EEC 2003 INTRODUCTION TO EARLY CHILDHOOD EDUCATION (3)
An overview of early childhood education with emphasis on its historical development, current theories, and practices.

EEC 4203 PROGRAMS IN EARLY CHILDHOOD EDUCATION (4)
PR: Admission to College of Education. A study of school programs for children age 3-8. Analysis and evaluation of these programs in the light of the most effective current classroom practices. Observation and participation included.

EEC 4303 CREATIVE EXPERIENCES IN EARLY CHILDHOOD EDUCATION (3)
PR: Admission to College of Education. The development of the child's creative expression through art, music, dance, play, and drama; included are the materials, content, and teaching techniques.

EEC 4706 LANGUAGE AND LEARNING IN EARLY CHILDHOOD (3)
PR: Admission to College of Education. The study of the acquisition of language in young children and the development of basic communications skills in the Language Arts Curriculum, infancy through age 8 years.

EEC 4906 INDEPENDENT STUDY: ELEMENTARY-EARLY CHILDHOOD EDUCATION (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

EEC 4909 DIRECTED STUDY: ELEMENTARY-EARLY CHILDHOOD EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

EEC 4936 SENIOR SEMINAR IN ELEMENTARY-EARLY CHILDHOOD EDUCATION (2)

EEC 4940 INTERNSHIP: ELEMENTARY/ELEMENTARY EARLY CHILDHOOD (10)
Teacher candidate is required to demonstrate professional competencies during one semester or full-day internship in a public or private elementary school. Concurrent enrollment in EEC 4936. (S/U only.)

HLP 4460 HEALTH AND PHYSICAL EDUCATION FOR THE CHILD (3)
PR: Admission to the College of Education. A study of the importance of movement competency and its contribution to the development of a positive self-concept in children; content and methodology for developing appropriate movement experiences for children; content and methodology for teaching elementary health science.

LAE 4414 LITERATURE IN CHILDHOOD EDUCATION (3)
PR: Admission to the College of Education. The exploration of the content, organization and instruction of oral communication and written expression in Childhood Education.

LAE 4414 LITERATURE IN CHILDHOOD EDUCATION (3)
PR: Admission to College of Education. The selection, evaluation and use of fiction, nonfiction and poetry for instructional, informational, and recreational purposes in Childhood Education.

MAE 4310 TEACHING ELEMENTARY SCHOOL MATHEMATICS I (3)
PR: Admission to College of Education, Number Systems, Basic Algebraic Concepts, Informal Geometry, or equivalent, and a passing score on the College of Education Test of Mathematical Competencies. Methods for teaching number ideas, computation skills, and mathematical reasoning.

MAE 4311 TEACHING ELEMENTARY SCHOOL MATHEMATICS II (2)
PR: MAE 4310. Methods for teaching informal geometry, measurement, and probability and statistics.

MAE 4545 DIAGNOSIS AND TREATMENT OF LEARNING DISABILITIES IN SCHOOL MATHEMATICS (3)
PR: MAE 4310 or equivalent. Presentation and analysis of teaching methods and models appropriate for use with students experiencing learning disabilities in mathematics; supervised conduct of a case study.

MUE 4315 MUSIC FOR THE CHILD (3)
PR: Admission to College of Education. Music fundamentals, the development of music skills and knowledge of music materials and teaching strategies for presenting music to children in the elementary school.

RED 4310 READING FOR THE CHILD (3)
PR: Admission to College of Education. Prereading, word recognition, comprehension and basic study skills and various reading approaches and reading interests.

SCE 4310 SCIENCE FOR THE CHILD (3)
PR: Admission to College of Education and completion of General Distribution Requirements in the Natural Science area. Techniques and materials for teaching science in the elementary school.

SEE 4313 TEACHING ELEMENTARY SCHOOL SOCIAL STUDIES (3)
PR: Admission to College of Education or CI. Methods of planning and teaching subjects related to the study of people and their relationships with other people and their environment.

GRADUATE COURSES

ARE 6358 ART FOR THE ELEMENTARY SCHOOL TEACHER (3)
Exploration of various materials and techniques in relationship to current theories about art and the intellectual creative, emotional and aesthetic growth of children.

EDE 5541 INDIVIDUALIZED INSTRUCTION IN THE ELEMENTARY SCHOOL (3)
PR: Senior or Graduate standing in the College of Education or CI. A study of selected methods and materials available for the implementation of individualized instruction in grades K-6.

EDE 6305 CREATIVE TEACHING IN THE ELEMENTARY SCHOOL (3)
Creative processes in the teaching of visual arts, music, dance, and drama to elementary school pupils.

EDG 6935 SEMINAR IN CURRICULUM RESEARCH (1-3)
PR: EDF 6481. Critical evaluation of current research and curriculum literature, design and analysis of individual research topics leading to satisfaction of research requirements.

EDS 6930 PROBLEMS IN SUPERVISION (3)
PR: EDF 6481 or equivalent and EDS 6050. Problems in supervising for curriculum improvement within the elementary school.

EEC 5406 SOCIAL GROWTH IN CHILDHOOD (3)
PR: Admission to College of Education. A study of the principal factors which influence the social development of young children with particular emphasis upon those cultural influences which affect both child development and the educational programs for the young child.

ECC 5705 INTELLECTUAL GROWTH IN CHILDHOOD (3)
Intellectual development of the normal child with particular emphasis on the studies of Jean Piaget and how they relate to curriculum for children, ages 0-8. Child study through observation required.

ECC 5926 WORKSHOP IN EARLY CHILDHOOD EDUCATION (3)
PR: Admission to College of Education. Individual problems and innovations related to methods and materials of instruction in the early childhood grades.

ECC 6261 ADVANCED PROGRAMS IN EARLY CHILDHOOD EDUCATION (3)
PR: EDF 6431, EEC 4203 or CI. A study of innovative curriculum designs in Early Childhood Education, with emphasis given to related research.

ECC 6405 HOME-SCHOOL-COMMUNITY INTERACTION IN EARLY CHILDHOOD EDUCATION (3)
PR: EDF 6431, EEC 4203 or CI. An intensive study of the roles of parents, teacher aides, and community agencies involved in the education of the young child.

LAE 6301 LANGUAGE LEARNING IN CHILDHOOD (3)
PR: Graduate standing in the College of Education. The study of research which has been used to assess the language behavior of normal children. Attention will also be given to the application of selected research methodology to understanding linguistics behavior of children.

LAE 6415 LITERATURE AND THE LEARNER (3)
This course is designed to acquaint adults with the nature, scope and uses of literature for instructional, information and recreational purposes. The implication of current theory, significant research and issues in literature study will be investigated and examined as they relate to the learner.

LAE 6616 TRENDS IN LANGUAGE ARTS INSTRUCTION (3)
PR: LAE 4314 or equivalent or CI. A study of significant concepts, emerging trends, research and instructional techniques for implementation and utilization of language arts in all areas of the curriculum.
EED 4099 DIRECTED STUDY: EMOTIONAL DISTURBANCE  
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

EED 4936 SENIOR SEMINAR IN EMOTIONAL DISTURBANCE  

EED 4940 INTERNSHIP: EMOTIONAL DISTURBANCE  
(1-12)  
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special program where the intern experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

EED 4941 UNDERGRADUATE SUPERVISED PRACTICUM IN BEHAVIOR DISORDERS  
(2-4)  
PR: Acceptance in the undergraduate program for Emotional Disturbance. Exceptional Children and Youth and Behavior Disorders in the Schools may be taken concurrently. Supervised undergraduate practicum experiences with children and youth with behavior disorders. A one hour per week seminar is required concurrent with practicum.

EED 4945 INTERNSHIP  
(1-4)  
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester (S/U only.)

EED 4946 INTERNSHIP  
(1-2)  
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

ENGLISH EDUCATION

UNDERGRADUATE COURSES

LAE 4335 METHODS OF TEACHING ENGLISH—LITERATURE AND READING  
CR: EDG 4200, LAE 4335, and LAE 4642 are typically taken concurrently. A survey of materials available to adolescent readers plus an overview of organizational strategies for teaching literature and reading.

LAE 4530 READING SKILLS IN ENGLISH  
EDUCATION  
PR: EED 4360 or CI. Methods of dealing with reading problems and application of general reading concepts in English Education. Required of all undergraduate majors in English Education.

LAE 4642 CURRENT TEACHING OF ENGLISH LANGUAGE AND MEDIA  
PR: Acceptance into College of Education. CR: EDG 4200, LAE 4335, and LAE 4642 are typically taken concurrently. Methods of teaching language and media. Includes current findings on teaching usage, dialect, grammar, and semantics, as well as approaches to media in English.

LAE 4905 INDEPENDENT STUDY: ENGLISH EDUCATION  
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

LAE 4909 DIRECTED STUDY: ENGLISH EDUCATION  
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.
LA£ 4936 SENIOR SEMINAR IN ENGLISH (2)
PR: Senior standing. Synthesis of teacher candidate’s courses in completed college program. Required concurrently with internship.

LA£ 4940 INTERNSHIP: ENGLISH EDUCATION (1-12)
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more semesters, student will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

LA£ 4941 INTERNSHIP (1-4)
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester (S/U only.)

LA£ 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

LA£ 5932 SELECTED TOPICS IN THE TEACHING OF ENGLISH (3)
PR: Certification in English and/or Mass Communications and approval of graduate adviser. Investigation into topics which are of special interest to the student and are related to the teaching of English in the secondary school. Topics will be selected by the student in accordance with his particular goals and will be approved by the student’s graduate adviser.

LA£ 6336 NEW PERSPECTIVES ON THE TEACHING OF LITERATURE IN SECONDARY SCHOOLS (3)
PR: Certification in English or Mass Communications. Survey of recent investigation into adolescents’ perception of and responses to literature and implications for organization and presentation of literature curricula.

LA£ 6637 CURRENT TRENDS IN SECONDARY ENGLISH EDUCATION (3)
Curricular patterns and instructional practices in secondary English.

LA£ 6644 CURRENT TEACHING OF THE ENGLISH LANGUAGE (3)
Application of recent techniques of language study to classroom teaching of English, especially in relation to current textbooks.

EXCEPTIONAL CHILD EDUCATION

UNDERGRADUATE COURSES

EEX 3010 EXCEPTIONAL CHILDREN AND YOUTH (4)

EEX 4070 SYSTEMS FOR INTEGRATING EXCEPTIONAL STUDENTS IN THE REGULAR CLASSROOM (3)
Designed for non-special education majors. Includes basic identification techniques and strategies to promote academic and social integration and interaction of “mainstreamed” exceptional students.

EEX 4211 EDUCATIONAL ASSESSMENT OF EXCEPTIONAL CHILDREN (4)
PR: EDF 3214, EEX 3010, EMR 3011, or EED 4011 or ELD 4011 and an Exceptional Child Education major. Introduction to and familiarization with formal and informal techniques used to measure and evaluate all exceptional children. The interpretation of information so derived for utilization in educational programming and individualization of instruction. Lab.

