)
Application of the interdisciplinary approach to the study of the international system, major world regions and problems.

SSI 201, 202. BEHAVIORAL SCIENCE (4,4)
Draws on information from behavioral sciences (human biology, psychology, anthropology, sociology, and philosophy) to demonstrate how human behavior develops and means by which personal, social, and ethical problems are dealt with. Students desiring to pursue their interest in behavioral science may also take SSI 383 (formerly CBS 203) in which selected topics are studied in depth. (Formerly CBS 201, 202.)

UPPER LEVEL COURSES
SSI 300. AMERICA'S ROLE IN THE WORLD (4)
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. Upper level standing or CI.

SSI 301. SOCIAL SCIENCE STATISTICS (4)
Topics selected from the following: measures of central tendency and variability probability and the normal curve, correlations, curve fitting, scale and index number theory, polling, interview and survey techniques, content analysis. Students who successfully complete this course may not also receive credit for either ECN 231 Business and Economic Statistics 1 or MTH 345 Introductory Statistics.

SSI 311. COMMUNICATION (4)
Topics selected from the following: the language of structure, general semantics, communication networks, language and social perception, diffusion of information, communication and social gamesmanship, Aesopian language and Nu-Think in politics, normative language of clinical psychology, communication and pseudo events, non-verbal communication.

SSI 315. PUBLIC OPINION AND PRESSURE MECHANISM (4)
The content and formation of public opinion, properties of opinions and attitudes, and the principles and mechanisms of their formation and change.

SSI 321. HUMAN RELATIONS AND PRODUCTIVITY (4)
Topics to be selected from the following: the relation of science, technology, resources, energy, and population change to social, economic, cultural and political change; social implications of research findings from the social, behavioral and management sciences.

SSI 325. PSYCHOLOGY AND THE SOCIAL ORDER (4)
Topics to be selected from the 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 326. INTRODUCTION TO HUMAN SERVICES (4)
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.

SSI 327. SOCIAL POLICY IN THE UNITED STATES (4)
PR: SSI 326 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.

Area Studies
The following five courses (SSI 339, 341, 343, 345 and 347), dealing with one or more countries of a given region, will select and emphasize subject matter from the following topics: its history, its people and their cultures, its social psychology and national characteristics, its resources, its economic and industrial characteristics, its literature, religion and dominant values, its political framework and outlook, its social structure, and its current problems.

Each course may be repeated when countries of concentration vary, but the same country may not be repeated for credit.

SSI 339. EUROPE (4)
SSI 341. LATIN AMERICA (4)
SSI 343. ASIA (4)
SSI 345. AFRICA (4)
SSI 347. THE MIDDLE EAST (4)
SSI 361. COMMUNISM IN THE MODERN WORLD (4)
An interdisciplinary approach to the nature of Communism, its philosophic bases, its anti-religious bias, its economic, social and political theories and practices, the arts and sciences under Communist ideology, its conduct of foreign affairs and associated programs and techniques. Emphasis will be on Soviet and Chinese Communism.

SSI 383. 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. (Formerly CBS 203.)

SSI 395. OVERSEAS STUDY (1-9)
A program of individual or group research in a foreign country. Selection of the student, his preparation for the study, and subsequent evaluation to be supervised by a faculty committee. (Formerly CBS 395.)

SSI 403-404. THE UNIVERSE OF MAN (3,3)
A search for the universals of human life today; the nature of man, the world community, human needs and values, available instruments of science and technology, and the limiting facts and forces. (Formerly CBS 403, 404.)

SSI 411. SOCIAL ISSUES OF OUR TIME (4)
Topics to be selected from the following: automation and cybernation and the social problems they generate; special problems of a technological civilization; the implications of changing social patterns of Western culture and opportunities for social re-construction.

SSI 413. LEISURE IN SOCIETY (4)
Facts and trends of changing leisure-time patterns in the USA and other countries; various conceptualizations of leisure; relationships of non-work time to work attitudes, personality, family, community, sub-cultures, religion, value systems, social class, and the functions of government.

SSI 415. THE CITY AND MAN (4)
Topics to be selected from the following: the city and its ills; proposed new types of community formation; planning and community; the social ecology of the city; conventional versus innovative approaches to the problems of the community.

SSI 421. 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 426. COMMUNITY ORGANIZATION AND DEVELOPMENT (4)
PR: SSI 326 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.

SSI 427. THE LIFE CYCLE (5)
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.

SSI 428. PLANNING AND EVALUATION OF HUMAN SERVICES PROGRAMS (4)
PR: SSI 326 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.

SSI 429. INTERVIEWING (4)
PR: SSI 326 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.

SSI 449, 450. THE EMERGING NATIONS (4,4)
PR: Upper division standing or CI. CI required to take SSI 450 out of sequence. This course examines the processes and problems involved when an underdeveloped country seeks to develop a modern industrial civilization.

SSI 481. DIRECTED RESEARCH (1-4)
PR: CI plus upper division standing. May be repeated. To provide advanced students with interdisciplinary research experience in areas of specific interest.

SSI 485. DIRECTED READINGS (1-4)
PR: CI plus upper division standing. May be repeated. To provide advanced students with intensive reading of interdisciplinary nature in areas of specific interest.

SSI 491. SENIOR SEMINAR (4)
PR: Senior standing and CI. To provide an integrating seminar experience for International Studies' majors.

FOR SENIORS AND GRADUATE STUDENTS

SSI 503. CONTEMPORARY AMERICAN CULTURE (4)
A social analysis of the leading characteristics, ideals, and values of American life. An effort will be made to deal with a variety of contexts in which American cultural themes, standards and practices receive expression.

SSI 505. SOCIAL VALUES AND SOCIAL ORDER (4)
Topics to be selected from the following: the value-patterns of modern societies; social bases for a world order; the aims and functions of social planning; international transformation created by science and technology.

SSI 522. LEISURE THEORY (4)
PR: SSI 413 or CI. The exposition of an interdisciplinary theoretical model by which to relate specific leisure activities or experiences to broad social change; summaries of current and historical research; in the U.S.A. and other nations; term papers by students based on individual interests.

SSI 523. LEISURE PLANNING: COMMUNITY AND STATE (4)
An examination of the social, political and economic forces which relate to the policy formulation and program implementation of leisure agencies at the local and larger levels.

SSI 525. LEISURE POLICY (4)
PR: SSI 522 or CI. General issues relating to trends in leisure, and their application to such fields as management, labor, government, gerontology, education, mass media, urban planning, recreation, and counseling; students will prepare term papers to explore one area in detail.

SSI 526. INTERVENTION TECHNIQUES (4)
SSI 326 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.

SSI 583. SELECTED TOPICS (1-4)
PR: CI plus senior standing or graduate status. May be repeated. To provide advanced students with interdisciplinary study of selected topics.

FOR GRADUATE STUDENTS ONLY

SSI 601. SOCIAL PATHOLOGY (4)
An examination of the variety of social criticism which has been leveled at Western society and of some of the defenses which have been made in its behalf. Materials will be chosen from several of the social sciences.

SSI 681. DIRECTED RESEARCH (1-4)
PR: CI and graduate standing. May be repeated. To provide graduate students with interdisciplinary research experience in areas of specific interest.

SSI 685. DIRECTED READINGS (1-4)
PR: CI and graduate standing. May be repeated. To provide graduate students with an intensive reading of interdisciplinary nature in areas of specific interest.
SOCIETY 171

SOCIOLoGY (SOC)


LOWER LEVEL COURSES

SOC 181. CONTEMPORARY SOCIAL PROBLEMS (4) 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. (Formerly SOC 261.)

SOC 201. INTRODUCTION TO SOCIOLOGY (4) Nature and application of social concepts, theories, and methods; analysis of societies, associations and groups; social processes and social change.

SOC 251. MARRIAGE (4) Study of pre-marital and marital relations. Social, cultural and personal factors related to success and failure in mate selection and marriage. Does not count for sociology major credit.

SOC 299. CAREERS IN SOCIOLOGY (2) 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.)

UPPER LEVEL COURSES

SOC 301. INTRODUCTION TO SOCIAL WELFARE (4) PR: SOC 201 or CI. The historical and contemporary development of organized social services and institutions to meet human needs.

SOC 315. FOUNDATIONS OF THEORY (4) PR: SOC 201 or CI. Consideration of selected theories in sociology and procedures of systematic theory construction.

SOC 321. SOCIAL INVESTIGATION (4) PR: SOC 201, SSI 301. Methods and techniques of social research. Design of sociological studies, collection of data, and interpretation of results.

SOC 325. COMMENTARY FILM MAKING IN THE SOCIAL SCIENCES (4) PR: Major in the College of Social and Behavioral Sciences and concurrent registration 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 326. LABORATORY WORK IN COMMENTARY FILM MAKING IN THE SOCIAL SCIENCES (2) PR: SOC 325, concurrent registration 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 331. SOCIAL PSYCHOLOGY (4) PR: PSY 201 or SOC 201. Behavior of the individual human being as affected by social and cultural influences of modern society.

SOC 341. SOCIAL ORGANIZATION (4) PR: SOC 201 or CI. Social organization in the broadest sense, including institutions and associations, as well as variations in role and status.

SOC 345. SOCIAL STRATIFICATION (4) PR: SOC 201 or CI. Social status and social stratification, social class as a factor in behavior, social mobility.

SOC 351. THE FAMILY (4) PR: SOC 201 or CI. Principles of family organization, social adjustment and control. Maturation, socialization and stability of the family.

SOC 371. RACIAL AND ETHNIC RELATIONS (4) PR: SOC 201 or CI. Comparative study of interracial relations, social tensions, attitudes, and modes of adjustment in various areas of the world.

SOC 373. SOCIOLOGY OF RELIGION (4) PR: SOC 201 or CI. Types, sources, and functions of religious behavior. Religious behavior in relation to other aspects of personality and culture.

SOC 401. SOCIETY IN TRANSITION (4) PR: Upper level standing. An analysis of the forces for change in contemporary society, utilizing a sociological perspective. Does not count for sociology major credit.

SOC 433. COLLECTIVE BEHAVIOR (4) PR: SOC 201 or CI; upper division standing. Study of the development of group and mass behavior—crowds, social movements. (Formerly SOC 533.)

SOC 447. SOCIOLOGICAL IMPLICATIONS OF INDUSTRIALIZATION (4) PR: SOC 201 or CI. Socio-cultural elements which define and accompany the process of industrialization as observed in mature industrial nations.

SOC 449. POLITICAL SOCIOLOGY (4) PR: SOC 201 or CI. An examination of the social factors that affect government, politics, and political behavior.

SOC 453. SOCIOLOGY OF THE ARTS (4) PR: SOC 201 or CI; upper division standing. The creation, distribution and use of arts from a sociological perspective; the social roles involved. (Formerly SOC 553.)

SOC 461. CRIMINOLOGY (4) PR: SOC 201 or CI; upper division standing. Etiology of criminal behavior; law enforcement, crime in the United States; penology and prevention. (Formerly SOC 561.)

SOC 463. JUVENILE DELINQUENCY (4) PR: SOC 201 or CI; upper division standing. Theories of delinquency, patterns of delinquent behavior, methods of control and treatment. (Formerly SOC 563.)

SOC 481. INDIVIDUAL RESEARCH (4) PR: Four courses in sociology, including SOC 321, upper division standing or CI. Content dependent upon interests and competence of the student. Does not count for sociology major credit.

SOC 483. TOPICS IN SOCIOLOGY (4) PR: 16 quarter hours in Sociology and prior consent of instructor. May be repeated for credit. See class schedule for content. (Formerly SOC 583.)

SOC 491. SENIOR SEMINAR (4) For seniors majoring in Sociology or other social sciences. Major issues in sociology, stressing theory and research.

FOR SENIORS AND GRADUATE STUDENTS

SOC 505. COMMUNITY WELFARE RESOURCES (4) PR: SOC 301 or CI; upper division standing. Emphasis upon voluntary programs and their development, planning, and coordination.

SOC 531. SOCIAL INTERACTION (4) PR: SOC 331, or CI; upper division standing. Interpersonal
influence, complex behavior, role, conflict, and social situational factors.

SOC 535. SOCIOLOGY OF SMALL GROUPS
PR: SOC 201 or CI; upper division standing. Theory of small group structure, mechanics of interaction, observation of small groups.

SOC 541. SOCIAL CHANGE
PR: SOC 201 or CI; upper division standing. Major theories of social and cultural change, and mechanisms of change in various societies.

SOC 543. URBAN SOCIOLOGY
PR: SOC 201 or CI; upper division standing. The social structure of the community in modern industrial societies. Analysis of community change.

SOC 571. POPULATION
PR: SOC 201 or CI; upper division standing. Sociological determinants of fertility, mortality, and migration; theories of population change.

SOC 575. INDUSTRIAL SOCIOLOGY
PR: SOC 201 or CI; upper division standing. Interaction, communication and authority in economic organizations; the factory as a social system.

FOR GRADUATE STUDENTS ONLY

SOC 611. CONTEMPORARY SOCIOLOGICAL THEORY
PR: Undergraduate course in sociological theory or CI. Emphasizes logical and conceptual dimensions of theory and theory construction.

SOC 621. METHODS OF RESEARCH
PR: Course in Social Investigation or CI. Logic and practice of research; problems of observation and data collection, data processing, and evaluation.

SOC 623. SOCIOLOGICAL STATISTICS
PR: SSI 301 or CI. Logic and application of parametric and nonparametric statistical analysis for sociological data.

SPEECH COMMUNICATION (SPE)


LOWER LEVEL COURSES

SPE 103. SPEECH COMMUNICATIONS FOR FOREIGN STUDENTS I
A special course for students learning English as a second language. Intensive study and drill in American English pronunciation and listening comprehension. May be taken in conjunction with ENG 100—English for Foreign Students.

SPE 104. SPEECH COMMUNICATION FOR FOREIGN STUDENTS II
PR: SPE 103 or CI. Intensive study and drill in American English pronunciation and listening comprehension. Emphasis on diction and speaking skills.

SPE 201. FUNDAMENTALS OF SPEECH COMMUNICATION
The nature and basic principles of speech; emphasis on improving speaking and listening skills common to all forms of oral communication through a variety of experiences in public discussion.

SPE 203. SPEECH IMPROVEMENT AND PHONETICS
Designed to improve vocal quality and expressiveness, articulation, and pronunciation, and to give instruction and practice in using the International Phonetic Alphabet for speech improvement.

UPPER LEVEL COURSES

SPE 311. INTRODUCTION TO SPEECH SCIENCE

SOC 631. SOCIAL PSYCHOLOGY SEMINAR
PR: Course in Social Psychology or CI. Stresses contemporary developments in social psychological theory and empirical research.

SOC 641. COMMUNITY ANALYSIS
PR: Course in Urban Sociology or CI. Theories of community and community organization. Methods of community study; problems of urban areas.

SOC 643. COMPLEX ORGANIZATIONS
PR: Course in Social Organization or CI. Organizational theory, bureaucratic models, authority, power legitimation, and types of formal organization.

SOC 651. FAMILY ANALYSIS
PR: Course in Family or CI. Theory of interpersonal relations and interaction in the modern family. Analysis of functions and roles.

SOC 661. DEVIANCE & CONTROL
PR: Course in criminology or juvenile delinquency or CI. Theories of control and deviance with research application in problem areas.

SOC 681. GRADUATE RESEARCH
PR: CI. Content and method dependent upon interest and competence of student.

SOC 683. SPECIAL TOPICS-SOCIOLOGY
PR: CI. Content varies according to interests of students and instructor. May be repeated for credit.

SOC 690. THE COMMUNICATION OF SOCIOLOGY
PR: SOC 611, 621, 623 or CI. Designed to help students define and formalize more effective efforts at communicating sociology. Majors only.

SOC 699. RESEARCH AND WRITING OF MASTER'S THESIS
PR: Equivalent of 16 quarter hours in the student's graduate program, SOC 611, 621, 623, 690. May be repeated for credit to a maximum of 8 hours.

PR: SPE 203 or CI. Communication models are analyzed. Emphasis on quantifiable parameters of effective speaking.

SPE 320. ISSUES AND INTERPRETATION
The study of literature through analyses of printed textual materials and of the visual-aural textual performance of them. May be repeated.

SPE 321. FUNDAMENTALS OF ORAL READING
PR: SPE 201 or 203. Designed to develop proficiency in the understanding and oral communication of literary and other written materials.

SPE 322. ORAL INTERPRETATION PERFORMANCE
PR: SPE 321 or CI. The study, rehearsal, and performance of literature for Readers Theatre and Chamber Theatre productions. May be repeated (maximum total 6 hours).

SPE 360. CURRENT ISSUES AND RHETORIC
Analysis of significant current speakers and issues. May be repeated.

SPE 361. GROUP COMMUNICATION
PR: SPE 201 or CI. A survey of theory and experimental research in group communication. Group discussions and communication exercises to increase awareness of the dynamics of human communication in small group settings.

SPE 362. TECHNICAL COMMUNICATION
Investigation and application of methodology and effective technical communication for effective oral presentation of technical reports.

SPE 363. PUBLIC SPEAKING
PR: SPE 201 or CI. Study of selected public addresses as aids in speaking extemporaneously and from manuscript. The relationship between public speaking and public policy formulation.

SPE 365. ARGUMENTATION AND DEBATE
PR: SPE 201. Study of principles of argumentation as applied

SPE 366. FORENSICS (2)
PR: SPE 365 or Cl. Study, library research, and practice in forensics. Application of the principles of rhetoric to the current debate and discussion topics. May be repeated (maximum of 6 hours.)

SPE 367. FORMS OF PUBLIC ADDRESS (5)
PR: SPE 363 or 365. An advanced course emphasizing arrangement and style in informative, persuasive and ceremonial public address.

SPE 368. RHETORIC OF CONFRONTATION (4)
PR: Sophomore standing. The study of rhetorical strategies and tactics of agitation and control in confrontation situations.

SPE 369. PARLIAMENTARY SPEAKING (3)
Principles of parliamentary procedure and practice in conducting and participating in meetings governed by parliamentary rules.

SPE 370. SPEECH COMMUNICATION THEORY (5)
PR: SPE 201 or Cl. The study of source, message, and receiver variables in human communication; communication settings; descriptive and predictive models of communication; speech communication as a process.