EEX 4905 INDEPENDENT STUDY: EXCEPTIONAL CHILD EDUCATION (1-4)
PR: CI. Specialized independent study determined by the student’s needs and interests. May be repeated when subjects vary. (S/U only.)

EEX 4909 DIRECTED STUDY: EXCEPTIONAL CHILD EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

EEX 4936 SENIOR SEMINAR IN EXCEPTIONAL CHILD EDUCATION (2)
PR: Senior standing. Synthesis of teacher candidate’s courses in completed college program. Required concurrently with internship.

EEX 4940 INTERNSHIP: EXCEPTIONAL CHILD EDUCATION (1-12)
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

EEX 4945 INTERNSHIP (1-4)
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of the year experiences when taken in Fall Semester (S/U only.)

EEX 4952 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

EEX 6201 PSYCHOEDUCATIONAL APPRAISAL OF EXCEPTIONAL STUDENTS (4)
PR: Graduate standing, introductory courses in exceptional student education and educational assessment. Advanced educational assessment and staffing procedures for individual exceptional students. Laboratory sessions required.

EEX 6222 EDUCATING THE ADOLESCENT EXCEPTIONAL STUDENT (4)
PR: Introductory course in educating exceptional students, graduate standing. Procedures in implementing educational programs for the exceptional adolescent. Includes educational programming, alternative programs, community resource coordination, career/occupational education, and advocacy.

EEX 6362 EDUCATING THE AUTISTIC STUDENT (2)
PR: Graduate standing, introductory course in Educating Exceptional Students; Psycho-educational Assessment. Developing and managing appropriate and effective educational programs and techniques with autistic students.

EEX 6511 ADMINISTRATION OF EXCEPTIONAL CHILD PROGRAMS (3)
PR: CI. Procedures which local, state, and national administrators may use to implement services for exceptional children.

EEX 6731 CONSULTATION WITH PROFESSIONALS AND PARENTS OF EXCEPTIONAL STUDENTS (4)
PR: Introductory course in exceptional student education, graduate standing. Knowledge and skills in developing home, school, and community professional partnership in educating exceptional students.

EEX 6934 CURRENT TRENDS AND ISSUES IN THE EDUCATION OF EXCEPTIONAL CHILDREN (3)
Survey of current trends and issues related to the education of exceptional children.

EEX 6936 SEMINAR IN INTEGRATING EXCEPTIONAL STUDENTS IN REGULAR EDUCATIONAL ENVIRONMENTS (3)
Designed for non-special education graduate students. Surveys the characteristics of exceptional student populations, identification processes, and systems for providing appropriate services for “mainstreamed” students in academic and non-academic settings.

EEX 7203 EDUCATIONAL IMPLICATIONS OF PSYCHOSOCIAL ASPECTS OF EXCEPTIONAL CHILDREN (1-5)
PR: CI. This course will be concerned with the identification of the psycho-social needs and characteristics of exceptional children. Opportunity will also be given to the analysis of the educational implications of these needs and characteristics. May be repeated for a maximum of 5 hours.

EEX 7301 SELECTED TOPICS IN EXCEPTIONAL CHILD EDUCATION (1-8)
PR: EEX 7341 or CI. Identification and specifications of a research problem in special education. Opportunity will be provided for the student to gather and process data, culminating in a written report and/or oral presentation to fellow student researchers. May be repeated for a maximum of 8 hours.
EX 7341 RESEARCH STUDIES AND THEIR IMPLICATIONS IN THE EDUCATION OF EXCEPTIONAL CHILDREN (3)
PR: EDF 6431, EDF 6481 or equivalent. CI. This course will involve a study of current research in exceptional child education. The transition from theory into practice will be made through the examination and discussion of implications to the field of special education that can be drawn from the research.

EX 7741 PHILOSOPHY AND PROCESS IN THE PREPARATION OF SPECIALISTS IN EXCEPTIONAL CHILD EDUCATION (3)
PR: Admission in the Program for Ed.S. and Ph.D. in Education. In-depth exploration of the philosophy and theory in special education. A theoretical basis for the preparation of specialists in the field of exceptional child education.

EX 7841 FIELDWORK WITH EXCEPTIONAL CHILDREN (1-5)
PR: CI. Practical field experience in curriculum development, classroom teaching, supervision and/or administrative areas in special education. May be repeated for a maximum of 5 hours.

EX 7911 SPECIALIZED STUDY IN: MENTAL RETARDATION, EMOTIONAL DISTURBANCE, SPECIFIC LEARNING DISABILITIES, AND GIFTED EDUCATION (1-8)
PR: CI. Exploration and demonstration of knowledge in an area of interest to the student in special education. The specialized study may also include areas for which the student needs to demonstrate a higher level of competency. May be repeated for a maximum of 8 hours.

EX 7930 SEMINARS IN EXCEPTIONAL CHILD EDUCATION (1-7)
PR: Preliminary admission to the Graduate Program and CI. Seminar Topics will vary to include neurophysiological mechanisms, current trends, issues, and curriculum development in Special Education. May be repeated for a maximum of 7 hours.

FOREIGN LANGUAGE EDUCATION

UNDERGRADUATE COURSES

FLE 4164 FOUNDATIONS OF BILINGUAL EDUCATION (2)
PR: Proficiency in English and one other language. Introduction to Bilingual/Biculture Education including study of laws, programs, teaching situations and needs of minority groups.

FLE 4333 FOREIGN LANGUAGE TEACHING IN THE SECONDARY SCHOOL (3)

FLE 4334 PRACTICUM IN FOREIGN LANGUAGE TEACHING IN THE SECONDARY SCHOOL (3)
PR: FLE 4333. Research on available literature in the field of foreign language education and the psychology of language learning. Examination of the interdependence of language, culture, and geography. Extended study and practice of the sequential steps of foreign language teaching with emphasis on the audio-lingual approach.

FLE 4905 INDEPENDENT STUDY: FOREIGN LANGUAGE EDUCATION (1-4)
PR: CI. Specialized independent study determined by the student’s needs and interests. May be repeated when subjects vary. (S/U only.)

FLE 4906 DIRECTED STUDY: FOREIGN LANGUAGE EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

FLE 4936 SENIOR SEMINAR IN FOREIGN LANGUAGE EDUCATION (2)
PR: Senior standing. Synthesis of teacher candidate’s courses in completed college program. Required concurrently with internship.

FLE 4940 INTERNSHIP: FOREIGN LANGUAGE EDUCATION (1-12)
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the internship experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

FLE 4945 INTERNSHIP (1-4)
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include assessment of year experiences when taken in Fall Semester. (S/U only.)

FLE 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

FLE 6665 CURRENT TRENDS IN SECONDARY FOREIGN LANGUAGE EDUCATION (3)
PR: Consultation with instructor, plus foreign language fluency. Curriculum patterns and instructional practices in the teaching of secondary foreign languages.

FOUNDATIONS

UNDERGRADUATE COURSES

EDF 3122 LEARNING AND THE DEVELOPING CHILD (4)
PR: General Psychology and admission to College of Education. Pre-admission child growth and development, learning theory, and behavioral analysis applied to instruction and to the organization and management of the classroom.

EDF 3210 EDUCATIONAL PSYCHOLOGY (3)
PR: Upper level standing. The application of behavioral principles to human behavior in educational institutions, home and community settings. May not be counted for EDF 3214. (For non-education majors only.)

EDF 3214 HUMAN DEVELOPMENT AND LEARNING (3)
PR: Admission to College of Education or CC. Application of respondent and operant learning principles to classroom learning, teaching models for different instructional goals, analysis of teacher behavior, micro-teaching.

EDG 3320 BEHAVIOR MANAGEMENT IN ELEMENTARY SCHOOLS (2)
PR: EDF 3122, Learning and the Developing Child. The application of theory and basic principles of learning design to enhance classroom instruction and child management procedures. Basic concepts of applied behavior analysis including the accurate measurement of child and teacher behavior in the ongoing instructional setting.

EDF 3228 BEHAVIOR MODIFICATION TECHNIQUES (4)
PR: EDF 3214. Special techniques in behavior modification for children with learning difficulties. Minimum of two hours field experience per week required in addition to regular class hours.

EDF 3542 PHILOSOPHY OF EDUCATION (4)
PR: Upper level standing. A study of philosophy of education with an emphasis on aspects that are relevant to an understanding of the issues and problems of teaching.

EDF 3554 VALUES CLARIFICATION FOR TEACHERS (3)
PR: Junior standing recommended. Techniques for teachers in identifying and analyzing values and value orientations of individuals and groups of students in the school.

EDF 3604 SOCIAL FOUNDATIONS OF EDUCATION (3)
PR: Admission to College of Education. Social, economic and political context within which schools function and the values which provide direction for our schools; the culture as a motivating influence in instruction. Should not be taken concurrently with EDF 3214.

EDF 3710 COMPARATIVE EDUCATION (3)
PR: Upper level standing. A comparison of contemporary educational systems of selected countries with that of the United States.

EDF 4905 INDEPENDENT STUDY: EDUCATIONAL FOUNDATIONS (1-4)
PR: CI. Specialized independent study determined by the student’s needs and interests. May be repeated when subjects vary. (S/U only.)

EDF 4906 DIRECTED STUDY: EDUCATIONAL FOUNDATIONS (1-3)
PR: Senior Standing. To extend competency in teaching field. Offered only as a scheduled class.
GRADUATE COURSES

EDF 5136 ADOLESCENCE (4)
Study of the educational, intellectual, personality, physical, social and vocational factors in adolescence and their importance for school personnel.

EDF 5285 PROGRAMMED INSTRUCTION AND TEACHING MACHINES (3)
Principles for programming in the several academic subjects.

EDF 5672 AMERICAN DEMOCRACY AND PUBLIC EDUCATION (3)
Interdependence of the public school and democracy in the United States and the responsibility of the school in fostering and strengthening basic democratic principles.

EDF 6120 CHILD DEVELOPMENT (4)
PR: EDF 6211 or CI. Educational, emotional, hereditary, intellectual, social and physical factors influencing child growth and development.

EDF 6123 MEASUREMENT OF COGNITIVE FUNCTIONING IN CHILDHOOD AND ADOLESCENCE (4)
PR: A course in measurement and CI. Investigation of theories and measurement of cognitive functioning in childhood and adolescence.

EDF 6211 PSYCHOLOGICAL FOUNDATIONS OF EDUCATION (3)
Selected topics in psychology of human development and learning.

EDF 6213 BIOLOGICAL BASES FOR LEARNING AND BEHAVIOR (3)
PR: Graduate course in Educational Psychology. A study of human biological development and its influence upon learning and behavior.

EDF 6215 LEARNING PRINCIPLES APPLIED TO INSTRUCTION (4)
PR: Graduate Standing. Study of learning principles and their application to classroom instruction.