SPE 381. UNDERGRADUATE RESEARCH (1-5)
PR: Junior standing and Cl. Individual investigations and faculty supervision.

SPE 383. SELECTED TOPICS (1-5)
PR: Junior standing and Cl.

SPE 385. DIRECTED READINGS (1-5)
PR: Junior standing and Cl.

SPE 481. UNDERGRADUATE RESEARCH (1-5)
PR: Senior standing and Cl. Individual investigations with faculty supervision.

SPE 483. SELECTED TOPICS (1-5)
PR: Senior standing and Cl.

SPE 485. DIRECTED READINGS (1-5)
PR: Senior standing and Cl.

SPE 491. SENIOR SEMINAR IN SPEECH COMMUNICATION (5)
PR: Senior standing, Speech Communication major. Exploration of selected topics of current significance to the several areas of speech communication through group discussion and research.

FOR SENIORS AND GRADUATE STUDENTS
SPE 501. SPEECH BEHAVIOR AND PROCESSES (5)
PR: Upperclass standing. Study of the theories of the simple and complex acoustical phenomenon of speech; intensive analysis of the stimulus-feedback variables of speech.

SPE 503. APPLIED PHONETIC TRANSCRIPTION (5)

SPE 511. EXPERIMENTAL PHONETICS (5)
PR: SPE 203 or Cl. Intensified training in auditory discrimination of the sounds of American English. Detailed use of research findings, instruments and methodologies in the laboratory study of normal speech. Development of phonetic skills of discrimination and reproduction of speech sounds.

SPE 521. ORAL INTERPRETATION OF DRAMATIC LITERATURE (5)
PR: SPE 321 or Cl. Critical appreciation and Oral Interpretation of special textual materials which are inherently dramatic in nature and poetry, narrative prose, drama, biography, and history.

SPE 522. ORAL INTERPRETATION OF POETRY (5)
PR: SPE 321 or Cl. Critical appreciation of lyric and narrative poetry and communication of that appreciation to audiences. Study of poetic theory and prosodic techniques.

SPE 523. LITERARY ADAPTATION AND ORAL INTERPRETATION (5)
PR: SPE 321. Practice in composition and adaptation of literary materials for oral presentation; an investigation of the more advanced problems in oral interpretation as in Choral Speaking and Chamber Theatre.

SPE 524. ORAL INTERPRETATION OF DRAMATIC LITERATURE II (5)
PR: SPE 521. A study of selected pre-modern dramas with special emphasis on problems of interpretation for oral performance.

SPE 525. ORAL INTERPRETATION OF CHILDREN'S LITERATURE (5)
PR: SPE 321 or Cl. A study of the theories and practice in the oral interpretation of poetry and narrative fiction for children with special emphasis on classical and modern literature.

SPE 526. ORAL INTERPRETATION OF BIBLICAL LITERATURE (5)
PR: SPE 321 or Cl. A critical interpretation and oral presentation of selected Books of the Old and New Testaments.

SPE 561. THEORY AND RESEARCH IN SMALL-GROUP COMMUNICATION (5)
PR: SPE 361. Advanced study of theories and research in communicative interaction in group discussion and conference.

SPE 565. HISTORY AND CRITICISM OF PUBLIC ADDRESS (5)
PR: SPE 363 or Cl. The principles of rhetorical criticism applied to selected great speeches of Western Civilization.

SPE 567. PERSUASION (5)

SPE 581. RESEARCH (1-5)
PR: Senior or graduate standing and Cl.

SPE 583. SELECTED TOPICS (1-5)
PR: Senior or graduate standing and Cl.

SPE 585. DIRECTED READINGS (1-5)
PR: Senior or graduate standing and Cl.

SPE 593. LANGUAGE AND SPEECH FOR CHILDREN (5)
PR: SPE 203 or Cl. A diagnostic study of language development; the analysis of speech behavior and oral language needs of children; techniques of speech improvement for children.

FOR GRADUATE STUDENTS ONLY
SPE 603. ADVANCED PHONETICS (5)
PR: SPE 503 or equivalent. Intensified training in close phonetic transcription. Work on dialects, intonation, distinctive feature theory and acoustic phonetics.

SPE 611. COMMUNICATION: ANALYSIS AND MEASUREMENT (5)
A study of selected modes of communication. Includes analysis of communication symbology, and presents the theory and application of selected instruments for measuring and producing speech.

SPE 612. SEMINAR IN SPEECH SCIENCE (5)
PR: SPE 511. To provide graduate students with an opportunity to interact with faculty and other students for the purpose of developing an in-depth understanding of a selected sub-area of Speech Science.

SPE 621. HISTORY AND THEORIES OF ORAL INTERPRETATION (5)
A study of the history, critical writings, uses, and developments of the art of oral interpretation, with analysis of the principles and practices.

SPE 661. CLASSICAL RHETORIC (5)
Greek and Roman theory and practice; emphasis on Aristotle, Plato, Cicero, and Quintilian, selected other readings.

SPE 662. MODERN RHETORICAL THEORY (5)
Studies of Eighteenth and Nineteenth Century theorists and the historical and cultural forces influencing them; relationship to contemporary theory and practice.
SPE 664. THEORIES OF RHETORICAL CRITICISM (5)
The study of theoretical perspectives in rhetorical criticism.
The application of criticism to selected rhetorical situations.

SPE 665. HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS (5)
Criticism of selected speeches and speakers of American public address, studied against a background of political, social, and intellectual issues.

SPE 666. THEORIES OF ARGUMENT (5)
An examination of argumentative theory through the medium of selected reading in the works of major theorists past and present. In addition, selected examples from the argumentative persuasion of each historical period will be examined and analyzed for the purpose of correlating theory with practice.

SPE 667. CONTEMPORARY RHETORICAL THEORY (5)
Studies in Speech and language; Speech as symbol, theories of meaning, the relation of language, thought, and action.

SPE 668. EXPERIMENTAL RESEARCH IN ORAL COMMUNICATION (5)
Critical examination of research design, procedures, and reporting of experimental studies in small group communication and persuasive discourse.

SPE 681. GRADUATE RESEARCH (1-5)
Directed study in special projects. Recommended only when material cannot be studied in scheduled courses.

SPE 683. SELECTED TOPICS IN SPEECH (1-5)
SPE 685. DIRECTED READINGS (1-5)
SPE 691. GRADUATE SEMINAR IN ORAL COMMUNICATION (5)
SPE 694. SUPERVISED COLLEGE SPEECH INSTRUCTION (3)
PR: Graduate standing and CI. Instruction and experience in teaching the University's basic Speech Communication courses. Credit not applicable toward the graduate degree in Speech Communication. May be repeated.

THEATRE ARTS (TAR)


LOWER LEVEL COURSES
TAR 201. 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 TAR 211, 212, 213. Required of all theatre majors.

TAR 211, 212, 213. THEATRE LABORATORY I, II, III (4,4,4)
A seminar-laboratory-workshop in movement, voice, design, and theatre technology. All three quarters of this course together with TAR 201, are required of all theatre majors. The courses may be taken in any order, but all three must be completed before the student may proceed to the next level of theatre study. TAR 201 must be taken concurrently with the first course registered for in this group. Open to non-majors. Non-majors may terminate their enrollment in this group at the end of any quarter. Required of all theatre majors.

UPPER LEVEL COURSES
TAR 303. MODERN THEATRE PRACTICE (5)
Initial readings and exercises in theatre; play analysis, performance, and technical theatre for non-theatre majors.

TAR 311. WORKSHOP FOR TEXT ANALYSIS (4)
PR: Completion of the four 200-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.

TAR 312. SPECIAL SKILLS IN MOVEMENT (4)
PR: Completion of the four 200-level courses. Stage violence, circus and acrobatic techniques and other special techniques of movement.

TAR 314. VOICE PREPARATION FOR THE ACTOR (4)
PR: Completion of the four 200-level courses. A laboratory in corrective speech and voice production for the actor.

TAR 321. MEANS OF VISUAL EXPRESSION (4)
PR: Completion of the four 200-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.

TAR 339. THEATRE HISTORY (4)
A survey of significant periods in world theatre. Required of all theatre majors. Open to non-majors.

TAR 352. PERFORMANCE (1)
The study, rehearsal, and performance of major theatrical works. Open to all University students by audition on a credit or non-credit basis. May be repeated. Additional appropriate credit may be earned with TAR 481 or TAR 581.

TAR 361. INTRODUCTION TO PUPPETRY (4)
PR: Completion of all four 200-level courses. Open to non-majors with CI. Principles and methods of puppetry with an historical survey of major forms and practical problems with laboratory production.

TAR 362. PUPPETRY PRODUCTION (4)
PR: TAR 361. 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 8 hours.

TAR 363. PUPPETRY PERFORMANCE (4)
PR: TAR 362. Open to non-majors with CI. Experience in the production and presentation of a 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 8 hours.

TAR 365. THEATRE FOR CHILDREN (4)
PR: Completion of all four 200-level courses. Open to non-majors with CI. Theory of theatre for children, its history and objectives. Techniques of production from script selection and analysis to performance. May be repeated one time for additional elective credit, with CI, to a total of 8 hours.

TAR 366. PERFORMING THEATRE FOR CHILDREN (4)
PR: TAR 365. Experience in the production and presentation of a play for children. Follows directly from the course in Theatre for Children and must be taken in the quarter immediately following that course. May be repeated one time for additional elective credit, with CI, to a total of 8 hours.

TAR 367. INFORMAL THEATRE WITH CHILDREN (4)
PR: CI. Open to non-majors. Theories and techniques of informal theatre with children. Focus is on the creative development of the child through improvised theatre.

TAR 403. THEATRE ORIGINS (6)
PR: Completion of first three years as a theatre major and one from the following: TAR 430, 431, 434, 437 or CI. Required of all theatre majors. 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. (Formerly TAR 503.)
TAR 410. ACTING I (4)
PR: TAR 311 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.

TAR 411. ACTING II (4)
PR: TAR 410 and audition or TAR 412 or 414. Intermediate scene study. Special attention given to dialects and period movement. Required of all theatre majors with a performance concentration.

TAR 412. ACTING III (4)
PR: TAR 410 and audition or TAR 411 or 414. 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.

TAR 414. ACTING IV (4)
PR: TAR 410 and audition or TAR 411 or 412. A workshop in the classic repertory. Advanced scene study. Required of all theatre majors with a performance concentration. (Formerly TAR 511.)

TAR 415. ACTING V (4)
PR: TAR 438 or 439. The aesthetics of acting. The various theories of the art. Required of all theatre majors with a performance concentration. (Formerly TAR 514.)

TAR 417. SCENE PAINTING (2)
PR: TAR 421, 422, 423, plus any three of TAR 420, 424, 425, 427, 428, 429. A practical course in the painting of stage scenery—media and application. (Formerly TAR 527.)

TAR 420. DRAWING—FIGURE (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. Drawing the human form and fabrics with an emphasis for the costume designer.

TAR 421. HISTORY OF ARCHITECTURE (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. Required of all theatre majors with a design and technology concentration. A survey of architectural history with specific emphasis on architectural proportion, construction and style.

TAR 422. HISTORY OF DECOR (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. Required of all theatre majors with a design and technology concentration. A survey of decorative motif and decor and their stylistic concepts.

TAR 423. HISTORY OF CLOTHING (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. Required of all theatre majors 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.

TAR 424. TECHNOLOGY—CONSTRUCTION: FABRIC (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. A practical course in costume construction and application.

TAR 425. TECHNOLOGY—THEATRE-ELECTRONICS/OPTICS (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. A practical course dealing with the application of electronics and optics to stage lighting equipment.

TAR 427. DRAWING—DRAFTING FOR THE STAGE (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. A practical course in drafting for the stage.

TAR 428. DRAWING—ARCHITECTURAL (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. A course in rendering the inanimate form.

TAR 429. TECHNOLOGY—CONSTRUCTION: SCENIC (2)
PR: Completion of second year requirements for the theatre major and portfolio or Cl. A practical course in scene construction and application.

TAR 430. DRAMA—SPECIAL TOPICS (4)
PR: TAR 339 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 4 hours will be counted toward major requirements, but other hours may be counted towards electives.

TAR 431. THE COMEDY OF THE CLASSIC AND NEO-CLASSIC STAGE (4)
PR: TAR 339 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.

TAR 434. AMERICAN THEATRE (4)
PR: TAR 339 or Cl. A course in the function of the script for the active theatre artist treating materials in the American theatre from the beginnings to the present.

TAR 437. THE DRAMA OF THE 19TH AND 20TH CENTURY STAGE (4)
PR: TAR 339 or Cl. A course in the function of the script for the active theatre artist treating materials from the 19th and 20th Centuries.

TAR 438. SENIOR SEMINAR-WORKSHOP (4)
PR: TAR 411, 412, and 414. Audition and cold reading techniques. (Formerly TAR 512.)

TAR 439. SENIOR WORKSHOP FOR ACTORS (4)
PR: TAR 411, 412, and 414 and audition. A coaching workshop in individual problems. (Formerly TAR 513.)

TAR 443, 444, 445. WRITING FOR THE THEATRE I, II, III (4,4,4)
PR: Completion of the first two years as a theatre major and Cl. 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.

TAR 452. ADVANCED PERFORMANCE (1)
PR: TAR 352 or Cl. The study, rehearsal, and performance of major theatrical works. Admission by audition. May be repeated. Additional appropriate credit may be earned with TAR 481 or TAR 581. (Formerly TAR 552.)

TAR 453. THEATRE STUDIES SEMINAR (4)
PR: TAR 403. A seminar in the nature of the synthesized theatre object. Required of all majors. (Formerly TAR 553.)

TAR 454. LABORATORY WORKSHOP IN PERFORMANCE (4)
PR: TAR 311 and Cl. Special workshop in advanced techniques based upon individual problems and needs. May be repeated twice (to a total of 12 hours credit).

TAR 455. PROBLEMS IN MUSIC THEATRE (4)
PR: TAR 311. Special problems in acting as applied to the musical theatre.

TAR 456, 462, 463, DESIGN I, II, III (4,4,4)
PR: TAR 421, 422, 423, plus any three of TAR 420, 424, 425, 427, 428, 429; and portfolio. The aesthetic and practical applications of the elements of design for theatre presentation. (Formerly TAR 521, 522, 523.)

TAR 464. PATTERN DRAFTING (2)
PR: TAR 421, 422, 423, plus any three of TAR 420, 424, 425, 427, 428, 429. A practical course in the drafting of workable patterns for costing the actor. (Formerly TAR 528.)

TAR 465. SPECIAL PROJECTS (2)
PR: TAR 421, 422, 423, plus any three of TAR 420, 424, 425, 427, 428, 429. An individually designed course of study tailored for the student's advanced work in technology and design. (Formerly TAR 529.)

TAR 472. STAGE MANAGEMENT (4)
PR: Completion of an upper level concentration in theatre. A practical course in the working and organizational function of the stage manager in theatre, dance, opera, and other live performance situations. (Formerly TAR 571.)

TAR 473. THEATRE MANAGEMENT (2)
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. (Formerly TAR 573.)
WOMEN'S STUDIES PROGRAM

TAR 474, 475, 476. TECHNICAL MANAGEMENT I, II, III
PR: TAR 421, 422, 423, plus any three of TAR 420, 424, 425, 427, 428, 429. A study of the technical operation and organization for the theatre technologist. Advanced problems in techniques and organization. (Formerly TAR 524, 525, 526.)

TAR 481. DIRECTED STUDIES
PR: CC. Independent studies in the various areas of Theatre. Course of study and credits must be assigned prior to registration.

TAR 485. DIRECTED READING (1-6)
PR: TAR 481. 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 piece.

TAR 483. SELECTED TOPICS IN THEATRE (1-4)
PR: CC. The content of the course will be governed by student demand and instructor interest. May be repeated for credit for different topics only.

TAR 485. DIRECTED READING (1-6)
PR: CC. Independent studies in the various areas of Theatre. Course of study and credits must be assigned prior to registration.

FOR SENIORS AND GRADUATE STUDENTS
TAR 581. DIRECTED STUDIES
PR: CC. Independent studies in the various areas of Theatre. Course of study and credits must be assigned prior to registration.

WOMEN'S STUDIES PROGRAM (WSP)

Director: J. H. Williams; Associate Professor: J. H. Williams; Assistant Professor: J. O. Ochshorn; Instructor: M. Ferrandino.

LOWER LEVEL COURSES
WSP 201. INTRODUCTION TO WOMEN'S STUDIES (4)
A survey of the major issues relevant to the female experience; psychological, sociological, and anthropological perspective. Interdisciplinary faculty.

UPPER LEVEL COURSES
WSP 309, 310, 311. WOMEN IN WESTERN CIVILIZATION (4,4,4)
PR: WSP 201 or CI. Interdisciplinary and comparative study of women in Western civilization, with particular emphasis on the historical sources and evolution of anti-feminist attitudes in selected societies. WSP 309: Pre-Biblical period through the Middle Ages. WSP 310: Renaissance through the eighteenth century. WSP 311: Nineteenth and twentieth centuries.

WSP 315. CONTEMPORARY WOMAN IN THE UNITED STATES (4)

WSP 321. WOMEN IN CROSS-CULTURAL PERSPECTIVE (4)
PR: WSP 201, ANT 201, 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 as ANT 431.)

WSP 329. HISTORY OF FEMINISM (4)
PR: WSP 201 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.

WSP 378. SEXUAL POLITICS 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 as ENG 378.)

WSP 379. SEXUAL POLITICS 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 as ENG 379.)

WSP 401. PSYCHOLOGY OF WOMEN (4)
PR: WSP 201. 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 as PSY 450.)

WSP 405. 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 as PSY 451.)

WSP 444. WOMEN AND THE EDUCATIONAL PROCESS (4)
PR: Junior standing recommended. Covers both the role of women in the arts and the way schools have helped to shape the role women play in American society. Topics include development of sex-role stereotypes through classroom interactions and curriculum materials, the status of women in public and higher education and laws affecting it, and the role of the schools in forming educational and career aspirations of girls and women. Emphasis will be placed on ways parents and teachers may counteract the sex-typing which schools, as they are currently structured, perpetuate. (Also offered as EDF 444.)

WSP 483. SELECTED TOPICS (4)
PR: WSP 201 or CI. Study in special areas such as Women and the Law, The Aging Woman, Women and the Professions, Women in the Arts.