EDF 6217 BEHAVIOR THEORY AND CLASSROOM LEARNING (4)
PR: EDF 6215 or CI. Theoretical and practical applications of behavior modification; introduction to experimental methods for behavior modification; operant methods in behavior and development; analysis and field work.

EDF 6354 THEORIES OF PERSONALITY FOR SCHOOL PERSONNEL (4)
Survey and analysis of major personality theories with emphasis on psycho-social and cognitive development throughout a person's life span. Application of relevant theoretical constructs to education and guidance.

EDF 6517 HISTORICAL FOUNDATIONS OF AMERICAN EDUCATION (4)
PR: Graduate Standing. A study of the history of the origins and development of American education, events and movements that have shaped school policies and practices, and their relationship to contemporary developments and problems.

EDF 6520 EDUCATION IN WESTERN CIVILIZATION (4)
PR: Graduate standing; basic course in western history or history of philosophy. Study of educational ideas, institutions, practices and prominent theorists from the western tradition and their continuing influence on modern education.

EDF 6544 PHILOSOPHICAL FOUNDATIONS OF AMERICAN EDUCATION (3)
Major philosophies of education which are relevant to an understanding of contemporary educational issues.

EDF 6606 SOCIO-ECONOMIC FOUNDATIONS OF AMERICAN EDUCATION (4)
PR: Graduate Standing. A study of socio-economic factors as they relate to the work of professional educators and the role of public education in American society.

EDF 6712 SEMINAR IN COMPARATIVE EDUCATION (4)
Contemporary policies and practices in education in selected countries of the world. Methodology in Comparative Education.

EDF 6805 WOMEN AND EDUCATION (3)
Course is designed to enable public school personnel, teachers, counselors, administrators and other professionals, to identify those aspects of public education which perpetuate sex role stereotyping. Emphasis will be placed on how the law and formal and informal affirmative action activities can be employed to correct sexism in schools.

EDF 6830 EDUCATION, COMMUNICATION, AND CHANGE (4)
PR: Graduate standing or CI. Implications for education of the developments in communication, emphasizing the role of innovations as a catalyst in the process of social change as it affects students, teachers, and traditional school arrangements.

EDF 6860 SCHOOLS AND THE FUTURE (4)
Examination of estimates of future demands upon schools; critique of current paradigms, techniques, and literature.

EDF 6938 SELECTED TOPICS (1-4)
PR: CI. Exploration and demonstration of knowledge in an area of special interest to the student and/or in an area for which the student needs to demonstrate a higher level of competence. Defined to fit the needs of each student.

EDF 6944 FIELD EXPERIENCE (1-4)
PR: CI. Demonstrate skills in the practice of the student's specialty. Specific objectives will be defined according to the needs of the individual student.

EDF 7586 CLASSICS IN EDUCATIONAL RESEARCH (4)
PR: Graduate Standing; EDF 6517, EDF 6544, or EDF 6606 or CI. An examination of the context, methodology, and impact of significant research studies in education.

EDF 7610 SCHOOL REFORM (3)
Historical critique of causes and effects of school reform efforts.

EDF 7649 ANALYSIS OF EDUCATIONAL ISSUES (3)
Socio-cultural, historical, and axiological examination of selected issues in public education.

EDF 7655 ORGANIZATION DEVELOPMENT IN EDUCATIONAL INSTITUTIONS (4)
PR: Graduate standing, EDF 6517, EDF 6544, EDF 6606, or CI. The application of social and behavioral science theory to the organizational and developmental problems of schools and school systems.

EDF 7682 EDUCATION IN METROPOLITAN AREAS (4)
PR: Graduate standing; EDF 6517; EDF 6544, or EDF 6606 or CI. Study of the school as a formal, socializing institution and its relationship to the various school populations found in metropolitan areas.

SPS 6197, 6198 PSYCHOEDUCATIONAL DIAGNOSIS AND PRESCRIPTION I, II (5,5)
PR: Acceptance to graduate program in School Psychology. Content covers comprehensive diagnosis and prescription in school psychology, including critical reviews of relevant research literatures, the professional-client relationship, interviewing, client histories, pluralistic psychoeducational assessment, assessment of educational environments, synthesis and dissemination of diagnostic data, and referral procedures. Appropriate field experiences will be provided. This course must be taken during two consecutive semesters, and the grade will be awarded at the end of the sequence.

SPS 6806 DEVELOPMENTAL BASES OF DIVERSE BEHAVIORS (4)
PR: CI. This course covers the major developmental causes and effects of various diverse forms of human behavior.

SPS 6997, 6998 PSYCHOEDUCATIONAL DIAGNOSIS (1-4)
PR: CI. Seminars to explore current matters of professional concern in school psychology such as trends, problems, legal and ethical issues, empirical bases of techniques. May be repeated up to 9 credit hours (with different subject matter).

GIFTED CHILD EDUCATION

UNDERGRADUATE COURSES

EGI 3011 INTRODUCTION TO GIFTED CHILDREN (3)
PR: Junior class standing. Diagnosis, characteristics, and educational provision of the gifted and talented.

EGI 3941 FIELD WORK WITH GIFTED CHILDREN (1-4)
Organized, supervised experiences with gifted children. Specific experiences may be either a combination of observation and assistance with gifted children or individualized projects.

GRADUATE COURSES

EGI 5051 NATURE AND NEEDS OF THE GIFTED (4)
Characteristics and educational needs of gifted children and youth. Emphasis is on five types of giftedness as defined by national Department of Education (1) intellec­tive giftedness, (2) specific academic aptitude, (3) visual and performing arts, (4) leadership and (5) kinesthetic.
HEALTH EDUCATION

UNDERGRADUATE COURSES

HES 2000 CONTEMPORARY HEALTH SCIENCE (3)
A comprehensive approach to health concerns and problems in contemporary society, including methods of assessing individual health needs.

HES 3122 HUMAN STRUCTURE AND FUNCTION (4)
PR: Fundamentals of Biology/lab, admission to the program or Cl. Major concepts of the structure and function of the human body systems and methods by which these concepts may be taught. Lab included.

HES 3123 HUMAN STRUCTURE AND FUNCTION II (2)
PR: HES 3122. A continuation of HES 3122. Course includes the following areas: cardiovascular, digestive and urinary systems balance and state metabolism; human inheritance.

HES 3140 CHILD HEALTH (4)
PR: Admission to the Health Education Program or Cl. Development of curricula, health services, health assessment procedures and health education programs for children.

HES 3141 PUBESCENT AND ADOLESCENT HEALTH (4)
PR: Admission to the program and HES 3140 or Cl. Health education content and programs relating to pubescents and adolescents.

HES 3244 HEALTH COUNSELING (3)
PR: Admission to the Health Education Program or Cl. A study and application of theory and methods of health counseling.

HES 3300 PROCESSES AND PROGRAMS IN HEALTH EDUCATION (2)
PR: Admission to the Health Education Program or Cl. Survey of programs in Health Education in the school and community. Processes in programs and curriculum development will also be emphasized.

HES 3510 CONSUMER HEALTH (3)
PR: Admission to the Health Education Program or Cl. An investigation of advertising and consumer practices in relation to health care. (S/U only.)

HES 4143 ADULT HEALTH (4)
PR: Admission to the program and HES 3141 or Cl. Health problems, services and education of the adult population.

HES 4276 HEALTH CARE DELIVERY SYSTEMS (3)
PR: Admission to the Health Education Program or Cl. An investigative study and evaluation of health care delivery systems in the U.S. and other countries.

HES 4700 ORGANIZATION AND ADMINISTRATION OF COMMUNITY HEALTH (3)
PR: Admission to the Program and HES 3143 or Cl. Organization and administration of community health programs. A written program plan is required.

HES 4722 CURRENT PROBLEMS IN HEALTH (3)
PR: Admission to the Health Education Program or Cl. An investigation of current health problems, programs, and research methods.

HES 4800 RESEARCH IN HEALTH EDUCATION (3)
PR: Admission to the program and concurrent enrollment in HES 4943. Students are expected to complete a research project for a health agency.

HES 4905 INDEPENDENT STUDY: HEALTH EDUCATION (1-4)
PR: Cl. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary.

HES 4909 DIRECTED STUDY: HEALTH EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

HES 490L INTERNSHIP IN HEALTH EDUCATION (1-12)
PR: Admission to the Health Education Program. Supervised internship in the schools with scheduled seminars. (S/U only.)

HES 4942 FIELD EXPERIENCE IN HEALTH AGENCIES (2)
PR: Admission to the program or Cl. A field based introduction to the role and responsibilities of a health educator in a community health agency. (S/U only.)

HES 4943 FIELD EXPERIENCE IN HEALTH AGENCIES (6)
PR: Acceptance in the Program and HES 4143, HES 4700 (for Non-Cert.) or Cl. To be taken concurrently with HES 4750. Supervised field experience in selected health agency programs. (S/U only.)

HES 4945 INTERNSHIP (1-4)
Part-time internship in a accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. (S/U only.)

HES 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

HES 5328C HEALTH PROBLEMS OF SCHOOL AGE POPULATION (3)
A study of health problems and needs of school age students including a health status screening laboratory.

HIGHER EDUCATION

GRADUATE COURSES

EDH 6061 THE JUNIOR COLLEGE IN AMERICAN HIGHER EDUCATION (4)
History of higher education, philosophical and cultural bases for definition of its role, and contemporary issues, such as control, financing, and curricular patterns. The place and problems of the community junior college will be central concerns of this course.

EDH 6938 SEMINAR IN COLLEGE TEACHING (3)
Implications of learning theory and student characteristics for teaching at the college level. Types of teaching procedures, innovation, evaluation, student freedom and responsibility for learning.

HUMANITIES EDUCATION

UNDERGRADUATE COURSES

HUM 4870 CURRENT TRENDS IN THE TEACHING OF HUMANITIES (3)
Curricular patterns, materials, and instructional practices in the teaching of humanities.

HUM 4909 DIRECTED STUDY: HUMANITIES EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

HUM 4936 SENIOR SEMINAR IN HUMANITIES EDUCATION (2)

HUM 4940 INTERNSHIP HUMANITIES EDUCATION (1-12)
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)
EVT 4134 METHODS OF TEACHING: DIVERSIFIED COOPERATIVE TRAINING (3) Methods, techniques, and materials for instruction. This course specializes in Diversified Cooperative Training.

EVT 3063 THE TEACHER IN THE WORLD OF WORK (3) A study of educational efforts in preparing people for work, the relationship of a job to a man's life style, and the concept of education as a life-long process.

EVT 4061C TEACHING IN INDUSTRIAL-TECHNICAL EDUCATION (1-3) An overview of the ITE instructor's roles and responsibilities concerning students, the school and community and a look at the organization of vocational education, liability, and professionalism.

EVT 4065 HISTORY AND PRINCIPLES OF VOCATIONAL EDUCATION (4) An overview of current policies and principles in ITE Education including their historical, sociological, and philosophical bases. Open to majors and non-majors.

EVT 4064C PROFESSIONAL DEVELOPMENT IN INDUSTRIAL-TECHNICAL EDUCATION (1-3) Designed for the ITE teachers in forming plans of professional development. Competencies include the development of a personal education philosophy; attributes in creating harmonious school-community relationships; and desirable staff and teacher associations.

EVT 4176 CURRICULUM CONSTRUCTION: INDUSTRIAL-TECHNICAL EDUCATION (4) PR: EVT 4364 or CI. Design, development, implementation and evaluation of effective curricular materials in industrial, technical and health related occupations; includes individualized and self-paced materials. Open to majors and non-majors.

EVT 4254 PROGRAM MANAGEMENT: INDUSTRIAL-TECHNICAL EDUCATION (4) PR: CI. Planning, organizing, motivating and controlling the learning environment in Industrial-Technical Education Classroom and Laboratories. Program standards for OSHA, program review, record keeping, and budgeting will be examined.

EVT 4263 ORGANIZATION AND ADMINISTRATION OF STUDENT VOCATIONAL ORGANIZATIONS (1-4) Includes the organization and administration of the local student vocational organization in industrial, health occupations, business and distributive education.

EVT 4311 TEACHING METHODS: HEALTH OCCUPATIONS (4) PR: EVT 4364 or CI. Equips health occupations instructors with professional competencies for classroom, laboratory and clinical settings. Includes selection of appropriate methods, planning, and delivery of effective demonstrations, use of media and supervision of students in clinical areas.

EVT 4364 BASIC TEACHING METHODS IN VOCATIONAL EDUCATION (4) Examines the role of the vocational instructor in the teaching-learning process; looks at factors that promote and inhibit learning particularly for adults. Reviews a wide variety of instructional approaches, techniques and methods; includes selection of techniques for situations.

EVT 4365 SPECIAL TEACHING METHODS: INDUSTRIAL-TECHNICAL EDUCATION (4) PR: EVT 4364 or CI. Instructional techniques in industrial-technical education. Vocational Industrial Clubs of America activities may be included.

EVT 4367 ASSESSING STUDENT SKILL IN INDUSTRIAL-TECHNICAL EDUCATION (4) Techniques for assessing student's mastery of skills in industrial-technical education. Focuses on specific competencies including developing and administering performance tests, monitoring student process, and others. Open to majors and non-majors.

EVT 4540 READING SKILLS IN ADULT AND VOCATIONAL EDUCATION (2) PR: RED 4360, or CR in RED 4360. Students will study reading and communication skills as they relate to their particular content areas in Adult and Vocational-Technical Education. This course, along with RED 4360, satisfies State certification requirement pertaining to secondary reading.

EVT 4815 FACILITY DESIGN AND MANAGEMENT (3) Design and develop instructional facility floor plans consistent with modern and efficient methods of instruction as well as evaluate existing classrooms, laboratories, and shops. Selection and location of equipment. Review and prepare operational plans for the management of equipment, furniture, tools, and supplies as they relate to effective student learning.

EVT 4905 INDEPENDENT STUDY: INDUSTRIAL-TECHNICAL EDUCATION (1-4) PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

EVT 4909 DIRECTED STUDY: INDUSTRIAL-TECHNICAL EDUCATION (1-3) PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

EVT 4936 SENIOR SEMINAR IN INDUSTRIAL-TECHNICAL EDUCATION (2) PR: Senior standing. Synthesis of teacher candidate's courses in complete college program. Required concurrently with internship.

EVT 4940 INTERNSHIP: INDUSTRIAL-TECHNICAL EDUCATION (1-12) One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is divided over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

EVT 4946 SUPERVISED FIELD EXPERIENCE: INDUSTRIAL-TECHNICAL EDUCATION (1-6) PR: CI. Planned supervised functions in the area of specialization and co-ordinated with selected schools, government, offices, social agencies, businesses and industries on site.

GRADUATE COURSES

EVT 5315 PROGRAM MANAGEMENT: DIVERSIFIED COOPERATIVE TRAINING (3) Organization, coordination, and budgeting of adult, cooperative, and special programs.

EVT 5190 SCHOOL COMMUNITY DEVELOPMENT (4) This course is an approach to identifying, assessing, and analyzing, individual, institutional and community needs for the purpose of cooperative program planning, community involvement and public support.

EVT 5280 OCCUPATIONAL SAFETY AND HEALTH (OSHA) (3) Planning and organizing safety and health course content to be included in occupational education programs in Florida. Content to be identified and selected from Federal Registers, Department of Labor, Occupational Safety and Health Standards.

EVT 5366 PREPARATION AND DEVELOPMENT FOR TEACHING (4) The development of selected instructional materials, use of new educational media, performance evaluation instruments, and counseling techniques.

EVT 6191 PLACEMENT OF SEVERELY HANDICAPPED PEOPLE (3) A study of the purpose, methods, process and procedures used to plan, implement and operate a Vocational Rehabilitation Cooperative School Counseling Program.

EVT 6300 INDIVIDUALIZED INSTRUCTION (3) Attention is given to individualized instruction to include the special needs students, the slow learner, and the more capable student.

EVT 6385 ADMINISTRATION OF LOCAL PROGRAMS: VOCATIONAL (4) Organization, personnel selection and assignment, and establishment of policies and procedures for local vocational programs within federal, state and local requirements.
EVT 6386 SUPERVISION OF LOCAL PROGRAMS: VOCATIONAL EDUCATION (3)
PR: CI. A study of the factors involved in the supervision of instruction including plans for teacher education, improvement of instruction, coordination of activities, and personnel relations.

EVT 6563 CURRENT TRENDS (3)
Historical information, issues, current trends, new dimensions and problems in the area of specialization.

EVT 6769 METHODS, PROCEDURES, AND PROCESSES OF VOCATIONAL EVALUATION (3)
A study of the purposes, methods, processes and procedures used to plan, implement and operate a vocational evaluation program.

EVT 6926 STAFF DEVELOPMENT (1-5)
Implementation of new procedures addressed to discrete developmental needs of the staff as identified by an educational agency.

EVT 6930 SEMINAR (4)
PR: EDF 6431 and EDF 6481. Applied research techniques and investigation of important current issues of thesis in the area of specialization.

EVT 6940 PRACTICUM: INDUSTRIAL-TECHNICAL EDUCATION (3-6)
A problem-centered field study in the local community, school, government, office, social agency, business or industry.

EVT 7066 FOUNDATIONS AND PHILOSOPHY OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION (3)
PR: Preliminary admission to the advanced graduate program and/or CI. This course focuses on the historical development and contemporary philosophies, cultural bases and practices of Vocational, Technical and Adult Education.

EVT 7155 CAREER DEVELOPMENT IN VOCATIONAL, TECHNICAL, AND ADULT EDUCATION (3)
PR: Preliminary admission to the Graduate Program and CI. Course involves the development of a career model designed to facilitate career development of students and articulate vocational education and career guidance.

EVT 7164 VOCATIONAL AND ADULT EDUCATION PROGRAM PLANNING AN IMPLEMENTATION (3)
PR: EVT 4176, Curriculum Construction, or equivalent. Designed to equip students with the knowledge and skills necessary to participate in the initial determination, planning, organization, and the implementation of new or expanded vocational and technical education programs.

EVT 7168 INSTRUCTIONAL DEVELOPMENT FOR VOCATIONAL, TECHNICAL, AND ADULT EDUCATION (4)
PR: EDG 5206 or CI. The course is designed to develop competencies in a systematic approach to vocational, technical, and adult education curriculum improvement and instructional development. Students will apply an instructional systems approach to the development of practical solutions to critical teaching and learning problems.

EVT 7760 RESEARCH SEMINAR IN VOCATIONAL, TECHNICAL, AND ADULT EDUCATION (3)
PR: Completion of program requirements in measurement and research or CI. Examination and critical evaluation of research in a particular specialization area of Vocational, Technical, or Adult Education. Preparation of an individual research prospectus. Available to majors only. Repeatable up to six credit hours.

LIBRARY, MEDIA, AND INFORMATION STUDIES

UNDERGRADUATE COURSES

LIS 2001 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.)

LIS 3500 ADVANCED INFORMATIONAL MATERIALS (2)
PR: Upper level standing or CI. Basic skills in designing and preparing audiovisual materials for wide variety of instructional and communicative purposes.

LIS 4505 AUDIOVISUAL EQUIPMENT AND MATERIALS (2)
PR: Upper level standing or CI. Basic skills in selecting, presenting, and evaluating audiovisual programming.

GRADUATE COURSES

COP 6242 COMPUTER PROGRAMMING FOR LIBRARIES AND INFORMATION CENTERS (3)
Programming of library-oriented computer applications using the PL/C programming language. Emphasis on programming of library technical services operations and information retrieval and dissemination systems.

LIS 5315 INSTRUCTIONAL GRAPHICS (3)
PR: CI. Theoretical aspects, planning and production of instructional graphic material. The theory of graphic communications. Interpreting needs for instructional materials appropriate for given behavioral objectives.

LIS 5316 PREPARING SINGLE CONCEPT FILMS (3)
PR: CI. Techniques and procedures in the preparation of educational films. Ascertaining concepts, script writing, graphics, lighting, filming, editing.

LIS 5333 TV IN SCHOOL AND LIBRARIES (3)
Small format video tape recordings and the utilization of open and closed broadcasts in schools and libraries.

LIS 5404 FOUNDATIONS OF LIBRARIANSHIP (3)
Overview of and introduction to the library service; history; organization; specialized literature; outstanding leaders; current trends, issues, and problems. Place of the library in society with its contributions to that society.

LIS 5434 COMMUNITY COLLEGE LIBRARIANSHIP (4)
Introduction to the community college concept, examination of the basic problems of libraries, functions, purposes, directions, programs, etc., inherent in both the community college and the library resources center which serves it.

LIS 5937 SELECTED TOPICS IN LIBRARY STUDIES (1-4)
PR: CI. Covers a variety of topics in such areas as collection development, reference services, technical services, and administration.

LIS 6110 HISTORY OF LIBRARIES (3)
Development of libraries as found from the earliest records to the great libraries of modern times and the library as a social institution.

LIS 6111 HISTORY OF CHILDREN'S LITERATURE (3)
Historical bibliographical survey of imaginative and informational literature for children.

LIS 6119 CONTEMPORARY PUBLISHING AND PRINTING (3)
PR: LIS 6520. A survey of book publishing as it is carried on today, primarily in the United States. Emphasis on structure of the industry, economic conditions, technological developments, social functions of book publishing and distribution. Complementary relations between libraries and publishing.