WSP 491. SEMINAR IN WOMEN'S STUDIES (4)
PR: WSP 201, or CI. In-depth study of research in one or more areas of topical interest to students and staff. Research involvement by students required.
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, 1974. (A semicolon between degrees indicates different institutions).

ABBEY, 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.L.S., Rutgers, 1969

ADAMS, PATRICIA B. ....... Instructor (Nursing), 1974
R.N.; B.S.N.; M.N., University of Florida, 1974

ADAMS, PATRICIA W. ....... Counselor and Adviser (University Studies; Student Affairs), 1965
B.S.; M.Ed., University of Mississippi, 1963, E.D. G.C.

AGRESTI, DAVID L. ....... Instructor (Criminal Justice Program), 1973
B.A.; M.S.W., Florida University, 1971

AHUWALIA, DAIIT S. ....... Professor (Mathematics), 1972
B.A., M.A.; M.S., Ph.D., Indiana University, 1965

AKINS, DANIEL L. ....... Assistant Professor (Chemistry), 1970
B.S.; Ph.D., University of California, Berkeley, 1968

ALEXANDER, LERUA K. ...... Interim Lecturer (Sociology), 1972
B.A.; M.A., Ohio State University, 1966

ALLEN, EDMUND E. ....... Director and Adjunct Professor (University Counseling Center; Student Affairs), 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.S.E.E., M.S.E.E., Ph.D., Georgia Institute of Technology, 1966

ALVAREZ, MARVIN R. ...... Professor and Pre-Medical Sciences Advisor (Biology), 1966
B.S., M.S., Ph.D., University of Florida, 1964

ANDERSEN, PHILIP H. ....... Assistant Professor (Surgery), 1974
(B.S.; M.D., Marquette University, 1964

ANDERSON, CELIA L. ....... Assistant Professor (Education), 1967
A.B.; M.S., Florida State University, 1953

ANDERSON, DONALD J. .... Director (Institutional Studies), 1967
B.S.; M.A., University of South Florida, 1971

ANDERSON, E. CHRISTIAN .... Professor (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. ....... Assistant University Librarian (Libraries), 1975
B.A.; M.S.L.S., Columbia University, 1961

ANDERSON, JOHN A. ....... Assistant Professor (Business Management), 1967, St. Petersburg Campus
B.A., M.A., Ph.D., University of Florida, 1973

ANDERSON, LOUIS V. .... Associate Professor (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, ROBERT L. ....... Assistant Professor (Marketing), 1971
B.B., M.S.; Ph.D., North Texas State University, 1971

ANGROSINO, MICHAEL V. ....... Assistant Professor (Anthropology), 1972
B.A.; Ph.D., University of North Carolina, 1972

ANKER, JAMES M. ....... Professor/Chairman (Psychology), 1974
A.B., M.A., Ph.D., Catholic University of America, 1957

ANTON, WILLIAM D. ....... Lecturer (Counseling Center, Student Affairs), 1972
B.A., M.A., Ph.D., University of South Florida, 1975

ANTIOJO, JAMES F. ....... Associate Professor (Accounting), 1970
B.S., M.S., Ph.D., University of Illinois, 1967, C.P.A.

ARMSTRONG, RONALD W. .... Instructor (Sociology), 1972
St. Petersburg Campus
B.A.; M.A., University of Oregon, 1970

ARNADE, CHARLES W. ....... Professor (Interdisciplinary Social Science), 1961
A.B., M.A., Ph.D., University of Florida, 1955

ASH, KARIN S. ....... Student Affairs Coordinator (Cooperative Education and Placement, Student Affairs), 1972
B.A.; M.S., University of Bridgepori, 1972

ASHFORD, THEODORE A. ....... Professor (Chemistry), 1960
B.S., M.S., Ph.D., University of Chicago, 1936

ASTLE, JOHNNE C. ....... Instructor (Management), 1973
(Part time)
B.A., M.A., Oklahoma State University, 1971

AUBEL, JOSEPH L. ....... Associate Professor (Physics), 1964
B.S., Ph.D., Michigan State University, 1964

AUSTIN, LARRY D. ....... Professor (Music), 1972
B.M., M.M., North Texas State University, 1952

AUSTIN, MARTHA L. ....... Professor (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, GARRETH R. ....... Assistant Professor (Biology), 1972
B.A.; M.S.; Ph.D., 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. ....... Chairperson and Professor (Physiology), 1971
B.A., M.A., Ph.D., Princeton University, 1955

BAILY, DONALD K. ....... Lecturer (Mass Communications), 1972
B.S., M.Ed., Wayne State University, 1968

BARBER, SOTIRIOS A. ....... Associate Professor (Political Science), 1967
B.A., M.A., Ph.D., University of Chicago, 1972

BAKHOLOZ, GERALD R. ....... Instructor (Education), 1968
B.S., M.Ed., Wayne State University, 1968

BARNARD, JAMES W. ....... Professor and Acting Associate Dean (Education), 1968
A.B.; M.A.; M.S., Ph.D., Yale University, 1963

BARNES, WILLIAM J. ....... Lecturer (Engineering), 1974 (Part time)
B.S., University of South Florida 1972

BARNES, LEWIS A. ....... Chairperson and Professor (Pediatrics), 1972
A.B., M.D., Harvard Medical School, 1944, M.A. Hon.

BARRETT, O'NEILL, JR. ....... Chairperson and Professor (Comprehensive Medicine), 1973
B.S.; M.Sc., M.D., Louisiana State University, 1953
BINFORD, BILLINGSLEY, BIERENBAUM, 178

BETZ, BERRY, TOMMY

BEST, MARGARET

BENTLEY, JOSEPH

BENNETT, BENJAMIN, WILLIAM

BEENHAKKER, ARIE, Associate

BEAN, CHARLES F., Curator-Lecturer (Engineering), 1968

BEECH, BELOHLAVEK, BELL, BEHNKE, Roy H., Chairperson and

BEEMAN, DANIELE, Assistant Dean (Student Affairs), 1972

B.S.; Ph.D., Massachusel/s lnstitute of Technology, 1965

B.A., M.A.; Ph.D., University of Rhode Island, 1972

B.S., M.D., University of Florida, 1972

B.A., M.A., University of South Florida, 1972

Bienenhaker, Arie . . . . . . Associate Professor

B.C.; Ph.D., Purdue University, 1964

B.S., M.S., Illinois State University, 1966

BEECH, BELOHLAVEK, BELL, BEHNKE, Roy H., Chairperson and

BEEMAN, DANIELE, Assistant Dean (Student Affairs), 1972

B.S.; Ph.D., Purdue University, 1964

B.A., M.A.; Ph.D., Boston University, 1969

Bell, James A., Assistant Professor (Philosophy), 1974

A.B.; M.A., Ph.D., Boston University, 1969

BELL, JOHN O., Lecturer (Interdisciplinary Social Science), 1966

B.S.; J.D., George Washington University, 1939

BELOHILAVEK, JOHN M., Associate Professor (History), 1970

B.A., M.A., Ph.D., George Peabody College, 1961

BENJAMIN, WILLIAM F., Professor (Education), 1968

B.A., M.A., Ph.D., George Peabody College, 1961

BENNIT, GEORGE K., Associate Professor (Engineering), 1974

B.S.; M.S.; Ph.D., Texas Technological University, 1970

BENTLEY, JOSEPH G., Professor (English), Director

Graduate Studies, 1961

B.A., Ph.D., Ohio State University, 1961

Benway, Robert E., Associate Professor (Surgery), 1972 (Part time)

B.S., M.D., University of Miami, Florida, 1957

BERKLEY, RICHARD J., Assistant Professor (Physics), 1963

B.A., M.S., New Mexico Institute of Mining & Technology, 1955

BERRY, TOMMY R., Director (Auxiliary Services), 1968

B.A., University of South Florida, 1968

BEST, GAIL G., Counselor to Students and Instructor

Student Affairs), 1969

M.S., Illinois State University, 1969

BEST, MARGARET E., Assistant University Librarian

(Libraries), 1974

B.A., M.A.; L.S., University of Michigan, 1974

BETZ, JOHN V., Associate Professor (Biology), 1963

B.S.C.; Ph.D., St. Bonaventure University, 1963

BETZER, PETER, Assistant Professor (Marine Science), 1971

St. Petersburg Campus

B.A.; Ph.D., University of Rhode Island, 1971

BETZER, SUSAN B., Research Associate (Marine Science), 1973 (Part time), St. Petersburg Campus

A.B.; Ph.D., University of Rhode Island, 1972

BIBERBAUM, HARVEY S., Assistant Professor

Chemical Engineering), 1974

B.S.; M.S., Ph.D., Worcester Polytechnic Institute, 1971

BIGGS, MARYANNE M., Instructor—Assistant to Dean

(Business Administration), 1971

B.A., Syracuse University, 1961

BILLINGSLEY, EDWARD B., Associate Professor (History), 1967

B.S.; M.A.; Ph.D., University of North Carolina, 1964

BINFORD, JESSE S., JR., Professor (Chemistry), Adjunct Professor (Biology), 1961

B.A., M.A.; Ph.D., University of Utah, 1955

Birke, Ronald L., Associate Professor (Chemistry), 1969

B.S.; Ph.D., Massachusetts Institute of Technology, 1965

Birkin, Stanley J., Associate Professor

Management), 1969

B.S.C., M.S.C.; Ph.D., University of Alabama, 1969

BLACK, LAWRENCE D., Lecturer (Education), 1973

B.S., M.S.; J.D., Creighton University, 1966

BLAIR, JOHN M., Professor (Economics), 1971

B.A., Ph.D., American University, 1941

BLAIR, RAYMOND C., Lecturer (Education), 1974, (Part time), St. Petersburg Campus

B.A., M.A., University of Florida, 1972

Blake, Norman J., Assistant Professor

(Brane Science), 1972, St. Petersburg Campus

B.S.; M.S.; Ph.D., University of Rhode Island, 1972

BLAU, LILI R., University Counseling Psychologist, Lecturer

(Counseling Center; Student Affairs), 1967

B.S., M.S., Pennsylvania State University, 1951

BLOCH, SYLVAN C., Professor (Physics), 1963

B.S., M.S., Ph.D., Florida State University, 1962

BLOMQVIST, ALLEN J., Associate Professor (Psychology), 1971, St. Petersburg Campus

B.S., M.S., Ph.D., University of Wisconsin, 1960

BLOOM, SHERMAN, Associate Professor (Pathology), 1973

B.A., M.D., New York University, College of Medicine, 1960

BLOUNT, WILLIAM R., Associate Professor (Criminal Justice Program), 1968

B.A.; M.A.; Ph.D., Arizona Peabody College, 1969

BOLER, R. KEITH, Assistant Professor (Anatomy), 1970

B.A.; M.S.; Ph.D., University of Mississippi, 1966

BOLIVAR, JUAN C., Professor (Surgery), 1972 (Part time)

B.S., M.D., University of Paris, Sorbonne, 1940

BONDI, JOSEPH C., JR., Assistant Professor (Education), 1965

B.S., M.Ed.; Ed. D., University of Florida 1968

BOOSTROM, MARGARET C., Assistant Professor (Nursing), 1973

R.N.; B.S.N.; M.N.Ed., University of Pittsburgh, 1966

BOREN, HOLLY G., Assistant Director (Medical Center), Associate Dean (College of Medicine), Professor (Medicine), 1973

B.A.; M.D., Baylor University College of Medicine, 1946

BORG, JEAN M., Lecturer (Education), 1972

B.S.; M.A., University of Illinois, 1962

BOSSEMER, C. PHILLIP, Professor (Sociology), 1967

A.B.; S.T.B., Ph.D., Boston University, 1963

BOSTOW, DARREL E., Assistant Professor (Education), 1970

B.A.; M.A., Ph.D., Southern Illinois University, 1970

BOSTOW, DIANE E., Research Associate

Business Administration), 1974

B.A.; M.A., University of South Florida, 1974

BOTO, FERNANDO, Assistant Professor (Medicine), 1973

B.S.; M.D., University of Antioquia Medical School, Medellin, Columbia, 1964

BOTTE, WILLIAM K., Professor (Education), 1960


BOUJANT, JACK A., Assistant Professor (Physiology), 1974

B.A.; Ph.D., University of Rochester School of Medicine and Dentistry, 1971

BOWEN, ADA M., University Librarian

(Medical Library), 1965

B.S., M.S., M.A., University of South Florida, 1971

BOWERS, JAMES C., Professor (Electrical Engineering), 1965

B.E.; M.S.; Sc. D., Harvard University, 1964

BOWERS, LOUIS E., Professor (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 and Chairperson

(Political Science), 1973

B.A.; Ph.D., University of North Carolina, 1964

BOYD, HERBERT F., Professor (Education), 1965

B.S., M.S., Ph.D., University of Illinois, 1938

BRADLEY, ROBERT V., Associate University Catalog Librarian (Libraries), 1959

B.A., M.A., Florida State University, 1937

BRADSHAW, ROBERT D., Counselor to Students and Lecturer

(Student Affairs), 1973
CARMichael, John D. .... Assistant Professor (Marketing), 1967

CARR, DAVID R. .... Assistant Professor (History), 1971
St. Petersburg Campus
B.A.: M.A., University of Nebraska, 1971
CARR, JOSEPH A. .... Director (Planetarium), 1960
CARR, MATTHEW L. .... Assistant Professor (Internal Medicine), 1974
B.A.: M.D., Albert Einstein Medical College, 1966
CARTER, DAVID A. .... Instructor (Speech Communication), 1973
B.A., M.B.A., Georgia State University, 1965
CARTWRIGHT, EUGENE F. .... Assistant Professor (Psychology), 1969
B.A., B.S., University of Florida, 1965
CASSIDY, Frederick J. .... Assistant Professor (English), 1973
B.A., M.A., University of Texas, 1968
CASSIDY, MARK A. .... Associate Professor (History), 1971
B.A., M.A., Washington State University, 1974
CECILIA, PATRICIA D. .... Research Associate (Minority Affairs), 1974
B.A., University of Wisconsin at Madison, 1964
CECONI, ISABELLE F. .... Lecturer (English), 1960
B.A., Wells College, 1940
CHAMBERS, JAMES A. .... Associate Professor (Education), 1964
A.B.; M.A.: Ed.D., University of Tennessee, 1963
CHAMBERS, WILLIAM N. .... Assistant Professor (Psychiatry), 1973 (Part time)
M.D., Washington University School of Medicine, 1950
CHAPPELL, JAMES E. .... Research Associate (Greater Tampa Alcohol Safety Action Project), 1972
B.S., Memphis State University, 1965
CHEATHAM, Mary J. .... Lecturer (Physical Education), 1967
Assistant Director (Intercollegiate Athletics), 1967
B.A.: M.S., Florida State University, 1967
CHEN, TSONG-MING .... Professor (Electrical Engineering), 1972
B.S.; Ph.D., University of Minnesota, 1964
CHERNIN, HARRIS A. .... Assistant Professor (Radiology), 1973 (Part time)
B.S., M.D., University of Miami, Florida, School of Medicine, 1966
CHERRY, R. ADRIAN .... Associate Professor (Foreign Languages), 1961
B.A., M.A., Ph.D., University of Kentucky, 1960
CHISNELL, ROBERT C. .... Associate Professor (English), 1967
B.A., M.A.; Ph.D., Auburn University, 1971
CHRISTENSEN, JAMES A. .... Instructor (Surgery), 1973 (Part time)
A.B., M.D., Indiana University, 1968
CIMINO, LOUIS E. .... Associate Professor (Pediatrics), 1974 (Part time)
B.S.; M.D., St. Louis University, 1950
CLAPP, ROGER W., JR. .... Associate Professor (Physics), 1963
B.S.; M.S., Ph.D., University of Virginia, 1954
CLARK, JOHN R. .... Chairperson-Professor (English), 1973
B.A.: M.A.; Ph.D., University of Michigan, 1965
CLARK, WILLIAM E. .... Professor (Mathematics), 1970
B.A.; Ph.D., Tulane University, 1964
CLAYTON, GLENNEN E. .... Assistant Vice President (Finance and Planning), 1966
B.S.; M.A., University of South Florida, 1973
CLEARY, LYNN P. .... Assistant Professor (Education), 1970
B.A., M.S., Ph.D., Florida State University, 1970
CLEAVER, FRANK L. .... Professor (Mathematics), 1960
B.S.; M.S.; Ph.D., Tulane University, 1960
CLEMENT, DAVID E. .... Professor (Psychology), 1965
B.S.; Ph.D., Johns Hopkins University, 1963
CLINE, RALPH .... Assistant Professor (Education), 1971
CLINGMAN, JOY M. .... Assistant Professor (Psychology), 1970
CLOSE, JAMES A. .... Professor (Finance), 1971
A.B.; M.B.A.; Ph.D., University of Michigan, 1944
COHEN, STEPHEN L. .... Assistant Professor (Psychology), 1971
B.S., M.S., Ph.D., University of Tennessee, 1971
COKER, JOHN W. .... Lecturer (Fine Arts), 1969
B.S., M.M., College-Conservatory of Music, Cincinnati, 1956
COLE, ROGER W. .... Associate Professor-Director (Linguistics), 1969
B.A., M.A.: Ph.D., Auburn University, 1968
COLLIER, CLARENCE H. .... Assistant Professor (Education), 1968
B.S., M.E., University of Georgia, 1965
COLLIER, TROY L. .... Assistant to Vice President (Student Affairs), 1971
B.S.; M.I.A., Southern Methodist University, 1971
COLLINS, PASCHAL J. .... Assistant Professor (English), 1969
B.S., M.A., University of Denver, 1968
COLLINS, PHILIP D. .... Assistant Director (Intercollegiate Athletics; Student Affairs), 1973
B.A., University of South Florida, 1973
CONNER, HUNTER N. .... Assistant Basketball Coach (Physical Education, Student Affairs), 1974
B.A., M.Ed., University of Virginia, 1965
CONWAY, CHARLES E. .... Assistant Professor (American Studies), 1970
B.S., Temple University, 1961
COOK, DORIS C. .... University Reference Librarian (Libraries), 1968, St. Petersburg Campus
B.B.E., M.S.L.S., Florida State University, 1966
COOK, WILLIAM E. .... Lecturer (Marketing), 1974
COOKE, JOHN P. .... Associate Professor (Economics), 1968
B.S.; M.B.A.; Ph.D., University of Colorado, 1967
COOKE, NANCY S. .... Counselor/Adviser (Education), 1974 (Part time)
B.S.; M.B.A., University of Denver, 1960
COOPER, CLARA B. .... Assistant Professor (Humanities), 1969
B.A., M.A., Ph.D., Florida State University, 1969
CORY, Joseph G. .... Professor and Chairperson (Biochemistry), 1966
B.S., Ph.D., Florida State University, 1963
COSTANZO, FRANCES S. .... Lecturer (Education and Psychology), 1974 (Part time)
B.A.: M.Ed.; Ph.D., Drake University, 1974
COSTANZO, PHILIP R. .... Lecturer (Psychology), 1974 (Part time)
B.A.; M.A., Ph.D., University of Florida, 1967
COTTEN, LARRY J. .... Assistant Professor (Education), 1970
B.A.; B.M.E., University of Florida, 1965
COULTER, PAMELA W. .... Instructor (Communicology), 1971
B.A.: M.A., Ball State University, 1968
COVINGTON, HARRISON W. .... Professor (Visual Arts), 1961
COWELL, BRUCE C. .... Associate Professor (Biology), 1967
B.A., M.A., Ph.D., Cornell University, 1963
COX, BARBARA C. .... Lecturer-Assistant to Dean (Arts and Letters), 1974
B.A., William & Mary, 1958
COX, ERNEST L., III .... Professor (Visual Arts), 1962
B.A.; M.F.A., Cranbrook Academy of Arts, 1961
CRAIG, CALVERT J. .... Associate Professor (Education), 1967
B.S., M.S., University of Illinois, 1951
CRAIG, CHARLES P. .... Associate Professor (Internal Medicine), 1972 (Part time)
Deer, Irving .......................... Professor (English), 1966
B.S.: M.A., Ph.D., University of Minnesota, 1966
Deiter, John C. .......................... Associate Professor (Finance), 1965
B.S., M.B.A., Ph.D., Western Reserve University, 1965
Della Grotto, Joseph A. ............................ Assistant Professor (History), 1967
B.A., M.S., Ph.D., Syracuse University, 1965
Denker, Martin W. .......................... Acting Chairperson and Assistant Professor (Psychiatry), 1972
B.S., M.D., Johns Hopkins University, 1968
Denis, David M. .......................... Assistant Professor (Accounting), 1972
A.B.; M.B.A.; Ph.D., University of Missouri, 1972, C.P.A.
de Quessa, Alejandro M. .......................... Assistant Professor (Internal Medicine), 1973 (Part time)
B.S.: M.D., University of Havana School of Medicine, 1960
Dertke, Max C. .......................... Director (University Studies; Student Affairs), Associate Professor (Criminal Justice), 1967
B.A., Ph.D., University of Miami, Florida, 1968
Devine, James F. .......................... Assistant Professor (SMF-Engineering), 1965
B.S., M.S., University of Illinois, 1960
Deviney, Edward J., Jr. .......................... Associate Professor (Astronomy), Director (Astronomical Observatory), 1968
A.B., Ph.D., University of Pennsylvania, 1968
Deyo, William J. .......................... Instructor (Accounting), 1960 (Part time)
B.S.: M.B.A., Harvard University, 1941
Dickey, Annamary L. .......................... Assistant Professor (Music Arts), 1969
B.S.; M.Ed., Columbia University, 1963, Artist Diploma
Dickey, Earlene .......................... Interim Assistant Professor (Interdisciplinary Social Science), 1965
Dickinson, James C. .......................... Associate Professor (Education), 1969
A.B., A.M., Ph.D., University of Minnesota, 1964
Dickman, Fred J. .......................... Assistant Professor (Rhabdiation Studies Program), 1970
Dietrich, Linnea S. .......................... Assistant Professor (Visual Arts), 1968
B.A.; M.A., Ph.D., University of Delaware, 1972
Dietrich, Richard F. .......................... Associate Professor (English), 1968
A.B.; M.A.; Ph.D., Florida State University, 1965
Dilkes, Thomas P. .......................... Associate Professor (History); 1969
B.A., M.A., Ph.D., State University of Iowa, 1968
Dimento, Louis J. .......................... Assistant Professor (Psychological Science), 1970
B.S., M.S., Ph.D., University of Michigan, 1973
Dobkin, Joseph B. .......................... University Librarian (Libraries), 1974
B.A.; B.A.; M.L.S., Rutgers University, 1966
Donaldson, Merle R. .......................... Chairperson and Professor (Electrical and Electronic Systems), 1964
B.B.E.E., M.S.E.E.; Ph.D., Georgia Institute of Technology, 1959
Doby, Louis F. .......................... Professor (Industrial Systems Engineering), 1970
B.S., M.S., Ph.D., University of Cincinnati, 1951
Downey, James M. .......................... Assistant Professor (Physiology), 1972
B.S.; M.S., Ph.D., University of Illinois, 1971
Downey, Paul M. .......................... Professor (Industrial Systems Engineering), 1966
B.S., M.S., Ph.D., University of Florida, 1956
Downs, Bernard F. .......................... Assistant Professor (Speech Communication), 1970
Doyle, Larry J. .......................... Assistant Professor (Marine Science), 1972, St. Petersburg Campus
B.A., M.A.; Ph.D., University of Southern California, 1973
Drapela, Victor J. .......................... Associate Professor (Education), 1968
B.A.; B.Th.; Ph.L.; M.A., Ph.D., University of North Dakota, 1968
Dubois, Leadore D. .......................... Associate Professor (Education), 1964
B.S., M.A., M.S., Northwestern University, 1949
Duckett, Gregory E. .......................... Research Associate (Pediatrics), 1973
A.B., Lincoln University, 1957
Dudley, Frank M. .......................... Associate Professor (Chemistry), 1960
A.B.; B.S.; M.A., Ph.D., Ohio State University, 1962
DUDLEY, JULIUS W. .................................. Assistant Professor (Afro-American Studies), 1970
B.A., M.A., Atlanta University, 1969
DUNHAM, EUGENE F., JR. .................................. Assistant Professor (Finance), 1973
B.B.A.: M.B.A., University of Michigan, 1966
DUNN, EDGAR H. .................................. Lecturer (Management), 1970, St. Petersburg Campus
J.D., University of Florida, 1947
DUNNE, PETER B. .................................. Associate Professor (Internal Medicine), 1973 (Part time)
A.B.: M.D., Columbia University, 1960
DURSO, MARY W. .................................. Assistant Professor (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
DWKIN, JULIAN J. .................................. Assistant Dean (Admissions), Associate Professor (Anatomy), 1970
B.A.; M.Sc., Ph.D., University of Manitoba, Canada, 1969
DwyER, ROBERT C. ............................ Associate Professor (Education), 1964
DwyER, ROY E. .................................. Lecturer (Education), 1967
B.S.; M.Ed.; Ed., University of Florida, 1957
DYE, HOWARD S. .................................. Dean and Professor (Business Administration), 1973
A.B.; M.A., Ph.D., Cornell University, 1949
Dyes, CLIFFORD R. .................................. Counselor to Students and Instructor (Student Affairs), 1973
EAEK, ALAN B., JR. .................................. Assistant Professor (Visual Arts), 1969
B.A., M.A., University of California, Berkeley, 1969
Ebel, THERON A. .................................. Instructor (Internal Medicine), 1973 (Part time)
B.S.; M.S.; M.D., Indiana University, 1970
EDMONSON, TED C. ............................ Director (Development Services), 1973
B.A., M.R.E., Southern Methodist University, 1965
EDWARDS, WILLIAM C. .................................. Chairperson and Professor (Ophthalmology), 1972
A.B.: M.D., Yule Medical School, 1959
EICHHORN-VON WURMB, HEINRICH K. .................................. Chairperson and Professor (Astronomy), 1964
Ph.D., University of Vienna, 1949
EIlERS, FREDERICK L. .................................. Assistant Professor (Biology), 1967
B.S.; M.S., Ph.D., University of Michigan, 1968
EIlIGETT, JANE K. .................................. Lecturer (Education), 1972 (Part time)
B.A.: M.A., University of South Florida, 1969
ENGEL, CHARLES W. .................................. Associate Professor (Education), 1966
B.S., M.S.; Ed., Wayne State University, 1966
ENGLISH, JOHN .................................. Assistant Professor (Management), 1969
B.S., M.B.A., Ph.D., University of Florida, 1972
ENHOLM, DORIS A. .................................. Interim Instructor (English), 1971
B.A.: M.A., University of South Florida, 1971
ENTREKIN, NINA M. .................................. Assistant Professor (Nursing), 1973
B.S.N.; M.N., Emory University School of Nursing, 1969
ERICSSON, LINDA E. .................................. Associate Director (University Studies; Student Affairs), 1964
B.A., M.A., M.M., University of South Florida, 1970
ERVIN, DONALD E. .................................. Lecturer and Assistant Director (Sponsored Research), 1973
B.S., Athens College, 1964
FABRY, FRANCIS J. .................................. Associate 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., University of Notre Dame, 1974
FAGER, CHARLES J. .................................. Professor (Visual Arts), 1963
B.A.; M.F.A., University of Kansas, 1963
FANNING, JANE A. .................................. Assistant Professor (Nursing), 1973
B.S.; M.S., Boston University, 1970
FANNING, KENT A. .................................. Assistant Professor (Marine Science), 1973, St. Petersburg Campus
B.S.; Ph.D., University of Rhode Island, 1973
FARESE, ROBERT V. .................................. Professor (Internal Medicine), 1973
M.D., Georgetown University, 1958
FELLER, JAMES F. .................................. Instructor (Finance), 1974
B.A., University of South Florida, 1968
FENDER, RICKARD C. .................................. Budget Officer (Budget Office), 1968
B.A., University of South Florida, 1969
FENDERSON, KENDRICK E., JR. .................................. Assistant Professor (Mass Communications), 1973
B.S.; M.S., Boston University, 1951
FERGUSON, DONALD G. .................................. Professor (Education), 1970
B.S.; M.A.; Ed., Western Reserve University, 1956
FERNANDEZ, J. .................................. Professor (Chemistry), 1960
B.S.; Ch., M.S.; Ph.D., Florida, 1954
FERNANDEZ, JUAN .................................. Instructor (Advising, Student Affairs), 1974 (Part time)
B.A., University of South Florida, 1969
FERNELIUS, W. CONARD .................................. Distinguished Professor (Chemistry), 1970
B.A., M.A., Ph.D., D.Sc., Stanford University, 1928
FERRANDINO, MARILYN M. .................................. Interim Instructor (Women's Studies Program), 1973
B.A.; M.A., State University of New York at Buffalo, 1971
FERRIS, MARY W. .................................. Associate University Reference Librarian (Part time) (Libraries), 1971, St. Petersburg Campus
B.A.; M.L.S., Emory University, 1956
FIGG, ROBERT M., III .................................. Associate Professor (English), 1965
B.S.; M.A., Ph.D., Florida State University, 1963
FILIPOWSKY, RICHARD F. J. .................................. Professor (Electrical Engineering), 1970
B.E.E., M.E.E., D.Sc., Technical University, Vienna, 1955, P.E.
FINNEY, ROY P. .................................. Professor (Surgery), 1974 (Part time)
M.D., Medical University of South Carolina, 1952
FIRE, SILVIA R. .................................. Associate Professor (English), 1969
B.Ed., M.A.; Ph.D., University of Pittsburgh, 1970
FISHEL, CHARLES W. .................................. Chairperson and Professor (Medical Microbiology) Associate Dean (Pre-Clinical Affairs), 1970
B.S.; M.S.; Ph.D., University of Chicago, 1955
FISHER, ARTHUR W., JR. .................................. Lecturer (Accounting and Law), 1970
FISHER, MARGARET B. .................................. Dean (Student Affairs), Adjunct Professor (Interdisciplinary), 1960
B.A., M.A., Ph.D., Columbia University, 1953
FITZPATRICK, DAVID F. .................................. Assistant Professor (Pharmacology), 1972
B.S.; M.A.; Ph.D., Vanderbilt University, 1969
FLEMMING, PHYLLIS L. .................................. Assistant Professor (Sociology), 1972
B.S., M.S., Ph.D., Pennsylvania State University, 1969
FLETCHER, SUZY H. .................................. Assistant Professor (Nursing), 1973
B.S.N.; M.S.N., Vanderbilt University, 1971
FLYNN, ROBERT W. .................................. Associate Professor (Physics), 1968
B.S.; S.M., Sc.D., Massachusetts Institute of Technology, 1968
FOLLMAN, JOHN C. .................................. Acting Chairperson and Professor (Education), 1966
M.A.; Ph.D., Indiana University, 1969
FORD, EDWARD J., JR. .................................. Assistant Professor (Economics), 1971
B.A.; M.A.; Ph.D., Boston College, 1971
FORSETH, SONIA D. .................................. Chairperson (Education), 1971
St. Petersburg Campus
B.A., M.A., University of Minnesota, 1970
FORSTON, FRANCIS G. .................................. Systems Coordinator (Computer Research Center), 1965
FOSTER, ROBERT L., JR. .................................. Associate Professor (Psychology), 1969, St. Petersburg Campus
B.A., M.A., Ph.D., University of Tennessee, 1963
FRANCIS, ROY G. .................................. Professor/Chairperson (Sociology), 1969
B.A.; M.A.; Ph.D., University of Wisconsin, 1950
FRANQUES, JOHN T. .................................. Assistant Professor (Engineering), 1971
B.S., M.S., Ph.D., Louisiana State University, 1971, P.E.
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GILMORE, ALDEN S. ............ Associate Professor (Music Arts), 1961
B.A., M.E.A., Florida State University, 1957

GILMORE, ROBERT .......... Associate Professor (Physics), 1971
B.S., Ph.D., Massachusetts Institute of Technology, 1967

GILLES, HARVEY ............. Associate Professor (Systems Engineering), 1969
B.S., M.S., D.Sc., Washington University, 1965

GLIDDEN, EMILE G. .......... Associate Professor (Foreign Languages), 1967
M.A., Ph.D., University of Illinois, 1966

GLOVER, KOFI R. A. . . . . . . . . . . . . . . . . Assistant Professor (AfrO-American Studies), 1972
B.A.; M.A., University of Iowa, 1967

GOFF, BARBARA A. ............ Interim Instructor (English), 1973
B.A.; M.A., University of Denver, 1966

GOFORTH, FRANCES S. ....... Associate Professor (Education), 1967
B.S., M.Ed.; Ed.D., Indiana University, 1966

GOLDING, LOIS A. ............ Associate Professor (Music Arts), 1962

GOLDFMAN, ALLAN L. ........ Assistant 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

GOMEZ, OSBORNE L. ............ University Librarian (Extension Library), 1965, St. Petersburg Campus
A.B., M.A., M.S.L.S., Florida State University, 1969

GONZALEZ, JUAN O. ............ Associate Professor (Energy Conversion Systems), 1965
S., M.S., Virginia Polytechnic Institute, 1950

GOODMAN, ADOLPH W. ....... Distinguished Professor (Mathematics), 1964
B.S., M.A., Ph.D., Columbia University, 1947

GORDON, CHARLES A. ....... Lecturer and Director (Education), 1968
B.A.; M.A., Kansas State Teachers College, 1959

GORDON, HORACE E., JR. .... Lecturer (Electrical Engineering), 1973
B.E.E., University of Florida, 1964

GOULD, JAMES A. ............ Chairperson and Professor (Philosophy), 1964
B.S., M.A., Ph.D., University of Arizona, 1962

GOWEN, HOWARD B. ........... Associate Professor—Acting Chairperson (Humanities), 1963
Ph.B.; B.S.; M.A.; Ph.D., Florida State University, 1961

GRAHAM, ARTHUR D. ....... Acting Chairperson and Professor (Radiology), 1972 (Part time)
M.D., University of Colorado, 1958, D.A.B.R.