LIS 6202 INTRODUCTION TO BIBLIOThERAPY (4)

LIS 6203 READING GUIDANCE PROGRAMS IN LIBRARIES AND CLASSROOMS (3)
Working with factors and forces influencing reading habits of children and youth; programs for teaching investigative and library skills; materials and methods for guidance of reading, listening and viewing.

LIS 6206 ADULT SERVICES IN LIBRARIES (4)
PR: LIS 6520 or CI. Traditional and innovative services for adults in public and other types of libraries, including those for special groups such as the aging, handicapped, and institutionalized.

LIS 6225 STORYTELLING (3)
PR: CI or LIS 6386. Building storytelling programs for school and public libraries or other educational institutions. Analysis of historical aspects, material suitable for use and audience reaction.

LIS 6260 INFORMATION SCIENCE IN LIBRARIANSHIP (4)
Historical overview of the emergence of information science as a discipline. The fundamental concepts of information retrieval systems and subsystems, related information technologies, including indexing and abstracting, and their applications to the field of librarianship.

LIS 6261 LIBRARY SYSTEMS PLANNING (3)
Application of systems planning and data processing technology to library files. Emphasis on analysis of selected library subsystems.

LIS 6271 RESEARCH METHODS IN LIBRARIANSHIP (2)
Overview of present status of research in library and information science; introduction to research methods and their application to librarianship; designed to prepare students to evaluate and plan
research studies relating to library and information science.

**LIS 6273 ADVANCED RESEARCH METHODS IN LIBRARIANSHIP**

**PR:** LIS 6271. Development and implementation of research proposal relating to library and information science including the collection and analysis of data and preparation of the research report.

**LIS 6313 PREPARING INSTRUCTIONAL MEDIA**

**PR:** Fundamentals of preparing and using audiovisuals as they relate to the communication process.

**LIS 6402 ADVANCED LIBRARY ADMINISTRATION**

**PR:** CI. Applications of staff management principles to library situations. Includes staff roles in current and future operations, application of library performance measures to determine staff effectiveness; preparation of budgets and personnel reports; problems of special classes of library workers such as volunteers and students.

**LIS 6409 INTRODUCTION TO LIBRARY ADMINISTRATION**

**PR:** CI. Behavioral approach to libraries as organizations; administrative principles, theories, and problems of all types of libraries; methods of administration; use of case studies; role plays; and in-class activities.

**LIS 6428 AUDIOVISUAL ADMINISTRATION**

**PR:** LIS 6312 and LIS 6508 or CI. Audiovisual administrative practices in school systems and junior colleges.

**LIS 6432 SEMINAR IN ACADEMIC LIBRARIES**

**PR:** LIS 6409. Identification of problems and critical examination of methods in administrative areas of technical, student, and teaching services, fiscal and legal responsibilities, staff organization and supervision in academic libraries.

**LIS 6445 SEMINAR IN PUBLIC AND INSTITUTIONAL LIBRARIES**

**PR:** LIS 6409 or CI. Critical examination of public and institutional library administration, services, resources, and facilities at the municipal, county, and regional levels. Role of state and federal governments in library development.

**LIS 6451 THE ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER**

**PR:** CI. Media quarters, facilities, collections, equipment, and services. Principles of organization and administration of media programs in elementary and secondary schools. Field trips to area media centers required.

**LIS 6463 LIBRARY NETWORKS AND SYSTEMS**

**PR:** LIS 6409 or LIS 6426 or LIS 6455. Development of library networks at the local, state, regional, and national levels with consideration of organization, administration, services, funding and legislation.

**LIS 6472 SEMINAR IN SPECIAL LIBRARIES**

**PR:** LIS 6409. Identification of problems and critical examination of methods in administrative areas of technical and special service clientele; fiscal and legal responsibilities, staff organization and services in special libraries.

**LIS 6473 LAW LIBRARIANSHIP**

**PR:** LIS 6608, LIS 6735, or CI. Course designed to give students an understanding of all aspects of law librarianship, including selection, acquisition, organization, and use of information resources of the law researcher. Emphasis on books, microforms, and computerized legal systems used for legal research, and on work products of lawyers.

**LIS 6477 HEALTH SCIENCES LIBRARIANSHIP**

**PR:** LIS 6260, LIS 6409, LIS 6608, or LIS 6735, or CI. All aspects of health science librarianship, including administration, acquisition, organization, and use of information resources for persons in the health fields such as physicians, medical students, nursing students, allied health personnel and students, and researchers. Field trip may be required.

**LIS 6502 SERIAL PUBLICATIONS IN LIBRARIES**

**PR:** LIS 6735 or CI. The organization and management of serial publications in libraries, including principles and practices in cataloging serials.

**LIS 6506 AUDIOVISUAL UTILIZATION**

**PR:** Examination (and utilization) of non-print media. Characteristics of media, equipment and paradigms of use.

**LIS 6508 THE CURRICULUM AND INSTRUCTIONAL TECHNOLOGY**

**PR:** Effective utilization of instructional materials as they relate to specific areas of the curriculum in elementary and high school programs.

**LIS 6520 BUILDING LIBRARY COLLECTIONS**

**PR:** LIS 6608 or CI. Developmental approach to building library collections of both print and non-print materials. Emphasis upon evaluation, selection and acquisition of library materials as they uphold the objectives of the institutions for which they are selected and acquired.

**LIS 6572 BOOKS AND RELATED MATERIALS FOR YOUNG ADULTS**

**PR:** Young adult materials for use in secondary school libraries, young adult sections of public libraries and other institutions serving youth. Equal emphasis upon 1) selection and bibliographical sources as well as upon 2) utilization in terms of service to the young adult.

**LIS 6586 MATERIALS FOR CHILDREN**

**PR:** Examination of materials for all institutions in which children are served: school media centers, public libraries, kindergartens, etc. Stress on selection aids, reviewing techniques, utilization.

**LIS 6605 ADVANCED INFORMATION SOURCES AND SERVICES**

**PR:** LIS 6608. Reference materials in the humanities, social sciences, science and technology.

**LIS 6608 BASIC INFORMATION SOURCES AND SERVICES**

**PR:** An in-depth examination of the basic sources of information in the general library; discussion of bibliographical control of all community media, with emphasis on those tools which are of most value to general reference services; and the provision of various types of reference services.

**LIS 6609 AUTOMATED INFORMATION SOURCES AND SERVICES**

**PR:** LIS 6608, LIS 6260, or CI. Principles of on-line searching and on-line retrieval systems, selection and utilization of non-print media. Characteristics of print and non-print information. Some hands-on experience. (S/U Only.)

**LIS 6610 INFORMATION SOURCES AND SERVICES IN THE HUMANITIES**

**PR:** LIS 6608 or CI. Detailed consideration of the bibliographical and reference materials in the humanities with training and practice in their use for solving problems arising in the reference service.

**LIS 6620 INFORMATION SOURCES AND SERVICES IN THE SOCIAL SCIENCES**

**PR:** LIS 6608. Detailed consideration of the bibliographical and reference materials in the social sciences with training and practice in their use for solving problems arising in reference service.

**LIS 6630 INFORMATION SOURCES AND SERVICES IN SCIENCE AND TECHNOLOGY**

**PR:** LIS 6630 or CI. Explores alternatives to traditional systems of handling biological, pharmaceutical, medical, toxicological, environmental, as well as technical information. Selected systems not based on words are studied.

**LIS 6651 BOOKS AND RELATED MATERIALS OF LATIN AMERICAN COUNTRIES SUITABLE FOR CHILDREN AND YOUNG PEOPLE**

**PR:** Bibliographic sources, aids and tools for the selection and utilization of Latin American books and related materials suitable for children and young people. Examination of representative materials in terms of the basic principles and criteria of selection for libraries.

**LIS 6661 GOVERNMENT DOCUMENTS**

**PR:** The nature of state, federal, United Nations, and international documents, their reference and research value; the techniques of acquisition, organization and reference use.

**LIS 6724 CLASSIFICATION AND CATALOGING OF NON-BOOK MATERIALS**

**PR:** Principles of general library practice in technical services operations. Emphasis on descriptive cataloging; and use of unabridged Dewey Decimal Classification.

**LIS 6745 ADVANCED CATALOGING**

**PR:** LIS 6735. Introduction to and practice in using selected schedules of the Library of Congress Classification System and the Library of Congress Subject Heading List; changing policies and procedures in cataloging and an introduction to and use of the MARC format for inputting cataloging data into machine readable files.
LIS 6906 INDEPENDENT STUDY (1-4)
PR: 20 hours earned in program and consent of advisor. (S/U only.)

LIS 6946 SUPERVISED FIELD WORK (4)
PR: CI. Supervised experience in an approved cooperating library. Includes practice work, seminar sessions and individual conferences, a progress report, and a final report on the field experience.

LIS 7406 ADVANCED FOUNDATIONS OF LIBRARIANSHIP (4)
PR: LIS 6906 or CI. Emphasis in this course is upon American libraries and American library education as influenced by legislation, education, censorship, technology, the copyright provisions and other influences.

LIS 7938 ADVANCED SEMINAR IN LIBRARIANSHIP (1-4)
PR: CI. Seminar in advanced areas of current importance in library, media, and information science. Primarily for students enrolled in specialist and doctoral programs.

MATHEMATICS EDUCATION

UNDERGRADUATE COURSES

CAP 4100 COMPUTING DEVICES IN THE EDUCATIONAL PROCESS (3)
Characteristics of computing devices, flow charting, programming, classroom management techniques, teaching materials, and applications will be discussed.

MAE 4320 TEACHING JUNIOR HIGH SCHOOL MATHEMATICS (3)
PR: 18 semester hours of mathematics or CC. Techniques and materials of instruction in junior high school mathematics.

MAE 4330 TEACHING SENIOR HIGH SCHOOL MATHEMATICS (3)
PR: EDG 4200 or CR in EDG 4200 and admission to teacher education program in mathematics. Techniques and materials of instruction in mathematics.

MAE 4885 READING THE LANGUAGE OF MATHEMATICS (3)
PR: Reading in Secondary Content Areas, Teaching Senior High School Mathematics, or CR in Teaching Senior High School Mathematics. Methods of teaching students to read the language of mathematics.

MAE 4905 INDEPENDENT STUDY: MATHEMATICS EDUCATION (1-4)
PR: CI. Specialized independent study determined by the student’s interests. May be repeated when subjects vary. (S/U only.)

MAE 4909 DIRECTED STUDY: MATHEMATICS EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

MAE 4936 SENIOR SEMINAR IN MATHEMATICS EDUCATION (2)

MAE 4940 INTERNSHIP: MATHEMATICS EDUCATION (1-12)
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

MAE 4945 INTERNSHIP (1-4)
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. (S/U only.)

MAE 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

MAE 5636C THE UTILIZATION OF LABORATORY TECHNIQUES IN THE TEACHING OF MATHEMATICS (3)
PR: 12 semester hours of mathematics or CC. In this course students will make an examination of a variety of sample laboratory lessons along with methods for creating and evaluating such lessons.