GRANGE, ROGER T., JR. ...... Professor (Anthropology), 1964
Ph.B., M.A., Ph.D., University of Arizona, 1962

GRASSO, ROBERT J. ......... Assistant Professor (Medical Microbiology), 1971
B.S., Ph.D., State University of New York at Buffalo, 1968

GREATELL, LEON C., JR. .... Assistant Professor (Education), 1970
B.S., M.S., Ed.D., Syracuse University, 1969

GRECH, DONALD K. .......... Lecturer (Business), 1972 (Part time), St. Petersburg Campus
B.S., University of New Hampshire, 1951

GRIFFITH, JOHN E. ......... Chairperson and Professor (SMF-Engineering), 1964
B.S., M.S., Ph.D., Pennsylvania State University, 1955

GRILLOT, ANNE M. .......... Instructor (Nursing), 1974 (Part time)
R.N.; B.S., Oregon State University, 1971

GRIMES, MAXINE M. ......... University Librarian (Medical Center Library), 1972
B.A.; B.S., Louisiana State University, 1947

GRINDEY, ROBERT J. ....... Associate Professor (Physical Education; Student Affairs), Assistant Director (Intercollegiate Athletics), 1964
B.A.; M.S., University of New Mexico, 1961

GRISCL, WALTER E. ............ Associate Professor (Mass Communications), 1967
B.S., M.A., University of Florida, 1959

FRAZE, HENRY S. ............ Lecturer (Engineering), 1971
B.S.E.; M.S.E., Pennsylvania State University, 1965

FRIEND, TOM D. .......... Associate Professor (Education), 1968

FRESHOUR, FRANK W. ....... Assistant Professor (Education), 1969
B.S.; M.Ed.; Ed.D., University of Florida, 1970

FRIEDL, 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, 1938

FUSE, WILLIAM G., JR. .... Assistant Professor (Mass Communication), 1972
B.A.; M.S., University of Illinois, 1964

FUSE, ROBERT H. ......... Professor (Geography), 1960
A.B.: M.A.; Ph.D., Louisiana State University, 1958

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B.S.C., M.B.A., Ph.D., Ohio State University, 1964

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GALLAHER, EDWARD E. .... Research Associate (Marine Science), 1973, St. Petersburg Campus
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B.M.; M.M.A., Yale University, 1972

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A.B.; M.D., Johns Hopkins School of Medicine, 1966

GARRETT, SAMUEL J. ....... Associate Professor (Electrical Engineering), 1967
B.E.E.; M.S.E.E., Sc.D., University of Pittsburgh, 1963

GARRETT, WILLIAM .......... Associate Professor (English), 1960
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GARRETT, WILLIAM R. .... Lecturer (Accounting), 1974 (Part time), Ft. Myers Campus
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GATES, JENKIN ............... Associate Professor (Education), 1966
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GEIGER, O. GLENN .......... Associate Professor (Education), 1969
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GEIS, THOMAS S. ............ Assistant Professor (Interdisciplinary Social Science), 1970
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GELINAS, ROBERT W. ....... Associate Professor (Visual Arts), 1963

GESSMAN, ALBERT M. ....... Chairperson and Professor (Ancient Studies), 1961
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GIBSON, WILLIAM J. ....... Head Basketball Coach (Physical Education), 1974
B.S., M.Ed., Pennsylvania State University, 1954

GILMORE, ALDEN S. ......... Associate Professor (Interdisciplinary Social Science), 1961
B.A., M.A., Florida State University, 1957
GROSS, F. I. W. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . }
FACULTY AND ADMINISTRATIVE STAFF 185

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B.A.; Ph.D., University of Miami, Florida, 1970  

Hewitt, Charles F.  . . . .  Assistant to the Vice President  
(Student Affairs), 1972  

Hickman, Jack W.  . . . .  Associate Professor/Associate Dean  
(Internal Medicine), 1970  
B.S., M.D., Indiana University, 1955  

Higbee, Richard H.  . . . .  Assistant Dean (Education), 1974  
B.A., University of South Florida, 1973  

Hill, Raymond  . . . .  Assistant Professor (Education), 1971  
B.S.; M.S.; University of Alabama, 1967  

Hindle, Will M.  . . . .  Associate Professor (Visual Arts), 1972  

Hirschberg, Edgar W.  . . . .  Professor (English), 1960  
B.A., M.A., Ph.D., Yale University, 1951  

Hochberg, Charles J.  . . .  Assistant Professor  
(Obstetrics and Gynecology), 1972  
B.S.; M.D., The Chicago Medical School, 1967  

Hodges, James A.  . . .  Lecturer (Speech Communication),  
1973 (Part time)  
B.A.; M.A.; Ph.D., University of Chicago, 1970  

Hoffman, Hubert A.  . . .  Associate Professor and Director  
(Education), 1977  
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  

Holcomb, Dan L.  . . .  Assistant Professor (Physical Education;  
Student Affairs), Assistant Director (Intercollegiate  
Athletics; Student Affairs), 1965  
B.Ed., M.S., Florida State University, 1962  

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B.A.; M.Ed., Florida State University, 1961  

Hollett, Kenneth J.  . . .  Director  
(University Physical Planning), 1974  
B.A., Stanford University, 1954  

Holley, John W.  . . .  Assistant Professor (Sociology), 1971  
B.A., M.S., Ph.D., Florida State University, 1971  

Holmes, Roland C.  . . .  Instructor (Geography), 1974  
St. Petersburg Campus  
A.B., M.S., Duke University, 1961  

Holt, Thomas M.  . . .  Instructor (Anatomy), 1974  
B.S.; M.S.; Ph.D., Louisiana State University, 1974  

Honker, H. Andrew  . . .  Assistant Professor  
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B.S., M.S., University of Illinois, 1965  

Hopkins, Thomas L.  . . .  Associate Professor  
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Hopkins, Alan T.  . . .  Interim Instructor (Music), 1972  
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B.A.; M.A.; Ph.D., University of California, San Diego, 1974  

Horrigan, Frederick J.  . . .  Associate Professor  
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B.A., M.A., Ph.D., Indiana University, 1958  

Horsman, David A. E.  . . .  Assistant Professor  
(Mass Communication), 1970  
B.A.; M.A., Ph.D., New York University, 1970  

Houghton, Lea M.  . . .  Assistant Administrator  
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Houk, C. Wesley  . . .  Coordinator of Advising and  
Graduate Studies and Associate Professor (Fine Arts), 1961  
B.A.; M.F.A., University of Iowa, 1950  

Howell, Joe A.  . . .  Vice President (Student Affairs and  
University Development), Professor (Education), 1971  

Howell, Larry G.  . . .  Assistant Professor (Chemistry), 1970  
B.A.; Ph.D., Duke University, 1968  

Huang, Wen H.  . . .  Associate Professor (Geology), 1970  
B.S.; M.A.; Ph.D., University of Missouri, 1970  

Hubbard, Chlo G.  . . .  Systems Coordinator  
(Computer Research Center), 1967  
B.S., Auburn University, 1956  

Hubbard, Conrad E.  . . .  Assistant Professor (Accounting), 1962  
B.S., M.B.A., University of Kentucky, 1957, C.P.A.  

Hug, William G.  . . .  Chairperson and Professor (Dance), 1969  
B.S., M.A., University of Illinois, 1960  

Humm, Harold J.  . . .  Professor (Marine Science), 1966,  
St. Petersburg Campus  
B.S.; M.S., Ph.D., Duke University, 1945  

Hunnicutt, Clarence W.  . . .  Professor (Education), 1967  
B.S., M.A., Ed.D., Stanford University, 1942  

Hunter, James H., Jr.  . . .  Professor (Astronomy), 1970  
B.A., Ph.D., University of California, Los Angeles, 1964  

Hurd, Robert L.  . . .  Assistant Dean (Education), 1971, St. Petersburg Campus  
B.A., M.B.A., University of South Florida, 1968, C.P.A.  

Hurwitz, Harry L.  . . .  Assistant Professor (Visual Arts), 1973  
B.A., M.A., New York University, 1963  

Ierardo, Domenick  . . .  Assistant Professor  
(Foreign Languages), 1966  
B.A.; M.A.; Ph.D., New York University, 1974  

Iles, Mallory W.  . . .  Assistant Professor  
(Speech Communication), 1972  
B.A.; M.A.; Ph.D., University of Florida, 1972  

Ingalls, Robert P.  . . .  Assistant Professor (History), 1974  
B.A.; M.A., Ph.D., Columbia University, 1973  

Ingram, James M.  . . .  Chairperson and Professor  
(Obstetrics and Gynecology), 1971  
M.D., Duke University, 1943  

Iorio, John J.  . . .  Professor (English), 1963  
B.A., M.A., Columbia University, 1951  

Ishak, Samuel M.  . . .  Associate Professor (Mathematics), 1968  
M.Sc.; Ph.D., Indiana University, 1965  

Isbell, Robert G.  . . .  Associate Professor (Radiology), 1973 (Part time)  
A.B.; M.D., University of Michigan Medical School, 1964  

Jackson, P. Diane  . . .  Counselor/Advisor  
(Cooperative Education and Placement), 1974  
B.A., Indiana University, 1973  

Jacobsen, Perry H.  . . .  Instructor (Accounting), 1973  
B.S.; M.B.A., Florida State University, 1971, C.P.A.  

Jaeger, Richard  . . .  Professor (Education), 1971  
B.A., M.S., Ph.D., Stanford University, 1970  

Jaeschke, Donald P.  . . .  Associate Professor (Education), 1963  
B.S.; M.S., Ph.D., Florida State University, 1971  

Jain, Vijay K.  . . .  Associate Professor  
(Industrial Systems 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  

Jennings, Ann S.  . . .  Lecturer  
(Florida Center for the Arts), 1972  
B.A.; M.A., Ph.D., Florida State University, 1973  

Jennings, Vance S.  . . .  Chairperson and  
Associate Professor (Music Arts), 1967  
B.M., M.Ed., D.M.E., University of Oklahoma, 1972  

Jensen, J. Keith  . . .  Assistant Professor  
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B.S., M.A.; Ph.D., University of Iowa, 1973  

Jenkins, Paula D.  . . .  Research Associate  
(SMF—Engineering), 1974 (Part time)  
B.A., University of South Florida, 1967  

Jett, George R., Jr.  . . .  Assistant to Vice President  
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B.A., University of South Florida, 1973  

Johanningmeir, Erwin V.  . . .  Associate Professor—Director  
(Education), 1967  
A.B., M.A.Ed., Ph.D., University of Illinois, 1967
JONES, Dale A. .... Assistant Professor (Finance), 1970
JONES, Douglas M. A. .... Assistant Administrator
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B.A.: M.A., University of Illinois, 1972
JONES, Doyle P. .... Assistant Professor (Sociology), 1969
B.A., M.A., Ph.D., University of Illinois, 1969
JORDAN, Frank F., Jr. .... Assistant Professor (Education), 1971
B.A.; M.A.; Ed.D., Rutgers University, 1971
JORDAN, Gordon A. .... Professor (Music Arts), 1963
B.S. M.M., Ph.D., Michigan State University, 1963
JORDAN, G. Orville .... Professor-Director (Education), 1972
B.S.; Ed.M., Ed.D., University of Illinois, 1950
JOHNSON, Roger E. .... Associate Professor (Education), 1967
B.S., M.A., Ph.D., University of Minnesota, 1967
JOHNSON, Thomas E., Jr. .... Associate Professor
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JOHNSON, Milton D., Jr. .... Assistant Professor
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B.A.; M.A., Ph.D., Vanderbilt University, 1965
JORDAN, David C. .... Assistant Administrator (President for Academic Affairs), 1968
B.A., M.A., University of South Florida, 1966
JREISAT, Jamil E. .... Associate Professor (Political Science), 1968
B.S.; M.P.A., Ph.D., University of Pittsburgh, 1965
JUERGENS, Hans .... Professor (Humanities), 1961
B.A.; Ph.D., Johns Hopkins University, 1951, L.H.D.
JUUCH, George R., Jr. .... Associate Professor (Chemistry), 1966
B.S.Ch.; M.S.; Ph.D., University of California, San Diego, 1965
JUURGENSEN, Louis C. .... Chairperson and Professor
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JURISTO, Julio .... Lecturer (Visual Arts), 1971
Master Printer, Tamarind Lithography Workshops, 1972
KAHN, Stephen C. .... Assistant Professor
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KARES, Peter .... Associate Professor (Finance), 1969
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KARL, Herbert G. .... Associate Professor (Education), 1971
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KARLINS, Marvin .... Professor (Management), 1974
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KARNS, Lee T. .... Associate Professor (Education), 1966
B.S., M.A.; M.Ed., Ed.D., University of Oklahoma, 1966
KARP, Joseph P. .... Assistant Director
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B.S., M.A., University of South Florida, 1973
KARTSITOS ATHANASSIOG .... Associate Professor (Mathematics), 1971
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KASAK, E. Lee .... Speech and Hearing Clinician, Lecturer (Communciation), 1967
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KEEGER, Harold J. .... Professor (Education), 1969
B.S., M.A., Ed.D., Cornell University, 1956
KEENE, T. Wayne .... Associate Professor (Education), 1963
KEETH, John E. .... University Acquisition Librarian
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B.A., M.L.S., Louisiana State University, 1969
KEITZ, Francie B. .... Associate Professor (Education), 1966
B.A., M.S., Ph.D., University of Iowa, 1963
KEITH, Robert M. .... Associate Professor (Accounting), 1969
KELLEY, Anne E. .... Associate Professor (Political Science), 1963
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KELLEY, John E. .... Associate Professor
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KENDALL, Harry W. .... Professor (Physics), 1960
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KENNERSON, David R. .... Assistant Professor (Management), 1966, St. Petersburg Campus
A.B., M.C.S., Dartmouth College, 1938
KENNEDY, Kay B. .... Associate Professor (Economics), 1967
B.A., M.A., Ph.D., Indiana University, 1961
KERN, Allen F. .... Instructor (Education), 1974
B.A.: M.S.T.; M.S.Ed., Florida State University, 1971
KERN, Robert L. .... Associate Professor
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B.A.; M.A., Syracuse University, 1969
KESSLER, Evelyn S. .... Associate Professor (Anthropology), 1967
B.S.; M.A., Ph.D., Columbia University, 1970
KETCHERSID, 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.A., University of Illinois, 1970
KIEFER, H. Christian .... Professor (English), 1960
A.B.; M.A., Ph.D., Columbia University, 1961
KING, Harry A. .... Assistant Professor (Geography), 1974
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KIMMEL, Ellen B. .... Associate Professor (Education), 1968
B.A.; M.A., Ph.D., University of Florida, 1965
KIMMEL, Herbert D. .... Professor (Psychology), 1968
B.S., M.A., Ph.D., University of Southern California, 1938
KINCAD, George H. .... Associate Professor (Education), 1967
A.B., M.R.C., Ed.D., University of Florida, 1965
KINDE, Stewart W. .... Associate Professor and Chairperson
(Communication), 1965
B.S., M.A., Ph.D., Michigan State University, 1972
KING, Arline T. .... Assistant University Catalog Librarian
(Libraries), 1964
B.A., M.A., M.S.L.S., Florida State University, 1970
KING, Charles E. .... Associate Professor (Biology), 1972
A.B.; M.S., Ph.D., University of Washington, 1965
KING, Raymond C. .... Director (University Housing), 1963
B.L., Lecturer (Student Affairs), 1963
B.S.; M.A., Columbia University, 1961, Prof. Diploma
KVETZ, Robert S. .... Counselor/Advisor
(University Studies, Student Affairs), 1973
A.B.; M.S., Miami University, Ohio, 1971
KLEG, Milton .... Associate Professor (Education), 1970
A.B., M.A., Ed.D., University of Georgia, 1970
MECHAM, ELDON J. ......................... Assistant Professor (Theatre Arts), 1967


MELANDT, JOHN C. .................. Business Manager (Medical Center), 1964

B.S., Florida Southern College, 1959

MELLISH, G. HARTLEY ............. Associate Professor—Associate Dean (Business Administration), 1965

B.A., Ph.D., University of Virginia, 1965

MENARDIERE, CHRISTIAN DE LA ...... Associate Professor (Foreign Languages), 1963

B.A., M.A., Ph.D., University of Paris (Sorbomme), 1967

MENNINGER, RICHARD P. .......... Assistant Professor (Physiology), 1971

B.S.; Ph.D., University of Kentucky, 1971

MERICA, JOHN A. .................. Assistant Professor (Education), 1968

B.A., M.S., Ph.D., Syracuse University, 1971

MERNER, DIANE T. .................. Associate Professor (Biology), 1967

B.S.; M.A., Ph.D., Duke University, 1963

MERRIAM Harland C. ............... Professor (Education), 1969

B.S.; M.Ed., Ed.D., Harvard University, 1959

MERRIAM, KEMPER W. .......... Professor (Accounting), 1967

B.B.A., M.B.A.; Ph.D., University of Texas, 1967, C.P.A.

METZ, MARGIE E. .......... Instructor ( Afro-American Studies), 1973

B.A.; M.A., Atlanta University, 1973

MEYER, HERBERT H. .......... Professor-Director (Industrial / Organizational Psychology), 1973

B.S.; M.S., M.A., Ph.D., University of Michigan, 1949

MEYER, RICHARD L. .......... Associate Professor (Finance), 1970

B.S., M.B.A., Ph.D., University of Wisconsin, 1969

MEYERREICHS, ANDREW J. ....... Professor (Biology), 1961

A.B.; Ph.D., Harvard University, 1958

MICHAIL, JAMES D. ............. Assistant University Librarian (Libraries), 1974

B.S.; M.S.L.S., Florida State University, 1974

MICHELIDES, GEORGE J. .......... Assistant Professor (Mathematics), 1961

B.S., M.S.; Ph.D., University of Georgia, 1974

MICHELIDES, THERESA B. .... Instructor (Biology), 1971

B.S., Lamar State College, 1960

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B.S.; Ed.; M.S.Ed., Bowling Green State University, Ohio, 1965

MILANI, VIRGIL L. .......... Professor (Foreign Languages), 1963

B.S.; M.A., Ph.D., Catholic University of America, 1962

MILLER, GEORGE H. .......... Lecturer-Director (Southeast Center Cooperative Education Grant), 1960

B.J.; M.S.J., University of Illinois, 1948

MILLER, MARGARET A. .......... Assistant Professor (Visual Arts), 1970

B.A.; M.A., University of Hawaii, 1970

MILLER, ROBERT L. .......... Lecturer (Industrial Systems Engineering), 1971

B.S., M.S.E., University of South Florida, 1973

MITCHELL, RICHARD W. ....... Associate Professor ( Physics), 1962

B.S.; M.S., Ph.D., Texas A&M University, 1960

MITCHELL, WILLIAM G. .......... Director Instructional Services (Educational Resources), 1974

B.A.; M.A.; Ph.D., Michigan State University, 1970

MIZELLE, DARY J. .......... Assistant Professor (Music Arts), 1973

B.A.; M.A., University of California at Davis, 1967

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B.M., Oberlin College Conservatory of Music, 1963

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MOORE, HARVEY ........... Assistant Professor (Sociology), 1974

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MOORE, JACK B. ............... Professor (English), 1962

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MOORE, JUDITH C. ............ Lecturer (Education), 1973

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B.A.; M.A., Ph.D., University of Minnesota, 1971

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MORRIS, WILLIAM E. .......... Professor (English), 1964

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MORSE, YVONNE L. ............ Assistant University Librarian (Medical Library), 1974

B.A., M.A.L.S., University of South Florida, 1974

MOSS, RICHARD L. .......... Instructor (Economics), 1974

B.A.; M.A., University of Delaware, 1971

MOTTO, ANNA L. .......... Chairperson and Professor (Foreign Languages), 1973

B.A.; M.A.; Ph.D., University of North Carolina, 1953

MOURER, STEPHEN A. .......... Associate Professor (Psychiatry), 1967 (Part time)

B.A.; M.A.; Ph.D., Southern Illinois University, 1966

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B.E.; M.Sc., Ohio State University, 1949, P.E.

NELSON, HARVEY W. .......... Assistant Professor (Interdisciplinary Social Science), 1972

B.A.; M.A.; Ph.D., George Washington University, 1972

NELSON, CARNOT E. .......... Associate Professor (Psychology), 1971

B.S.; Ph.D., Columbia University, 1966

NELSON, DOUGLAS L. .......... Professor (Psychology), 1967

B.A.; M.A., Ph.D., University of Wisconsin, 1967

NELSON, GID E., JR. ........... Professor (Biology), 1960

A.B.; M.S., Ph.D., University of Florida, 1964

NELSON, LOUIS R. .......... Director (Vivarium)

Assistant Professor (Pathology), 1971

B.S.; M.S.; D.V.M., Auburn University, 1955

NELSON, WANDA D. .......... Research Associate (Institutional Studies), 1973

B.A., University of South Florida, 1974

NESMAN, EDGAR G. .......... Associate Professor (Sociology), 1968

B.S., M.S.; Ph.D., University of Florida, 1969

NESMAN, MORJORIE P. .......... Counselor/Advisor (Education), 1969 (Part time)

B.S., Michigan State University, 1952

NESS, GENE C. .......... Assistant Professor (Biochemistry), 1974

B.S.; Ph.D., University of North Dakota, 1971

NESS, THOMAS E. .......... Associate Professor—Acting Chairperson (Marketing), 1971

A.B.; B.S.E.; M.S.I.; Ph.D., Purdue University, 1968

NEUGAARD, EDWARD J. .......... Professor (Foreign Languages), 1964

B.A.; M.A., Ph.D., University of North Carolina, 1964
190 FACULTY AND ADMINISTRATIVE STAFF

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B.S., M.Ed.; Ed.D., University of Florida, 1961
NEWCOMBE, P. JUDSON ................ Associate Professor (Education), 1970
B.A.; M.A., Ph.D., Northwestern University, 1963
NICHOLAS, NICHOLAS L. .................. Assistant Professor (Marketing), 1969
B.A.; M.B.A., University of California, Berkeley, 1964
NICKELS, BRADLEY J. .................. Assistant Professor (Visual Arts), 1970
B.D.; M.A., Ph.D., University of Indiana, 1966
NICOLOSI, GREGORY R. .................. Assistant Professor (Physiology), 1972
B.S.; Ph.D., Ohio State University, 1971
NIENHAUS, HARRY A. .................. Assistant Professor (Electrical Engineering), 1967
B.S., M.S., University of St. Louis, 1964
NORD, HEINZ J. .................. Assistant Professor (Internal Medicine), 1973
M.D., University of Frankfurt and Freiburg Medical Schools, 1964
NORTHCUITT, TRAVIS J., JR. .............. Professor and Dean (Social and Behavioral Sciences), 1972
B.S., M.S., Ph.D., University of North Carolina, 1959
OBER, RICHARD L. .................. Professor (Education), 1969
B.S.; M.A.T.; Ph.D., Ohio State University, 1966
OBERHOFER, SIGNE W. .................. Assistant University Librarian (Libraries), 1974 (Part time), 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
O’DONNELL, EDWARD .................. Assistant Professor (Geology), 1968
B.S.; M.S., Ph.D., University of Cincinnati, 1967
O’DONNELL, MAURICE E. .................. Associate Professor (Political Science), 1966
B.S.; M.S., Ph.D., University of Wisconsin, 1954
OEISCHER, JACK W. .................. Instructor (Marketing), 1968
B.S.; M.A., University of South Florida, 1968
OHAEBULAM, FESTUS U. .................. Associate Professor (Afro-American Studies), 1972
B.A.; M.A.; Ph.D., University of Denver, 1967
O’HARA, ROBERT C. .................. Professor (Linguistics), 1961
B.A., M.A., University of Louisville, 1953
OLDER, JAY J. .................. Assistant Professor (Ophthalmology), 1974 (Part time)
A.B.; M.D., St. John’s University, 1966
OLESON, NORMAN L. .................. Chairperson and Professor (Physics), 1969
B.S., M.S., Ph.D., University of Michigan, 1940
OLINE, LARRY W. .................. Associate Professor (SMF-Engineering), 1967
B.A.; B.S.; M.S.; Ph.D., Georgia Institute of Technology, 1968
OLSEN, EUGENE D. .................. Professor (Biochemistry), 1964
B.S., Ph.D., University of Wisconsin, 1960
OLSON, JOHN A. .................. Assistant Professor (Education), 1970
B.A.; M.A., Ph.D., University of Oregon, 1970
ORLOSKY, DONALD E. .................. Professor (Education), 1969
A.B.; M.S., Ed.D., Indiana University, 1969
Orr, MAss T. .................. Associate Professor and Chairperson (Interdisciplinary Social Science), 1966
A.B., Ph.D., University of North Carolina, 1954
ORTWINE, PHILLIP G. .................. Assistant Professor (Physics; Student Affairs), 1966
A.B.; M.S., Indiana University, 1948
O’SULLIVAN, PETER B. .................. Associate Professor (Theatre Arts), 1963
B.A., M.A., University of North Carolina, 1957
OWEN, TERENCE C. .................. Professor-Chairperson (Chemistry), 1964
B.Sc., Ph.D., University of Manchester, England, 1964
OWEN, WILLIAM D. .................. Professor (Music Arts), 1964
B.M.; M.M., North Texas State University, 1960
PADGETT, KENNETH L. ............. Interim Instructor (Accounting), 1971
B.A.: M.A.C., University of South Florida, 1973
PAGE, JOHN N. .......... Instructor (Counseling Center; Student Affairs), 1974
B.A.; M.A., University of South Florida, 1974
PALM, JOHN W. .................. Assistant Professor (Interdisciplinary Social Science), 1970
PALMER, CECIL E. .................. Assistant Professor (Geography), 1969
B.S.; M.A., University of Georgia, 1960
PALMER, JAMES N. .................. Assistant Professor (English), 1966
B.A.; M.A., University of North Carolina, 1938
PALMER, ROBERT E., SR. ........ Associate Professor (Education), 1970
B.S.; M.S., Ph.D., Florida State University, 1969
PALLMER, STEVEN L. ........ Research Associate (Marine Science), 1973, St. Petersburg Campus
B.A., University of South Florida, 1971
PANTHER, EDWARD E. ........ Associate Professor (Education), 1969
B.A., M.S., Ed.D., State University of New York at Buffalo, 1969
PAPPEL, GEORGE .................. Chairperson and 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
PARDO, SARAH J. .................. Instructor (Accounting), 1971
St. Petersburg Campus
B.A.; M.B.A., University of Florida, 1972, C.P.A.
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
PARR, DENNIS H. ........ Associate Professor (SMF-Engineering), 1970
B.S.; M.S., Sc.D., New Mexico State University, 1968, P.E.
PARRADO, ADRIAN A. ........ Clinical Psychologist and Adjunct Assistant Professor (Counseling Center; Student Affairs), 1969
B.S.; M.A., University of South Florida, 1968
PARRISH, JAMES A., JR. ........ Professor (English), 1960
B.S.; M.A., Ph.D., Florida State University, 1955
PARTNEY, GERALD D. ........ Assistant Professor (Speech Communication), 1970
B.A., Wake Forest University, 1966
PATOUILLET, RAYMOND A. ........ Assistant Professor (Education), 1967
M.S.; M.A., Ed.D., Columbia University, 1951
PATTERSON, GERALD E. ........ Assistant Professor (Education), 1971
B.S.; M.A., Ph.D., Ohio State University, 1970
PATTERSON, MICHAEL H. ........ University Planning Consultant (Facilities Planning), 1973
B.A., University of Florida, 1969
PATTERSON, RONALD J. ........ Assistant Professor (Geology), 1973
B.Sc.; Ph.D., Princeton University, 1972
PAULSON, DARBYL G. ........ Instructor (Political Science), 1974
St. Petersburg Campus
B.A.; M.S., Florida State University, 1971
PAYNE, CHARLES E. ........ Associate Professor (Engineering Technology), 1965, St. Petersburg Campus
B.I.E., M.S.E., University of Florida, 1965, P.E.
PEARCEY, WALTER E., JR. .......... Instructor (Education), 1972
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
PEREZ, LOUIS A., JR. .......... Associate Professor (History), 1970
B.A.; M.A.; Ph.D., University of New Mexico, 1970
PERSKY, DAVID W. ........ Counselor to Students and Lecturer (Student Affairs), 1973
B.A.; M.S., Miami University, Ohio, 1973
PETERSON, DONOVAN D. ........ Associate Professor (Education), 1968
B.S.; M.A.; Ph.D., University of Pittsburgh, 1970
PEVICK, STEPHEN H. ............... Instructor (Visual Arts), 1972
B.A.; M.F.A., Washington University, 1972

POST, H. PHILIP .... Associate Dean and Associate Professor
(Education), 1967

PHILLIPS, ERNEST R. ....... Assistant Professor (Education), 1971
B.S.; M.A.; Ph.D., Purdue University, 1971

PHILLIPS, STEVE, JR. ....... Associate Professor (Industrial Systems), 1974
B.S.M.E.; M.B.A.; M.S.; Ph.D., University of Illinois, 1974

PICAZA, JORGE A. ............ Associate Professor (Surgery), 1974 (Part time)
B.S.; B.S.; M.S.; M.D., Havana University Medical School, 1943

PIERCE, CARMEL J. .......... Lecturer and Advisor (Education), 1970 (Part time), St. Petersburg Campus
B.S., University of South Carolina, 1945

PINKARD, CALVIN M. ....... Director and Associate Professor
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A.B.; B.D.; M.A., Ph.D., University of Florida, 1959

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B.A.; M.A., Ph.D., University of Florida, 1955

POLLET, ROBERT J. ............ Assistant Professor (Medicine), 1974 (Part time)
A.B.; Ph.D., M.D., New York University School of Medicine, 1969

POLSON, JAMES B. ....... Assistant Professor (Pharmacology), 1971
B.A.; M.S.; Ph.D., University of Missouri, 1968

POPE, JAMES S. .............. Lecturer (Education), 1966
B.A.; M.A., University of South Florida, 1967

POPOVICH, HELEN H. ......... Associate Professor and Assistant to the Chairperson (English), 1965
B.A.; M.A.; Ph.D., University of Kansas, 1965

POPOVICH, JAMES E. ....... Professor (Speech Communication), 1962
B.A.; M.A.; Ph.D., Northwestern University, 1955

POTHOVEN, KENNETH L. ........... Assistant Professor (Mathematics), 1970
A.B.; M.A.; Sp.A., Ph.D., Western Michigan University, 1969

POWELL, ROBERT W. .......... Associate Professor (Psychology), 1966
B.A.; M.A.; Ph.D., Florida State University, 1966

POWELL, RUDOLPH F. .......... Counseling Psychologist (Counseling Center, Student Affairs), 1974
B.A.; M.S., Florida State University, 1973

POWER, FRED B. .............. Associate Professor (Finance), 1964
B.S.; M.Ed., University of Florida, 1964

PRATHER, SAM W. .............. Associate Professor (Physical Education; Student Affairs), 1962
B.S.; M.S., Florida State University, 1953

PREDSKOR, EDWARD A. ........ Professor (Music Arts), 1960
B.M., M.M., Eastman School of Music, 1937

PRICE, ARTHUR L. .......... Assistant Professor (Mathematics), 1970
B.S.; M.S., Ph.D., Rensselaer Polytechnic Institute, 1970

PRICE, WILLIAM O. ............ Assistant Professor (Foreign Languages), 1963
B.A.; M.A., Ph.D., Rutgers University, 1970

PRIDE, RICHARD F. .......... Assistant Professor and Director (Education), 1969
B.A.; M.A., Columbia University, 1951

PRINCE, FRED L. .............. Assistant Professor (Education), 1971
B.S., M.S., Ed.D., University of Houston, 1971

PROCHERA, JOHN S. .......... Instructor (Political Science), 1974
B.A.; M.A., Michigan State University, 1971

PROCKOP, LEON D. ............. Professor (Internal Medicine), 1973
B.A.; M.D., University of Pennsylvania, 1959

PUGLISSI, DICK J. ............ Assistant Professor (Education), 1969
B.A.; M.A.; Ph.D., George Washington University, 1967

PULIN, ALFRED B. ............. Curator (Chemistry), 1969
B.A., Case Western Reserve University, 1940

PUNTO, VIVLA R. ............. Curator (Foreign Languages), 1967
B.A., M.A.; University of Oklahoma, 1970

PURDOM, DANIEL M. .......... Professor (Education), 1968
B.A., M.A.; Ed. University of California, Los Angeles, 1967

PURYEAR, GORDON H. ....... Associate Professor (Surgery), 1973 (Part time)
B.A., M.D., Johns Hopkins University School of Medicine, 1957

PYLE, THOMAS E. ............... Associate Professor (Marine Science), 1969, St. Petersburg Campus
B.A.; M.S.; Ph.D., Texas A & M University, 1972

RABER, DOUGLAS J. .......... Assistant Professor (Chemistry), 1970
A.B.; Ph.D., University of Michigan, 1968

RACKOW, JEANNE R. ............ Assistant Professor (Nursing), 1973
B.S., M.S., Cornell University, 1950

RADLOFF, JOHN E. .......... Instructor (Education), 1966
B.A., University of South Florida, 1965

RAGAN, WENDELL J. ............ Professor (Geology), 1960
B.S.; M.S.; Ph.D., University of Missouri, 1959

RAMEUR, HENRY M. .......... Assistant Professor (Ophthalmology), 1973 (Part time)
M.D., Medical College of South Carolina, 1964

RANDOLPH GEORGE R. ....... Instructor (Speech Communication), 1972
B.A.; M.A., University of South Florida, 1972

RAO, A. N. V. .............. Assistant Professor (Mathematics), 1972
B.S.; M.S.; M.S., Ph.D., Virginia Polytechnic Institute and State University, 1972

RATLIFF, JOHN L. ............ Associate Professor (SMF-Engineering), 1969
B.S.; M.S.; Ph.D., Ohio State University, 1969

RATTI, JOGINDAR S. .......... Professor (Mathematics), 1967
B.S.; M.S.; Ph.D., Wayne State University, 1966

RAY, JAMES D., JR. ....... Professor—Dean (Natural Science), 1959
B.S.; M.S.; Ph.D., University of Illinois, 1951

READER, WILLIE D. ....... Associate Professor (English), 1963
A.B.; M.A.; Ph.D., University of Florida, 1962

REARICK, MARTHA N. ....... Associate Professor (Music Arts), 1963
B.M., M.M., University of Michigan, 1961

REECE, DONNA Y. .......... University Documents Librarian (Libraries), 1963
B.A.; M.S.L.S., Florida State University, 1963

REED, JAMES H. .......... Associate Professor (Mathematics), 1963
B.A.; M.A., Ph.D., University of Maryland, 1969

REED, JANE G. .............. Counselor and Advisor (University Studies; Student Affairs), 1969
A.B.; M.A., University of Maryland, 1962

REILLY, J. TIM .............. Associate Professor (Criminal Justice Program), 1969
B.A.; M.A.; J.D., Stetson University, 1958

REITNER, EDWARD O. ...... Assistant Professor (Pediatrics), 1974
B.A.; M.D., University of Rochester School of Medicine, 1968

REYNOLDS, JERALD M. ...... Associate Professor (Music Arts), 1966
B.A.; M.M., University of Oregon, 1963

RHEE, JOONG G. ............. Research Associate (Education), 1974 (Part time)
B.S.E.E.; M.S.E.E., University of South Florida, 1973

RICH, THOMAS A. .......... Professor—Director (Aging Studies), 1961 (Part time)

RICHSON, JOYCE A. ........ Systems Coordinator (Computer Research Group), 1960
B.S., University of Kentucky, 1955

RICKER, LAWRENCE H. ....... Professor (Communication), 1966
B.S.; M.A., Ph.D., University of Florida, 1962

RIFKIN, STEPHEN I. ....... Assistant Professor (Medicine), 1974
A.B., M.D., University of Rochester, 1967

RIGGS, CARL D. ............ Vice President (Academic Affairs), Professor (Zoology), 1971
B.S.; M.S.; Ph.D., University of Michigan, 1953

RIMBEY, DONALD H. .......... Associate Professor (Energy Conversion Engineering), 1967
B.S.; M.S.; Ph.D., University of Illinois, 1967, P.E.

RINGNESS, CHARLES O. ...... Assistant Professor (Fine Arts), 1970
B.S., St. Cloud State College, 1968
Rinkel, Murice O. Lecturer (Marine Science), 1973
St. Petersburg Campus
B.S., Florida State University, 1959

B.A., University of North Carolina, 1973 P.E.

Robins, Donald J. Professor ( Philosophy), 1969
B.A., M.S., Florid a State University, 1969

Rogers, Donald W. Lecturer (Chemistry), 1973
B.S., Florida State University, 1974

Rogers, Donald W. Lecturer ( Marine Science), 1973
B.S., Florida State University, 1959

Rogers, Donald W. Associate Professor (Chemistry), 1960
B.S., Ph.D., University of Minnesota, 1960

Rogers, Donald W. Professor (Education), 1963
B.S., St. Petersburg Campus
B.S.; M.A.; Ed.D., Harvard University, 1960

Rodgers, Bruce A. Research Associate
(Marine Science), 1974, St. Petersburg Campus
B.A., University of South Florida, 1974

Roe, Larry G. Counselor to Students and Instructor (Student Affairs), 1973
B.A.; M.S., East Texas State University, 1973

ROGERS, BRUCE .......... Counselor to
ROGERS, DONALD ......... Associate Professor (Teacher Education), 1969
B.A., M.A., Michigan State University, 1968

Rose, Donald C. Professor (Mathematics), 1960
A.B.; M.A., University of Kentucky, 1954

Rosen, Michael P. Assistant Professor (Humanities), 1972
B.A.; M.A., University of Michigan, 1971

Ross, Bernard E. Professor (SMF-Engineering), 1965
B.S.M.E., M.S.A.E, M.S.E.M., Ph.D., University of Florida, 1964, P.E.