MAE 6136 CURRENT TRENDS IN SECONDARY MATHEMATICS EDUCATION (3)
PR: MAE 4330 or CC. Curricular patterns and instructional practices in secondary mathematics.

MAE 6337 TOPICS IN TEACHING ALGEBRA (1-4)
PR: Undergraduate degree in mathematics or certification in secondary school mathematics. Topics in algebra, philosophy, new trends, and methods of teaching secondary school algebra. May be repeated for a maximum of four hours.

MAE 6338 TOPICS IN TEACHING GEOMETRY (1-4)
PR: Undergraduate degree in mathematics or certification in secondary school mathematics. Topics in geometry, philosophy, new trends, and methods of teaching secondary school geometry. May be repeated for a maximum of four hours.

MAE 6356 TEACHING OF PRE-SECONDARY SCHOOL MATHEMATICS (3)
PR: 12 semester hours of mathematics or CC. Development of strategies and materials for teaching mathematical concepts and skills appropriate to pre-secondary school years. May be repeated for credit up to 9 hours.

MEASUREMENT-RESEARCH

UNDERGRADUATE COURSES

EDF 4430 MEASUREMENT FOR TEACHERS (3)
PR: Upper level standing. Concepts and skills related to planning, developing, administering, and interpreting classroom tests; interpreting standardized tests; and evaluating and reporting student progress.

GRADUATE COURSES

EDF 6431 FOUNDATIONS OF MEASUREMENT (3)
Fundamental descriptive statistics, basic measurement concepts, role of measurement in education, construction of teacher-made tests and interpretation of standardized tests.

EDF 6481 FOUNDATIONS OF EDUCATIONAL RESEARCH (3)
PR: EDF 6431. Major types of educational research, with emphasis upon understanding the experimental method.

EDF 7407 STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH I (4)
Theory and application of statistical procedures to problems in education; (1) descriptive statistics, (2) probability-sampling distributions, (3) inferential statistics-interval estimation, tests of significance (Z, T, F). Coordinated use of computer may be included.

EDF 7408 STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH II (4)
PR: EDF 7407 or CI. Theory and application of statistical procedures to problems in education; (1) ANOVA-factorial; ANCOVA; (2) non-parametric statistics; (3) multiple correlation and regression - a specific technique and a general approach to data analysis. Coordinated use of computer may be included.

EDF 7409 STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH III (3)
PR: EDF 7408 or CI. Theory of and application of experimental design and linear modeling to problems in educational research. Multiple correlation and regression—a specific technique and a general approach to statistical inference (analysis of variance and covariance). Elements of matrix algebra. Coordinated use of computer as a data processing resource.

EDF 7410 DESIGN OF SYSTEMATIC STUDIES IN EDUCATION (4)
PR: EDF 7408 or equivalent or CI. Theory and application of experimental design and linear modeling to problems in educational research. Multiple correlation and regression—a specific technique and a general approach to statistical inference (analysis of variance and covariance). Elements of matrix algebra. Coordinated use of computer as a data processing resource.
EMR 4301 INTRODUCTION TO MENTAL RETARDATION
PR: EEX 3010. Introduction to the classification, diagnosis, characteristics, and treatment of the mentally retarded.

EMR 3800 UNDERGRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION
PR: EMR 3011 and major in Mental Retardation. Supervised Practicum experiences in the educational, social and vocational programming for mentally retarded individuals. A one hour per week seminar is required concurrently. Repeatable up to a total of 8 hours credit.

EMR 4310 PROCEDURES AND MATERIALS FOR ELEMENTARY AGE EDUCABLE MENTALLY RETARDED CHILDREN
PR: EMR 3011, RED 4310, a current major in an Exceptional Child program, EMR 3800 either previously or concurrently. Special class organization, curriculum development, procedures and materials for elementary age educable mentally retarded children.

EMR 4313 PROCEDURES AND MATERIALS FOR SECONDARY AGE EDUCABLE MENTALLY RETARDED YOUTH AND ADULTS
PR: EMR 3011 and Exceptional Child Education major. Special class organization, curriculum development, procedures and materials for secondary age educable mentally retarded youth and adults.

EMR 4311 EDUCATIONAL PROCEDURES FOR THE TRAINABLE MENTALLY RETARDED
PR: EMR 3011 and an Exceptional Child Education major. Special class organization, curriculum development, methods and techniques of teaching the trainable retarded.

EMR 4805 INDEPENDENT STUDY: MENTAL RETARDATION
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

EMR 4909 DIRECTED STUDY: MENTAL RETARDATION
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

EMR 4930 SENIOR SEMINAR IN MENTAL RETARDATION

EMR 4940 INTERNSHIP: MENTAL RETARDATION
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

EMR 4945 INTERNSHIP
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. (S/U only.)

EMR 4946 INTERNSHIP
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

EMR 5012 THE SLOW LEARNER IN THE SCHOOL
Characteristics, needs and educational planning for the slow learning child. Appropriate for special class teachers and regular class teachers.

EMR 5803 GRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION
Supervised graduate practicum encompassing teaching and supervising experiences in a public school class for the mentally retarded.

EMR 6052 SOCIAL, BIOLOGICAL, AND EDUCATIONAL ASPECTS OF MENTAL RETARDATION
PR: Graduate standing, Introductory course in exceptioned student education. In-depth exploration of the complex social and biological aspects of mental retardation with particular reference to effects on education.

EMR 6303 ADVANCED EDUCATIONAL PROCEDURES FOR THE MENTALLY RETARDED
PR: EMR 4310 or EMR 4321, EEX 6201. In depth study of specific curriculum and methodological problems in teaching the retarded.

MUSIC EDUCATION

UNDERGRADUATE COURSES

MUE 2420 THEORETICAL BASES OF MUSIC EDUCATION
The course is designed to investigate music education practices in the schools. It provides the student with experiences and information early in his academic career which will enable him to determine his commitment to professional music education.

MUE 3411 CHORAL MATERIALS PRACTICUM
PR: CI. A study of choral materials in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each semester. May be repeated for a total of 2 credit hours.

MUE 3413 BAND MATERIALS PRACTICUM
PR: CI. A study of band materials, in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each semester. May be repeated for a total of 2 credit hours.

MUE 3414 ORCHESTRA MATERIALS PRACTICUM
PR: CI. A study of orchestra materials, in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each semester. May be repeated for a total of 2 credit hours.
MUE 4050 FOUNDATIONS OF INSTRUMENTAL MUSIC
PR: CI, Junior standing. Introduction to the foundations of instrumental music instruction in the elementary and middle school.

MUE 4130 CLASSROOM MUSIC IN THE SECONDARY SCHOOL
PR: CI. Development and implementation of methods and techniques for teaching music to the student not participating in secondary school music performing groups.

MUE 4314 MUSIC IN THE ELEMENTARY SCHOOL
A study of principles, techniques, materials, and activities as they relate to a comprehensive music curriculum in Grades K-6.

MUE 4331 CHORAL METHODS IN THE SECONDARY SCHOOL

MUE 4332 INSTRUMENTAL MUSIC IN THE SECONDARY SCHOOL
PR: CI, Junior standing. Development and implementation of methods and techniques for teaching secondary school instrumental music.

MUE 4480 BAND PAGEANTRY
This course is designed as an elective offering for instrumental music majors who expect to direct band activities in a secondary school. It will provide the student with skills in creating half-time shows, and integral part of the band teacher's responsibilities.

MUE 4905 INDEPENDENT STUDY: MUSIC EDUCATION

MUE 4936 SENIOR SEMINAR IN MUSIC EDUCATION
PR: Senior standing. Synthesis of music teacher candidate's courses in complete college program. Required concurrently with internship.

MUE 4940 INTERNSHIP: MUSIC EDUCATION
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

MUE 4945 INTERNSHIP
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of the year experiences when taken in Fall Semester. (S/U only.)

MUE 4946 INTERNSHIP
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

MUE 6080 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION
PR: Acceptance into Music Education Graduate Program or CI. Investigation of historical, philosophical and psychological foundations of music education.

MUE 6116 ADVANCED ELEMENTARY SCHOOL MUSIC
PR: Acceptance in the Music Education Graduate Program or CI. Study and appraisal of children's musical growth, curriculum plans, materials and teaching techniques essential for the sequential development of musical learning.

MUE 6189 MUSIC SUPERVISION AND ADMINISTRATION
The music curriculum in relation to the total school program; staff and budgetary needs.

MUE 6415 ADVANCED SECONDARY VOCAL MUSIC
PR: Acceptance in the Music Education Graduate Program or CI. Course provides for graduate students in music education the opportunity to examine current research related to the teaching of secondary school vocal music, evaluate curricula, music materials, and teaching methods that will enable them to develop a vocal music program which emphasizes musical sensitivity.

MUE 6490 ADVANCED MATERIALS FOR INSTRUMENTAL MUSIC EDUCATION
PR: Acceptance in the Music Education Graduate Program and CI. Course designed to examine published and unpublished materials, develop curricula and resources, including media hardware, appropriate for use in school instrumental music programs.

MUE 6495 INSTRUMENTAL CONDUCTING IN THE SECONDARY SCHOOLS
PR: Acceptance in the Music Education Graduate program or CI. Course designed to develop skills of analysis and interpretation needed by school instrumental music teachers. Class activities include laboratory sessions and performance practices.

MUE 6496 CHORAL CONDUCTING IN THE SECONDARY SCHOOLS
PR: Acceptance in the Music Education Graduate program or CI. Course designed to develop essential conducting competencies required of a choral music director in the secondary schools.

MUE 7640 FOUNDATIONS OF MUSICAL LEARNING AND TEACHING
PR: Acceptance in the Music Education graduate program, a graduate level educational psychology course or its equivalent, or CI. A critical examination of current findings regarding the phenomena of the psychology of musical behaviors, major problems and plausible solutions to investigations of musical acoustics, the measurement of musical abilities, and a comparative study of theories of learning related to musical learning.

PHYSICAL EDUCATION FOR TEACHERS

UNDERGRADUATE COURSES

HES 2400 FIRST AID
Meets the American Red Cross certification requirements in standard and advanced first aid.

LEI 4807 COMMUNITY RECREATION
Introduction to recreational outlets in the community and the administrative problems confronting recreational playground leaders and directors of community recreational programs. Offered on Independent Study basis only.

PEQ 3101C AQUATICS
PR: Red Cross beginning swimmer's skills, or equivalent. Includes analysis and methodology of teaching swimming skills, conducting class activities, and the organization and conducting of aquatic programs in the school and the community.

PET 3001C INDIVIDUAL ASSESSMENT
A personal evaluation of various factors related to the effective teaching of physical education. An individual profile that can be used for counseling purposes will be the final product of this course.

PET 3372 HUMAN KINETICS I
The structure and function of the skeletal, muscular, and nervous systems of the human body related to developmental movement and to impairments. The mechanical laws of physics as they contribute to those movements within the body which result in efficient running, jumping, throwing, catching, striking and kicking.

PET 3381 HUMAN KINETICS II
PR: PET 3372. An application of anatomy and physiology related to physical activity. Emphasis is placed on the acute and chronic condition of the body activity as reflected at cellular level. The special needs of physical educators in working with different ages, sexes, and atypical persons are considered.

PET 3434C MOVEMENT EDUCATION THEORY AND APPLICATION I
A two course sequence emphasizing movement experiences appropriate for elementary school children. The philosophy, objectives, and analytical framework of movement education are studied relative to basic movement concepts.
PET 3435C MOVEMENT EDUCATION THEORY AND APPLICATION II (3)
PR: PET 3434C. A two course sequence emphasizing movement experiences appropriate for elementary school children. The philosophy, objectives, and analytical framework of movement education are studied relative to basic movement concepts.

PET 3943C SEMINAR AND INTERNSHIP I (5)
Elementary school physical education teaching experiences are provided for students with added focus on the upper elementary grades. Seminars emphasize planning and teaching methodology. Health and recreation as they relate to elementary school children are studied.

PET 3944C SEMINAR AND INTERNSHIP II (5)
Physical education teaching experience is provided at various grade levels. Seminars are concerned with organization, evaluation, and extra-class activities. Individual teaching is analyzed and programmed.

PET 4302 PRINCIPLES AND ISSUES IN COACHING (4)
The application of principles from philosophy, psychology, sociology, and physiology to competitive athletics and coaching.

PET 4361C APPLIED HUMAN KINETICS I (4)
The focus is on the biomechanical analysis of movement in dance and selected sports, physical fitness, and exercise principles as related to teaching. Emphasis is directed to developing competency in teaching all aspects of individual and team sports and in teaching specialized health-related topics such as weight control and individual fitness assessment techniques.

PET 4363C APPLIED HUMAN KINETICS II (4)
The biomechanical analysis of movement, principles of psychomotor learning, teaching methodologies, and teaching competencies in individual and team sports and in teaching specialized health-related topics such as weight control and individual fitness assessment techniques.

PET 4905 INDEPENDENT STUDY: PROFESSIONAL PHYSICAL EDUCATION (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

PET 4909 DIRECTED STUDY: PROFESSIONAL PHYSICAL EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

PET 4943C SEMINAR AND INTERNSHIP III (5)
Supervised teaching experiences in physical education at the secondary school level. On-campus seminars emphasize the influence of various teaching styles on the learning process; the process of individualizing learning experiences in the psychomotor, cognitive, and affective domain.

PET 4944C SEMINAR AND INTERNSHIP IV (5)
Supervised internship in physical education in the public schools or allied community-based programs. On-campus seminars explore relevant issues in the physical education profession.

PET 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. S/U only.

Enrollment in these courses requires admission to the Physical Education Program.

GRADUATE COURSES

PET 6051C PROFESSIONAL ASSESSMENT (3)
Selected reading of current trends in physical education; discussion of philosophies of teaching; and individual appraisal of knowledge, values attitudes and professional competencies.

PET 6205 SOCIO-PSYCHOLOGICAL ASPECTS OF HUMAN MOVEMENT (3)
Involves the psychological and sociological implications of movement to historical and contemporary man. Emphasis on concept, role of movement in society and values and attitudes held toward movement.

PET 6306 SPECIALIZED STUDY IN SOCIO-PsYCHOLOGICAL ASPECTS OF HUMAN MOVEMENT: SUBJECT (1-4)
Will provide in-depth study in specific areas related to sociological and psychological principles of human movement. May be repeated for credit.

PET 6345 BIO-KINETICS OF HUMAN MOVEMENT (3)
Integration of basic kinesiological foundations applied to teaching physical education. Specific topics include: physical growth and neuro-muscular development, physical principles of human movement and the effects of exercise on the muscular and cardiorespiratory systems.

PET 6396C SPECIALIZED STUDY IN BIO-KINETICS OF HUMAN MOVEMENT (1-4)
Will provide in-depth study in specific areas related to neurological, physiological, and mechanical principles of human development. May be repeated for credit.

PET 6425 CURRICULUM AND INSTRUCTIONAL PROCESS IN PHYSICAL EDUCATION (3)
Application of learning theory and education innovations, study of structure of subject matter and styles of teaching and investigation of the nature of the learner as these relate to teaching physical education. Fieldwork may be a requirement of this course.

PET 6496 SPECIALIZED STUDY IN CURRICULUM AND INSTRUCTIONAL PROCESS IN PHYSICAL EDUCATION (1-4)
Will provide in-depth study in specific areas related to the teaching-learning process of physical education. May be repeated for credit.

PET 6645 PHYSICAL EDUCATION FOR THE HANDICAPPED (4)
The course is concerned with the motor performance and physical fitness of handicapped individuals. Study includes psycho-educational characteristics; planning, conducting, and evaluating individualized programs of physical education; and review of relevant literature. Fieldwork may be required.

PET 6646 PHYSICAL EDUCATION FOR THE HANDICAPPED PRACTICUM (2-4)
PR: PET 6645 or CI. School or treatment center based on experiences providing evaluation and instructional services. Seminars are conducted to discuss professional literature, teaching strategies and curriculum organization and evaluation. May be repeated for credit.

PET 6901L RESEARCH PROJECT IN PHYSICAL EDUCATION (1-4)
In-depth research study of selected topics concerning human movement. Topics will vary according to needs and interests of students. May be repeated for credit.

READING EDUCATION

UNDERGRADUATE COURSES

RED 4310 READING FOR THE CHILD (3)
PR: Admission to College of Education. Prereading, word recognition, comprehension and basic study skills and various reading approaches and reading interests.

RED 4337 READING IN THE SECONDARY SCHOOL (3)
PR: CI. Basic course in Reading for Secondary school personnel. Work with a student is required.

RED 4360 READING IN SECONDARY CONTENT AREAS (2)
PR: CI and other content area PR or CR. Provides basic instruction on phonics, word recognition, readability, interests, corrective procedures, reading behaviors, comprehension. Offered only in conjunction with special content reading courses.

RED 4515 CORRECTIVE READING FOR THE CHILD (3)
PR: RED 4310 or equivalent. Procedures for meeting individual differences through diagnosis of needs, differentiated instruction, selected use of materials, and classroom organization.

RED 4905 INDEPENDENT STUDY: READING EDUCATION (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

RED 4909 DIRECTED STUDY: READING EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

RED 4945 INTERNSHIP (1-4)
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. (S/U only.)

RED 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental ap-
GRADUATE COURSES

RED 614 FOUNDATIONS OF ELEMENTARY READING INSTRUCTION (3)
PR: RED 4310 or equivalent course. Study of approaches, materials, and procedures in Elementary Reading instruction, with emphasis on pertinent research. Not for undergraduate nor to be used as a first course in Reading.

RED 574 CURRICULUM AND SUPERVISION PROBLEMS IN READING (3)
PR: EDF 6431, RED 6116, RED 6546, or CI. Planning and administering programs and preparation as consultants in reading. Intensive work on individual project required.

RED 575 READING IN SECONDARY AND HIGHER EDUCATION (3)
PR: CI and graduate standing; RED 4310, RED 4337, or RED 4360. Designed for students and inservice teachers with appropriate B.A. degrees. Content covers Secondary, Community College and University levels. Organization permits student to work on applications to their levels and disciplines. Research paper required.

RED 576 CORRECTIVE READING IN THE CLASSROOM (3)
PR: RED 4310 or equivalent. Use of diagnostic and prescriptive procedures with individual and group reading instruction.

RED 577 DIAGNOSIS OF READING DISABILITIES (3)
PR: EDF 6431, RED 6116. Causes of reading disability; techniques and materials in diagnosis of reading problems, including telebinocular and audiometer screening. Diagnoses of reading disabilities are required.

RED 578 TECHNIQUES OF REMEDIAL READING (3)
PR: EDF 6431, RED 6116, and RED 6546. Materials and methods in remediation of moderate to severe reading disability cases. Supervised individual tutoring and in-depth evaluation and use of materials.

RED 579 SURVEY OF READING RESEARCH (2)
PR: EDF 6431, RED 6116, RED 6546, CI. This course will address topics related to the location of research information, to the reading and evaluation of research, and to the identification and understanding of important studies. May be repeated up to 4 hours.

RED 678 PROJECT IN READING RESEARCH (2)
PR: EDF 6431, EDF 6481, RED 6116, RED 6546, RED 6747, CI. This course continues the study of research in reading and culminates in a written paper reviewing the research in a specific area. May be repeated up to 6 hours.

RED 638 PRACTICUM IN READING AS A SYMBOLIC PROCESS (3)
PR: RED 6116 or RED 6365. Advanced graduate standing in Reading/Language Arts or CI. Examination and understanding of the relationship of the various perceptual, learning, affective, and cognitive processes to the acquisition of reading competencies.

RED 784 ADVANCED CLINICAL PRACTICUM READING (3-6)
PR: EDF 6143, RED 6546, RED 6548, and RED 6838, and Advanced Graduate standing in Reading/Language Arts. Clinical diagnosis and remediation of severe reading disability cases with emphasis on multidisciplinary approach. May be repeated for a maximum of six hours.

RED 793 ADVANCED GRADUATE SEMINAR IN READING/LANGUAGE ARTS (2)
Discussion and evaluation of current issues and research in Reading/Language Arts and related fields. Must be repeated for six semester hours. Required for each Ph.D. student. (Topics differ each semester.)

SCIENCE EDUCATION UNDERSGRADE COURSES

SCE 4305 COMMUNICATION SKILLS IN THE SCIENCE CLASSROOM (2)
PR: RED 4360 or CR in RED 4360. Reading and communication skills important in understanding scientific literature and communicating findings to others.

SCE 4320 TEACHING METHODS FOR JUNIOR HIGH SCHOOL SCIENCE (3)
PR: Completion of 25 semester hours of Science or CI. Survey techniques and materials unique to science, Grades 7-9. Not designed for high school certification purposes.

SCE 4330 TEACHING METHODS IN THE SECONDARY SCHOOL SCIENCES (3)
PR: Completion of 26 hours in approved science areas of CE completion of EDG 4200 or CR in EDG 4200. Techniques and materials of instruction in secondary school sciences.

SCE 4630 NEW TRENDS IN TEACHING THE PHYSICAL SCIENCES (3)
Physical Science Study Committee Physics. Chemical Education Materials Study and other new approaches to the teaching of the physical sciences. Recommended for teachers of Physics, Chemistry and Earth Sciences.

SCE 4631 NEW TRENDS IN TEACHING BIOLOGY (3)
Recent developments in curriculum materials and in strategies for teaching biological sciences, Grades 7-12. Recommended for pre-service teachers of secondary school biology.