Ross, William T. Assistant Professor (English), 1970
B.A.; M.A., University of Virginia, 1970

Rothwell, Stuart C. Professor (Geography), 1965
B.A.; M.A., Ph.D., Syracuse University, 1964

Rubin, Steven J. Associate Professor (English), 1969
B.A.; M.A., Ph.D., University of Michigan, 1969

Rundus, Dewey B. Associate Professor (Psychology), 1972
B.S.; Ph.D., Stanford University, 1970

Ruttenberg, Daniel Associate Professor—Acting Dean
(Arts & Letters), 1964
A.B.; M.A.; Ph.D., University of Florida, 1967

Ryan, James M. Instructor (Music Arts), 1973
B.S., Yale College, 1973

Saff, Donald J. Dean and Professor (Fine Arts), 1965
B.A.; M.A.; M.F.A.; Ed.D., Columbia University, 1964

Sabell, Edward B. Associate Professor (Mathematics), 1969
B.S.; Ph.D., University of Maryland, 1968

Salter, E. George Assistant Professor (Anatomy), 1972
B.S.; M.S., Ph.D., University of Alabama, 1965

Sanders, Catherine M. Lecturer (Arts & Letters, Academic Advising), 1970
B.A., M.A., University of South Florida, 1970

Sanders, Jacqueline D. Instructor (Accounting), 1973 (Part time)
B.A., M.A., University of Denver, 1951

Sanders, Thomas E. Assistant Professor (English), 1968
B.A., M.A., University of Denver, 1951

Sanders, Arthur M. Professor (Mass Communications), 1965
B.A.; M.A.; Ph.D., University of Iowa, 1963

Sander, Jack F. Professor (Psychology), 1969
B.A.; M.S.; Ph.D., Florida State University, 1969

Sasmor, Jeanette F. Associate Professor (Nursing), 1973
B.S., M.Ed., Ed.D., Columbia University, 1974

Sasser, Emery L. Professor and Chairman
(Mass Communications), 1973
A.B., M.A.; Ph.D., University of Illinois, 1967

Saxton, Sue V. Professor (Aging Studies Program), 1963
B.S., M.S., Ph.D., Florida State University, 1963

Schaleman, Harry J., J. Associate Professor (Geography), 1969, St. Petersburg Campus
B.S.; M.A., University of Cincinnati, 1963

Schmir, Marlin E. Professor (Speech Communication), 1971
B.A.; M.A.; Ph.D., University of Kansas, 1965

Schenck, David P. Assistant Professor
(Foreign Languages), 1974
B.A.; M.A.; Ph.D., Pennsylvania State University, 1971

Scheuerle, Jane W. Lecturer (Communicology), 1971
B.A.; B.S., M.S.; M.A., University of South Florida, 1968

Scheuerle, William H. Associate Vice President
(Academic Affairs), Professor (English), 1964
B.A.; M.A.; Ph.D., Syracuse University, 1964

Schimmel, Steven D. Assistant Professor
(Biochemistry), 1974
B.A.; Ph.D., Albert Einstein College of Medicine, 1969

Schneider, Raymond J. Associate Professor
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A.B.; Ph.L.; M.A.; S.T.L.; Ph.D., University of Michigan, 1965

Schneider, Stewart W. Assistant Professor (Chemistry), 1971
B.S., M.S.; Ph.D., Indiana University, 1968

Schmitzlein, Harold N. Professor and Chairperson
(Anatomy), 1973
A.B.; M.S.; Ph.D. St. Louis University, 1954

Schneider, Harold M. Professor and Chairperson
(Management), 1973
B.A.; M.A.; Ph.D., Ohio State University, 1954

Schuldt, John C. Assistant Professor (Theatre Arts), 1971
B.A.; M.A., Michigan State University, 1971

Schwartz, Carole J. Instructor (Education), 1970
B.A.; M.S., University of Wisconsin, 1969

Schwartz, Julia L. Associate University Catalog Librarian
(Libraries), 1962
B.S.; M.S.L.S., Case Western Reserve University, 1955

Scott, Linus A. Chairperson and Professor
(Energy Conversion Engineering), 1964
B.S.M.E., M.S.E.; Ph.D., Case Institute of Technology, 1960, P.E.

Scott, Richard A. Assistant Professor (Education), 1972
B.S., M.Ed., Auburn University, 1962

Scott, Richard M. Residence Counselor/Instructor
(Housing & Food Services, Student Affairs), 1974
B.A.; M.S., Western Illinois University, 1973

Scruggs, Charles E. Associate Professor
(Foreign Languages), 1972
B.A.; M.A., Ph.D., University of Kentucky, 1968

Seligsohn, Harriet C. Associate Director
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B.S.; M.A., University of South Florida, 1969

Selman, James F. Associate Professor (Education), 1971
B.S., M.S., Ed.D., Florida State University, 1967

Seminario, Lee Anne Assistant Professor
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A.B.; M.A.; Ph.D., Florida State University, 1974

Senzik, Sharon L. Counselor to Students and Lecturer
(Student Affairs), 1972
B.S.; M.S., Indiana University, 1972

Sepanik, Mary A. Assistant Director University Library
(Libraries), 1969
B.S.; M.A.L.S., Rosary College, 1965
Sergent, Jerry E. ........................ Assistant Professor (Electrical Engineering), 1970
B.S.E.E., M.S.E.E., Ph.D., University of Cincinnati, 1970

Sever, Raymond J. ........................ Assistant Professor (Ophthalmology), 1973 (Part time)
B.A.; M.A.; M.D., University of Miami, Florida, 1960

Sexton, Irene M. .......................... Assistant Professor (Education), 1969
B.S.E.; M.Ed.; M.Adm.; Ed.S.; Ph.D., Heed University, 1974

Shannon, Robert F. ........................ Associate Professor (Economics), 1966
B.S.; M.B.A.; Ph.D., University of Illinois, 1966

Shannon, Robert L. ........................ Professor (Education), 1960
A.B.; B.S.; M.A.; Ed.D., Florida State University, 1960

Shannon, Roger ............................. Assistant Professor (Physiology), 1974
B.A.; Ph.D., University of Kentucky, 1970

Sharpe, John R. ............................ Instructor (Surgery), 1973 (Part time)
B.S.; B.S., M.D., Medical School of Virginia, 1967

Shaw, Kailie R. ............................. Assistant Professor (Psychiatry), 1974
J.M.B.; Ch.B., University of Cape Town Medical School, 1966

Shepherd, David C. ........................ Professor (Communicology), 1972
B.A.; M.A.; Ph.D., Syracuse University, 1962

Sherman, James J. .......................... Professor (Management), 1967
B.S.; J.D.; Ph.D., State University of New York at Buffalo, 1966

Sherman, Marilyn R. ........................ Interim Assistant Professor (Foreign Languages), 1974
B.S.; M.A.; Ph.D., University of Florida, 1974

Sherman, Roger T. .......................... Chairperson and Professor (Surgery), 1972
A.B.; M.D., University of Cincinnati, 1948

Shih, Airon ................................. Professor (Anthropology), 1973
B.A.; M.A.; Ph.D., Dropsie University, 1959

Shipp, Pamela S. ............................ Assistant University Librarian (Libraries), 1972
B.A.; M.Ln., Emory University, 1972

Shires, Dana L., Jr. ........................ Associate Professor (Internal Medicine), 1973
B.S.; M.D., University of Florida, 1961

Shiver, Robert H. ........................... Assistant Director (Intercollegiate Athletics, Golf Course), 1969
B.S.; University of Florida, 1961

Show, Warren .............................. Associate Professor (Economics), 1964
B.B.A., M.B.A., Ph.D., Georgia State University, 1968

Sias, Richard J. ............................ Assistant Professor (Dance), 1974
B.A., John M., Jr. .......................... Assistant Professor (Political Science), 1969
A.B.; M.P.A., Ph.D., University of Pittsburgh, 1969

Sidowski, Joseph B. ........................ Professor (Psychology), 1969
B.A.; M.S., Ph.D., University of Wisconsin, 1956

Sidransky, Hershel ......................... Chairperson and Professor (Pathology), 1972
B.S.; M.D., M.S., Tulane University Graduate School, 1938

Siegel, Jerry D. ............................ Associate Professor (Accounting), 1972
B.B.A., M.S., Ph.D., University of Iowa, 1967, C.P.A.

Siegelman, Raymond J. ..................... Instructor (Accounting), 1974
B.S.; M.B.A., Seton Hall Graduate School of Business, 1971

Silbert, Edward M. ........................ Associate Professor (History), 1965
B.S.; M.A.; Ph.D., University of Florida, 1966

Silbiger, Martin L. ........................ Associate Professor (Radiology), 1973 (Part time)
A.B.; M.D., Western Reserve University, 1962

Silver, Bruce S. ............................ Assistant Professor (Philosophy), 1971
B.A., M.A., Ph.D., University of Colorado, 1971

Silver, James W. ........................... Professor (History), 1969
A.B.; M.A.; Ph.D., Vanderbilt University, 1935

Silver, Warren S. ........................... Professor (Biology), 1970
B.S., M.S.; Ph.D., Johns Hopkins University, 1953

Silverman, Ilene B. ........................ Assistant University Librarian (Libraries), 1974
B.S.D.; A.M.L.S., University of Michigan, 1973

Silverman, Ira .............................. Assistant Professor (Criminal Justice Program), 1972
B.A.; M.A., Ph.D., Ohio State University, 1970

Silverman, Mitchelle ........................ Director and Associate Professor (Criminal Justice Program), 1968
B.A.; M.S.; Ph.D., Ohio State University, 1968

Silverman, Stuart H. ........................ Associate Professor (Education), 1970
B.B.A.; M.S., Ph.D., Yeshiva University, 1971

Simmons, A. Keith ......................... Director (University Purchasing), 1969
B.A., University of South Florida, 1968

Simon, Joseph L. .......................... Associate Professor (Biology), 1963
B.S.; M.S., Ph.D., University of New Hampshire, 1963

Singer, Philip A. ........................... Assistant Professor (Internal Medicine), 1960
A.B.; M.D., University of Rochester School of Medicine & Dentistry, 1969

Singh, Surendra P. ........................ Associate Professor (Education), 1967
B.A., M.A.S.; Ed.D., University of California, Los Angeles, 1967

Sisco, John I. .............................. Professor (Education and Speech Communication), 1968
B.S.; M.A.; Ph.D., University of Minnesota, 1966

Sisco, Dorothy D. .......................... Chairperson and Associate Professor (Education), 1966
B.S.; M.A.; Ed.D., University of California, Los Angeles, 1966

Sistrunk, Francis ......................... Professor (Psychology), 1965
B.A.; M.S.; Ph.D., University of Miami, Florida, 1963

Skelton, William H. ........................ Assistant Professor (SMF-Engineering), 1971
R.N.; B.S.; M.S., Indiana University, 1971

Slatter, Anne L. ............................ Assistant Professor (Nursing), 1974
B.B.A., M.B.A.; Ph.D., Ohio State University, 1965

Small, Leslie W. ........................... Assistant Professor (Finance), 1966
B.A.; M.A.; Ph.D., Indiana University, 1973

Small, Norman C. .......................... Professor (SMF-Engineering), 1969
B.M.E.; M.M.E.; Ph.D., Brown University, 1960

Smeach, Stephen C. ........................ Assistant Professor (Mathematics), 1973
B.A.; M.A.; Ph.D., North Carolina State University, 1973

Smith, Alice G. ............................ Professor and Director (Education), 1965
B.A.; M.S., Ed.D., Wayne State University, 1965

Smith, B. Othaniel ......................... Professor (Education), 1969
B.S.; M.A., Ph.D., Columbia University, 1937

Smith, Carlos A. ............................ Assistant Professor (Energy Conversion Engineering), 1972
B.S.; M.S., Ph.D., Louisiana State University, 1972

Smith, Charles D. .......................... Associate Professor (Education), 1967
B.S.; M.A.; Ed.D., Temple University, 1967

Smith, Charles T. .......................... Associate Professor (Finance), 1968

Smith, Donn L. .............................. Director (Medical Center), Dean (College of Medicine), Professor (Pharmacology), 1969
B.A.; M.S.; Ph.D., University of Colorado, 1958

Smith, Edwin E. ............................ Instructor (Religious Studies), 1972
B.S.; M.Div., S.T.M., Seabury-Western Theological Seminary, 1970

Smith, Elton E. ............................. Professor (English), 1961
B.S.; M.A.; B.D.; Ph.D., Syracuse University, 1961, D.D. (Hon.)

Smith, Jack L. .............................. Associate Professor (Accounting), 1969
B.B.A.; M.S., Ph.D., University of Mississippi, 1969, C.P.A.

Smith, Jeffrey B. ........................... Counselor/Advisor (University Studies, Student Affairs), 1972
B.A., M.A., University of South Florida, 1974

Smith, Jerome .............................. Assistant Professor (Anthropology), 1972
B.A.; M.A., Ph.D., University of Arizona, 1972

Smith, John L., Jr. ........................ Assistant Professor (Music), 1972
B.M.E.; M.M.E., Indiana University, 1961

Smith, Kathy L. ............................ Assistant University Librarian (Libraries), 1974
B.A.; A.M.L.S., University of Michigan, 1974

Smith, Norman V. ........................... Lecturer (Engineering), 1965
B.S.Ch.E.; M.S.E., M.Ed., University of Michigan, 1927
FACULTY AND ADMINISTRATIVE STAFF

Szentivanyi, Andor ................................. Chairperson and Professor (Pharmacology), 1970
M.D., University Medical School, Debrecen, Hungary, 1950
Taff, William H. .......................... Director of Research and Associate Professor (Sponsored Research), 1963
B.S.; M.A.; Ph.D., Stanford University, 1962
Tanner, Patricia W. ........................... Associate Professor (Education), 1969
B.A.; M.Ed.; Ph.D., Ohio State University, 1969
Tatum, Jim C. ................................. Associate Professor (Foreign Languages), 1963
B.A.; M.A., Ph.D., Tulane University, 1968
Taylor, Juanita L. .......................... Assistant Professor (Interdisciplinary Social Science), 1968
B.A.; M.A., Ohio State University, 1964
Taylor, Merrily E. ............................. University Librarian (Libraries), 1968
B.A.; M.S.L.S.; M.A., University of South Florida, 1973
Taylor, Richard N. .......................... Assistant Professor (Philosophy), 1969
B.A.; B.D.; M. Phil., Yale University, 1969
Taylor, Spafford C. .......................... Assistant Professor (Physical Education, Student Affairs), 1963
B.S.; M.A., George Peabody College, 1966
Tedesco, Thomas A. .......................... Assistant Professor (Pediatrics), 1974
B.S.; Ph.D., University of Pennsylvania, 1969
Territo, Leonard ............................... Associate Professor (Criminal Justice Program), 1972
B.A., M.A., University of South Florida, 1971
Theileker, Ernest A. .......................... Associate Professor (Mathematics), 1970
B.S.; M.S.; Ph.D., University of Chicago, 1968
Thomas, Delbert C. .......................... Systems Coordinator (Computer Research Center), 1968
B.S.; M.B.A.; Rollins College, 1967
Thomas, Shirley M. .......................... Research Associate (Institutional Studies), 1969
B.S., E.D., State University of New York—Brockport, 1951
Thompson, Edward J. .......................... Computer Systems Coordinator (Computer Research Center), 1972
B.S., Florida Atlantic University, 1971
Thompson, Kenneth W. ........................ Vice President for Administration, 1971
B.A.; M.A., University of South Florida, 1974, C.D.P.
Thompson, Sherman .......................... Assistant Professor (Education), 1966
B.A., M.A., University of South Florida, 1968
Thorstenberg, Beth S. ........................ Assistant Professor (Education), 1971
B.S.; B.L.S.; M.S.L.S., University of Illinois, 1966
Tilghman, Levyn H. III .......................... Assistant University Librarian (Libraries), 1974
B.A.; M.L.S., Atlanta University, 1974
Tillman, James S. .............................. Associate University Librarian (Medical Center Library), 1972
B.A.; M.L.S., Emory University, 1970
Tipps, George K. ............................. Assistant Professor (History), 1969
B.A., M.A.; Ph.D., University of Colorado, 1971
Tipton, Henry C. ............................. Assistant Professor (Biology), 1965
B.S., M.S., Ph.D., Mississippi State University, 1965
Tocco, Thomas S. ............................. Associate Professor (Education), 1970 (Part time)
Tomiano, Joseph M. .......................... Director, Alumni Affairs (Alumni Services), 1967
B.A.; M.A., University of South Florida, 1971
Toothman, Rex C. ............................ Associate Professor and Director (Education), 1970
A.B.; M.A., Florida Southern College, 1947
Toth, John C. ................................. Assistant Professor (Psychology), 1968
St. Petersburg Campus
B.A., M.A., Ph.D., Michigan State University, 1963
Totten, W. Fred ............................... Lecturer (Education), 1971
St. Petersburg Campus
A.B.; M.A., Ph.D., Indiana University, 1943
Towery, Gene M. ............................. Assistant Professor (Education), 1970
St. Petersburg Campus
B.S.; M.S., E.D., Florida State University, 1971
Towery, Henry H. ............................ Associate Professor (Marketing), 1970
B.S.; M.B.; D.B.A., Florida State University, 1969
Trask, Roger R. .............................. Chairperson—Professor (History), 1973
A.B.; M.A., Ph.D., Pennsylvania State University, 1959
Tremmel, William C. .......................... Director and Professor (Religious Studies), 1969
A.B.; Th.M., Th.D., Hifl School of Theology, 1950
Trice, Isaiah ................................. Assistant Professor (Physical Education, Student Affairs and Academic Affairs), 1970
B.S.; M.S., University of Colorado, 1961
Troup, Andria M. ............................ Associate Professor (Education), 1971
B.S.; M.A.; Ed. D., University of Florida, 1971
Trudeau, Walter L. .......................... Associate Professor (Internal Medicine), 1972 (Part time)
B.S. D.D.S.; B.A.; B.B.M., B.Ch., Oxford University, England, 1962
Truitt, Willis H. .............................. Associate Professor (Philosophy), 1968
A.B.; A.M., Ph.D., Boston University, 1968
Tsangadas, Byron C. P. ........................ Assistant Professor (History), 1969
A.B.; M.A., University of Michigan, 1954
Tserpes, Nicholas A. ........................ Associate Professor (Mathematics), 1968
B.A.; M.A., Ph.D., Wayne State University, 1968
Tsokos, Chris P. .............................. Professor (Mathematics), 1972
B.S., M.S.; Ph.D., University of Connecticut, 1965
Tsokos, Janice O. ............................ Assistant Professor (Chemistry), 1972
B.S., Ph.D., University of Rhode Island, 1969
Turk, Joseph E., Jr. ........................... Lecturer (Physics), 1964
B.A., University of South Florida, 1963
Tuttle, Lester W., Jr. ........................ Dean and Professor (Academic Affairs), 1964, St. Petersburg Campus
Twigg, John F. ............................... Associate Professor (Systems Engineering), 1964
B.S.; M.A., Boston University, 1949
Tyner, John L., Jr. ........................ University Physician (Student Health Center, Student Affairs), 1972 (Part time)
B.S.; M.D., Medical School of South Carolina, 1965
Unruh, Anita ................................. Assistant Professor (Education), 1968
B.S.; M.A., University of Illinois, 1959
Upchurch, Sam B. ............................ Associate Professor (Geology), 1974
A.B.; M.S., Ph.D., Northwestern University, 1970
Urichard, Albert E. .......................... Associate Professor and Director (Education), 1969
B.A.; M.S., Ph.D., Syracuse University, 1969
Uravich, Paul A. ............................. Director (University Safety and Security), 1973
B.S., M.S., Florida State University, 1970
Urbanek, Raymond A. ........................ Professor (Education), 1961
B.A.; M.S.; Ed.D., University of Kansas, 1961
Vailente, Virginia W. ........................ Lecturer (English), 1968
B.A.; M.A., Southern Methodist University, 1951
VanArsdale, William O. ........................ Assistant Reference Librarian (Libraries), 1973
B.A.; M.A., University of Denver, 1973
Vance, Beverly J. ............................ University Physician (Student Health Service, Student Affairs), 1974
B.S.; M.D., University of Louisville, 1971
Vanderbeek, Ed Stanley ........................ Associate Professor (Visual Arts), 1972
VanDercar, David H. .......................... Assistant Professor (Psychology), 1972
B.A., M.S., Ph.D., University of Miami, Florida, 1969
Vandurmen, Alice C. .......................... Interim Instructor (English), 1974 (Part time)
B.A.; M.A., Stetson University, 1968
VanNest, Roy J. .............................. Assistant Professor (History), 1971
B.A.; M.A., Ph.D., University of Wisconsin, 1972
Vanover, George W. .......................... Assistant Professor (Education), 1967
B.S.; M.S.; Ed.D., University of Tennessee, 1973
VanVoorhis, Kenneth R. ............... Associate Professor (Management), 1970
B.S., M.B.A., D.B.A., Louisiana State University, 1971

Vastine, James P. .................... Associate University Reference Librarian (Libraries), 1970
B.A., M.S.L.S., Florida State University, 1965

Vastine, Susan M. .................... University Catalog Librarian (Libraries), 1965
B.A., M.L.S., Emory University, 1965

Vega, Manuel .......................... Associate Professor (Criminal Justice Program), 1965
B.S., M.S., Ph.D., Florida State University, 1964

Verkauf, Barry S. ...................... Assistant Professor (Obstetrics/Gynecology), 1974
B.A.; M.D., Tulane University School of Medicine, 1965

Vermillion, Robert L. .................. Assistant Professor (Obstetrics/Gynecology), 1974
B.S.; M.D., Medical College of Virginia, 1968

Verney, Ethel L. ....................... Research Associate (Pathology), 1972
B.S., M.S., University of Pittsburgh, 1948

Vetter, Harold J. ...................... Professor (Criminal Justice), 1974
B.A., M.A., Ph.D., State University of New York at Buffalo, 1955

Vickrey, James F., Jr. ............... Director (University Relations), 1971
A.B., M.A., Ph.D., Florida State University, 1973

Villem, Melvin G. ...................... Assistant Professor (Education), 1971
B.A.; M.A., Ed.S., Kansas University, 1966

Walbott, Daniel R. ..................... Assistant Vice President and Lecturer (Student Affairs), 1969
B.S., J.D., New York University, 1965

Walden, Eric L. ....................... University Controller (Finance and Accounting), 1973
B.S.; M.B.A., East Texas State University, 1973

Wallace, Andrew C. ................. Assistant Professor (Marketing), 1969
B.S., M.A., University of Kentucky, 1967

Wallace, David W. ..................... Assistant Administrator (Marine Science), 1970, St. Petersburg Campus

Wallace, Robert E. ..................... Assistant Vice President (Administration), 1972
B.S., University of Akron, 1961

Wallenfels, Vicki L. ................... Student Affairs Coordinator (University Studies, Student Affairs), 1974
B.A., University of South Florida, 1973

Walter, Ruth M. ....................... Assistant Professor (Management), 1969
B.A.; M.A., State University of New York at Buffalo, 1964

Walther, John D. ....................... Assistant Professor (English), 1965
B.A., M.A.; Ph.D., Vanderbilt University, 1972

Waltzer, Arthur K. .................... Assistant Professor (Surgery), 1974 (Part time)
B.A.; M.D., Vanderbilt University School of Medicine, 1961

Ward, Anne ............................ Associate Professor (Education), 1972
B.S.Ed.; M.S.Ed., Ph.D., University of Tennessee, 1958

Warner, Robert A. ..................... Professor (Interdisciplinary Social Science), 1960
A.B.; Ed.M.; Ph.D., Yale University, 1935

Waterman, Patricia P. ................ Assistant Professor (Anthropology), 1969
B.S.; M.A., University of California, Berkeley, 1949

Watkins, Armin J. ..................... Professor (Music Arts), 1960
B.M., M.M.; D.M., Indiana University, 1957

Watson, John E. ....................... Lecturer (Accounting), 1972 (Part time), St. Petersburg Campus
B.S.B.A.; J.D., Stetson College of Law, 1964

Weatherford, Roy C. .................. Assistant Professor (Philosophy), 1972
B.A.; M.A., Ph.D., Harvard University, 1972

Weaver, Lee A. ......................... Associate Professor (Industrial Systems Engineering), 1967
B.A.; M.S., Ph.D., University of Florida, 1972

Webb, Sydney J. ...................... Professor (Physics), 1973
B.Sc.; B.Sc., M.Sc., D.I.C., Ph.D., Imperial College, London, 1955

Weeks, Gerald M. ..................... Assistant Professor (Education), 1970
B.A.; M.Ed., University of Georgia, 1970

Weinberg, Herman ...................... Assistant Professor (Education), 1970
B.S.; M.A.; Ed.D., Temple University, 1969

Weingartner, Charles .................. Professor (Education), 1970
B.S.; M.A.; Ed.D., Columbia University, 1958

Weinzierl, Jon E. ...................... Assistant Professor (Chemistry), 1973
B.S.; Ph.D., California Institute of Technology, 1968

Welker, Robert F. ...................... Associate Professor (Accounting/Law), 1966
A.B.; J.D.; M.B.A., University of South Florida, 1974

Wells, Aurelia S. ...................... Associate Professor (Business Communications), 1974 (Part time), St. Petersburg Campus
B.A.; M.A., Tulane University, 1949

Wells, Daniel A. ....................... Assistant Professor (English), 1970
B.S.; M.A., Ph.D., Temple University, 1963

Wenzel, Steven G. ..................... University Attorney (General Counsel), 1972
B.A.; J.D., University of Florida, 1972

Wenzinger, George R. ................. Associate Professor (Chemistry), 1963
A.B.; Ph.D., University of Rochester, 1960

West, Robert J. ....................... Professor (Accounting), 1964
B.S., M.S., Florida State University, 1961, C.P.A.

West, William W. ..................... Professor (Education), 1970
B.A.; M.A., Ph.D., Syracuse University, 1966

Whartenby, Franklee G. ............... Assistant Professor (Economics), 1968
A.B.; M.S.; Ph.D., University of North Carolina, 1963

Wheeler, Claudia J. ................... Research Associate (Education), 1974
B.A., M.A., University of South Florida, 1973

Wheeler, Raymond H. .................. Professor (Sociology), 1965
B.S.; M.A., Ph.D., University of Michigan, 1962

Wheeler, William ...................... Assistant Professor (Psychology), 1974
B.A.; Ph.D., University of California, Irvine, 1974

Whitaker, Robert D. ................. Professor (Chemistry), 1962
B.S.; Ph.D., University of Florida, 1939

White, Louis P. ....................... Instructor (Management), 1971
B.A., M.S., University of South Florida, 1971

White, Michael J. ..................... Assistant Professor (Management), 1968, St. Petersburg Campus
B.E.E.; M.B.A., Michigan State University, 1968

Whitney, Vernon W. ................... Associate Professor (Education), 1966

Wiener, Curtis W. ..................... Assistant Professor (Anthropology), 1972
B.A.; M.A., University of Arizona, 1970

Wiley, Russell W. ..................... Professor—Coordinator (Education Program), 1966, Ft. Myers Center
B.A., M.A., Ed.D., Syracuse University, 1955

Wilk, Roger E. ......................... Dean and Professor (Education), 1972
B.S.; M.A., Ph.D., University of Minnesota, 1957

Wilkinson, David S. ................. Assistant Professor (Biochemistry), 1972
B.S.; Ph.D., University of Wisconsin, 1971

Williams, Carol A. .................... Associate Professor (Astronomy), 1968
B.S.; M.Ed., Yale University, 1967

Williams, James R. .................... Assistant Professor (Anthropology), 1969
B.S.; M.A., Ph.D., Missouri University, 1971

Williams, James W. ................... Instructor (Surgery), 1973, (Part time)
B.S.; M.D., University of Tennessee Medical School, 1967

Williams, Joseph F. ................... Assistant Professor (Pharmacology), 1972
B.A.; Ph.D., University of Utah, 1970

Williams, Juanita H. .................. Associate Professor (Interdisciplinary Social Science), 1966
A.B.; M.A., Ph.D., Temple University, 1963
FACULTY AND ADMINISTRATIVE STAFF 197

WILLIAMS, WALTER E. . . . . . . . Assistant Professor (Mathematics), Assistant to the Dean and Director of Advising (College of Natural Science), 1961
B.A.; M.A., Miami University, Ohio, 1955
WILSON, ROBERT E. . . . . . . . Professor (Astronomy), 1966
A.B., Ph.D., University of Pennsylvania, 1963
WILSON, THOMAS C. . . . . . . . Associate Professor (Education), 1968
B.S., M.A., Ed. D., Wayne State University, 1970
WIMMERT, ROBERT J. . . . . . . . Chairperson and Professor (Industrial Systems Engineering), 1964
B.S.E.E., M.S.; Ph.D., University of Texas, 1960

WOLFE, ALVIN W. . . . . . . . Professor (Anthropology), 1974
A.B.; Ph.D., Northwestern University, 1957
WONG, KIN-PING . . . . . . . Associate Professor (Biochemistry), 1970
B.S.; Ph.D., Purdue University, 1968, Post Doctoral Fellow
WOODBURY, ARTHUR N. . . . . . Associate Professor (Music Arts), 1972
B.S., M.M., University of Idaho, 1955
WOOLFENDEN, GLEN E. . . . . . Professor (Biological Sciences), 1960
B.S.; M.A.; Ph.D., University of Florida, 1960
WORRELL, JAY H. . . . . . . . . Associate Professor (Chemistry), 1967
B.S.; M.S.; Ph.D., Ohio State University, 1966
WONG, CHARLES J. . . . . . . . . Assistant Professor (History), 1970
B.A.; M.A.; Ph.D., Brown University, 1968
WUCIK, THEODORE F. . . . . . . . Assistant Professor (Visual Arts), 1970
Certificate, Art School, Society of Arts and Crafts, Detroit, 1962

RETIREd FACULTY

AGENS, FREDERIC F. . . . . . . . Lecturer (Physical Science), 1960-1971
B.S.; M.S., University of California at Berkeley, 1937
AGENS, JEANETTE F. . . . . . . . Assistant Professor (Education), 1963-1972
B.A.; M.A., George Washington University, 1944
ALLEN, JOHN S. . . . . . . . . . President Emeritus, 1957-1970
B.A.; M.A.; Ph.D., New York University, 1936, LL.D. (Hon.), Sc. D. (Hon.)
AULETA, MICHAEL S. . . . . . . . Professor (Education), 1967-1973
B.A.; M.A.; Ed. D., New York University, 1947
BEAUCHAMP, GEORGE E. . . . . . Associate Professor (English), 1960-1971
A.B.; M.A.; Ph.D., Northwestern University, 1942
BOULWARE, JOE W. . . . . . . . Lecturer (Geology), 1961-1973
B.S.; B.S.; M.S., University of Florida, 1963
BRUSCA, DONALD D. . . . . . . . University Physician (Student Health), 1965-1973
B.S.; M.D., Medical College of Virginia, 1936
CARR, ROBERT S. . . . . . . . . . Visiting Lecturer (Mass Communications), 1968-1974
CHEN, CHUNG HAN . . . . . . . Professor (Philosophy), 1965-1975
B.S.; Ph.D., University of Berlin, 1939
CLARK, CLARENCE C. . . . . . . . Professor Emeritus (Physical Science), 1960-1969
B.S.; M.S.; Ph.D., New York University, 1932
CLARBY, FLORENCE D. . . . . . . Lecturer (Education), 1964-1969
B.S.; M.A.; Wayne State University, 1932
COWELL, GEORGE J. . . . . . . . Professor (Engineering), 1960-1973
B.S.E.E., M.S.; Ph.D., Western Reserve University, 1960

WULFF, ROBERT M. . . . . . . . Instructor (Anthropology), 1974
B.A.; M.A., University of California, Los Angeles, 1970
WURSTER, MARGUERITE S. . . . . . Assistant University Librarian (Extension Library), 1965, St. Petersburg Campus
B.A.; M.A., University of South Florida, 1972
WYLY, R. DONALD, JR. . . . . . . Associate Professor (English), 1965
B.A., M.A.; Ph.D., Ohio State University, 1964
YATES, EDWIN S. . . . . . . . . . Associate Professor (Mass Communications), 1964
A.B.; M.A., University of Alabama, 1964
YORK, WOODY N. . . . . . . . . . Associate Professor (Surgery), 1972 (Part time)
B.S., M.D., Tulane University, 1958
YORK, LILLIAN C. . . . . . . . . . Director (Space Utilization and Analysis), 1964
Certified Diploma, Philadelphia College of Bible, 1955
YOUNG, JANE F. . . . . . . . . . Lecturer (Education), 1970
YOUNG, JOANNE E. . . . . . . . . Associate Professor (Physical Education; Student Affairs), Assistant Director (Intercollegiate Athletics: Student Affairs), 1961
B.S.; M.Ed., University of North Carolina, 1955
ZACHARY, IHOR G. . . . . . . . . . Assistant Professor (Ophthalmology), 1974
B.A.; M.D., Yale University School of Medicine, 1967
ZAINTZ, CHARLES . . . . . . . . . . Associate Professor (Mathematics), 1974
B.S.; M.S., Ph.D., Purdue University, 1974
ZBAR, FLORA J. . . . . . . . . . . . Assistant Professor (English), 1965
B.A.; M.A., Florida State University, 1962
ZENNER, ANTHONY A. . . . . . . . Assistant Professor (Communicology), 1971
B.A.; M.A.; Ph.D., Syracuse University, 1971
ZERLA, FREDRIC J. . . . . . . . . . Associate Professor (Mathematics), 1963
B.A.; M.S., Ph.D., Florida State University, 1967
ZOBRISt, GEORGE W. . . . . . . . . Professor (Electrical and Electronic Engineering), 1971
B.S.E.E.; M.S.E.E.; Ph.D., University of Missouri, 1965
ZUREICH, RAYMOND . . . . . . . . . Director (Internal Control), 1969
B.S.; M.B.A., University of South Florida, 1972, C.P.A.
ZYLSTRA, SABE A. . . . . . . . . . Associate Professor (Humanities), 1969
B.A.; B.D.; Ph.D., Emory University, 1969

DEAN, HARRIS W. . . . . . . . . Vice President for Academic Affairs Emeritus, 1961-1971
L.H.D. (Hon.)
DEJONGH, WILLIAM F. J. . . . . Visiting Professor (Modern Languages), 1967-1972
A.B.; A.M.; Ph.D., Harvard University, 1939
DEYD, WILLIAM A., JR. . . . . . Associate Professor (Accounting), 1960-1973
B.S.; M.B.A., Harvard University, 1941
FOREMAN, GUY . . . . . . . . . . . Professor Emeritus (Physics), 1962-1972
B.S.; M.A.; Ph.D., University of Kentucky, 1930
FOUtz, LUCILLE C. . . . . . . . . . Lecturer (Counseling Center), 1963-1973
B.A., Ph.D., University of Iowa, 1930
FRENCH, SIDNEY J. . . . . . . . . . Dean Emeritus Academic Affairs and Professor (Education), 1919-1969
B.S.; M.S., Ph.D., University of Wisconsin, 1928
HARTLEY, JACQUETTA W. . . . . Instructor (English), 1960-1972
B.A.; M.A., University of Florida, 1959
HAVEN, JULIA M. . . . . . . . . . Professor (Education), 1969-1974
B.E.; M.A.; Ph.D., Northwestern University, 1954
HICKMAN, WILLIAM . . . . . . . . . Assistant Professor (English), 1963-1969
A.B.; M.A.; Ph.D., University of Pittsburgh, 1963
KAUDEr, EMIL . . . . . . . . . . . Distinguished Professor (Economics), 1968-1973
Ph.D., University of Berlin, 1924
KELLER, WALTER D. . . . . . . . . Professor (Geology), 1970-1973
B.S., A.B.; A.M.; Ph.D., University of Missouri, 1933
LAKELA, OLGA ............ Research Associate (Botany), 1960-1970
B.S., M.S., Ph.D., University of Minnesota, 1932
LUCKENBACH, LEON R. ............ Associate Professor (Mathematics), 1960-1974
OBERMEYER, CHARLES ........ Lecturer (American Idea), 1964-1970
B.A., M.A.; Ph.D., University of London, 1928
O'HARE, LEO H. .................... Lecturer (English), 1960-1969
B.A.; M.A., Woodstock College, 1920
PRESCOTT, GERALD R. ............ Associate Professor (Music Education), 1967-1972
B.A.; M.A., University of Iowa, 1938
SARETT, ALMA J. ............ Professor Emeritus (Speech), 1960-1970
B.S.; M.A., Ph.D., Northwestern University, 1942

SHACKSON, L. LEE ............ Professor (Humanities), 1964-1974
B.S., M.A., Ph.D., Ohio State University, 1959
SOKOLSKY, ANATOLE ............ Associate Professor (Modern Languages), 1961-1972
B.Lit., LL.D.; Ph.D., Sorbonne, 1952
STUBBLEBINE, ALBERT N., JR. ............ Assistant Professor (Engineering), Coordinator (Cooperative Education Program), 1964-1968
B.S., United States Military Academy, 1924
WUNDERLICH, HERBERT J. ............ Professor (Academic Affairs), 1962-1972
B.A.; M.A.; Ed.D., Stanford University, 1954
Major curricula and programs are listed in italics.

Academic calendar, 4-5
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