SCE 4900 INDEPENDENT STUDY: SCIENCE EDUCATION (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

SCE 4909 DIRECTED STUDY: SCIENCE EDUCATION (1-3)
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

SCE 4936 SENIOR SEMINAR IN SCIENCE EDUCATION (2)

SCE 4945 TEACHING SECONDARY SCHOOL SCIENCE EDUCATION (1-12)
One full Semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience in distributed over two or more Semesters, students will be registered for credit which accumulates from 9 to 12 Semester hours. (S/U only.)

SCE 4945 INTERNSHIP (1-4)
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. (S/U only.)

SCE 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

SCE 5937 SELECTED TOPICS IN SCIENCE EDUCATION (1-4)
May be repeated when topics are not duplicated.

SCE 6336 TEACHING SECONDARY SCHOOL BIOLOGY (3)
PR: CI. Effective use and production of instructional materials in the biological sciences. Interrelation of philosophy, materials, and classroom practices.

SCE 6430 TEACHING SECONDARY SCHOOL PHYSICAL EARTH SCIENCE (3)
PR: CI. Effective use and production of instructional materials in the physical and earth sciences. Interrelation of philosophy, materials, and classroom practices.

SCE 6634 CURRENT TRENDS IN SECONDARY SCIENCE EDUCATION (3)
PR: Bachelor's degree with major in science area: certification in secondary science, or CI. Curricular patterns and instructional practices in secondary science.

SCE 7641 PROGRAMS AND RESEARCH IN EARTH SCIENCE EDUCATION (3)
PR: Master's degree or equivalent in Science Education or CI. A study of curricula, issues, and research in Earth Science Education, grades K-12. Also included are the study and application of: (1) skills for assisting pre- and in-service school personnel with Earth Science in...
stuction; and (2) skills for developing Earth Science curricula.

**GRADUATE COURSES**

**SCE 7642 PROGRAMS AND RESEARCH IN LIFE SCIENCES EDUCATION**

PR: Master's degree or equivalent in Science Education or Cl. A study of curricula, issues and research in Life Science Education, grades K-12. Also included are the study and application of: (1) skills for assisting pre- and in-service school personnel with Life Science instruction; and (2) skills for developing Life Science curricula.

**SCE 7643 PROGRAMS AND RESEARCH IN PHYSICAL SCIENCE EDUCATION**

PR: Master's degree or equivalent in Science Education or Cl. A study of curricula, issues and research in Physical Science Education, grades K-12. Also included are the study and application of: (1) skills for assisting pre- and in-service school personnel with Physical Science instruction; and (2) skills for developing Physical Science curricula.

**SOCIAL SCIENCE EDUCATION**

**UNDERGRADUATE COURSES**

**SSE 4333 INTRODUCTION TO TEACHING SECONDARY SOCIAL SCIENCE EDUCATION**

This introductory course is concerned with the identification of the major content areas selected from the various social sciences. Topics related to selecting, organizing, and sequencing teaching materials and methods related to the unique problems of teaching teenage youth are studied.

**SSE 4334 SECONDARY SOCIAL SCIENCE EDUCATION TEACHING METHODS**

PR: SSE 4333. This course is designed to identify and study selected techniques and strategies used in social science education instruction. Emphasis is placed upon the learner's ability to demonstrate skill in selecting methods, techniques, materials and evaluative forms. Field work is a requirement.

**SSE 4640 COMMUNICATION SKILLS IN THE SOCIAL STUDIES**

PR: Cl. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

**SSE 4909 DIRECTED STUDY: SOCIAL SCIENCE EDUCATION**

PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

**SSE 4936 SENIOR SEMINAR IN SOCIAL SCIENCE EDUCATION**


**SSE INTERNSHIP: SOCIAL SCIENCE EDUCATION**

One full Semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more Semesters, students will be registered for credit which accumulated from 9 to 12 Semester hours. (S/U only.)

**SSE 4945 INTERNSHIP**

Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. (S/U only.)

**SSE 4946 INTERNSHIP**

PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. S/U only.

**GRADUATE COURSES**

**SSE 6117 ELEMENTARY SOCIAL STUDIES CURRICULUM**

PR: Admission to College of Education or Cl. Evaluation of past and present curriculum in Elementary Social Studies.

**SSE 6133 SECONDARY SOCIAL SCIENCE CURRICULUM**

PR: Admission to College of Education or Cl. Evaluation of past and present curriculum in Secondary Social Science.

**SSE 6354 CRITIQUE OF SELECTED SOCIAL SCIENCE EDUCATION LITERATURE**

PR: Major in Secondary Social Science or Cl. An investigation into various selected readings in Social Science Education literature.

**SSE 6445 EVALUATION AND IMPLEMENTATION OF MEDIA IN SOCIAL STUDIES**

PR: CI. Techniques of evaluation and using various media in the Social Studies.

**SSE 6636 CURRENT TRENDS IN SECONDARY SOCIAL STUDIES**

PR: SSE 4333 or equivalent or Cl. Curricular patterns and instructional practices in Secondary Social Studies.

**SSE 6647 INSTRUCTIONAL PROBLEMS AND STRATEGIES IN SOCIAL STUDIES: ELEMENTARY, MIDDLE, OR SECONDARY SCHOOL**

PR: Admission to Secondary Social Science or Cl. Investigation of problems confronted when teaching Social Studies in the elementary, middle, or secondary school.

**SSE 6795 REVIEW OF RESEARCH IN SOCIAL SCIENCE EDUCATION**

PR: Admission to Secondary Social Science or Cl. A study of curricula, issues and research in Social Science Education.

**SSE 6939 SEMINAR IN SOCIAL SCIENCE EDUCATION**

PR: EDF 4430 or EDF 6431. Graduate Students in Education or Cl. Investigation into and an evaluation of the research in Social Science Education.

**SPECIFIC LEARNING DISABILITIES EDUCATION**

**UNDERGRADUATE COURSES**

**ELD 4011 THEORIES IN SPECIFIC LEARNING DISABILITIES**

PR: EEX 3010. Characteristics, needs and abilities of children with specific learning disabilities. Emphasis is on theories, issues, trends, and philosophy of problems for such children.

**ELD 4110 SKILLS IN DIAGNOSIS AND INSTRUCTION FOR CHILDREN WITH SPECIFIC LEARNING DISABILITIES**

PR: ELD 4011 and a Specific Learning Disabilities major. Instructional diagnosis and individualizing instruction for children with specific learning disabilities.

**ELD 4905 INDEPENDENT STUDY: SPECIFIC LEARNING DISABILITIES**

PR: Cl. Specialized independent study determined by student's needs and interests. May be repeated when subjects vary. (S/U only.)

**ELD 4909 DIRECTED STUDY: SPECIFIC LEARNING DISABILITIES**

PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

**ELD 4936 SENIOR SEMINAR IN SPECIFIC LEARNING DISABILITIES**

PR: Cl. Specialized independent study determined by student's needs and interests. May be repeated when subjects vary. (S/U only.)

**ELD 4940 INTERNSHIP: SPECIFIC LEARNING DISABILITIES**

One full Semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more Semesters, the students will be registered for credit which accumulates from 9 to 12 Semesters hours. (S/U only.)

**ELD 4944 UNDERGRADUATE SUPERVISED PRACTICUM IN SPECIFIC LEARNING DISABILITIES**

PR: EEX 3010, ELD 4011, ELD 4110 and major in Specific Learning Disabilities. Supervised practicum experiences in classes for children with specific learning disabilities. Repeatable up to a total of 8 hours.

**ELD 4945 INTERNSHIP**

Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. S/U only.
**EVI 5311 THE VISUALLY HANDICAPPED IN THE CLASSROOM**

PR: EEX 3010 and CI. The visually handicapped in the classroom, structure, hygiene and educational implications.

**SPEECH COMMUNICATION-ENGLISH EDUCATION**

**UNDERGRADUATE COURSES**

SED 4335 METHODS OF TEACHING SPEECH COMMUNICATION

PR: 14 Semester hours in speech/communication or CI. Investigation of curricular program in speech communication including courses, curriculum guides, preparation of units and lessons; determination of objectives and teaching strategies; problems of teachers; completion of course with C grade required for recommendation for internship.

SED 4371 DIRECTING SPEECH ACTIVITIES IN THE SECONDARY SCHOOL

PR: 10 hours of speech communication courses or CI. Coaching and directing cocurricular activities in discussion, debate, oratory, theatre, oral interpretation, and extemporaneous speaking. Planning and supervision of tournaments, contest, and festivals. Observations required.

SED 4374 READING IN SPEECH COMMUNICATION INSTRUCTION

PR: RED 4360 or in conjunction with this course. Strategies and materials for teaching oral and silent reading in speech and theatre classes at the secondary school level.

SED 4905 INDEPENDENT STUDY: SPEECH COMMUNICATION-ENGLISH EDUCATION

PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

SED 4909 DIRECTED STUDY: SPEECH COMMUNICATION-ENGLISH EDUCATION

PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.

SED 4936 SENIOR SEMINAR IN SPEECH COMMUNICATION-ENGLISH EDUCATION


**SED 4940 INTERNSHIP: SPEECH COMMUNICATION-ENGLISH EDUCATION**

One full Semester of internship in public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the intern experience is distributed over two or more Semesters, students will be required for credit which accumulates form 9 to 12 Semester hours. (S/U only.)

SED 4945 INTERNSHIP

Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of year experiences when taken in Fall Semester. (S/U only.)

SED 4946 INTERNSHIP

PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

**EDG 5734 PLURALISM AND ITS EDUCATIONAL IMPLICATIONS**

(3)

Characteristics and needs of the culturally disadvantaged and their implications for educational programming.

**EDG 6946 FIELD WORK WITH POTENTIALLY HANDICAPPED (CULTURALLY DISADVANTAGED)**

PR: ELD 6141, EEX 6201. Advanced assessment and educational procedures for the specific learning disabled student.

**ELD 6115 ADVANCED ASSESSMENT AND PROCEDURES FOR SPECIFIC LEARNING DISABLED YOUNGSTERS**

(4)

**ELD 6141 CURRENT TRENDS, AND ISSUES RELATED TO EDUCATING SPECIFIC LEARNING DISABILITIES CHILDREN**

(4)

**EPH 5851 BIOLOGICAL AND FUNCTIONAL ASPECTS OF MOTOR AND PHYSICAL DISABILITIES**

(3)

**EPH 5852 TEACHING THE PHYSICALLY AND MULTI-HANDICAPPED STUDENT**

(3)

**EPH 5321 THE VISUALLY HANDICAPPED IN THE CLASSROOM**

PR: EEX 3010 and CI. The visually handicapped in the classroom, structure, hygiene and educational implications.
analysis of engineering design problems will be investigated.

EGN 1402 GRAPHIC ANALYSIS III
PR: EGN 1115. An elective course designed for students with limited background in pre-calculus mathematics necessary for graphical processes. Emphasis on graphical concepts of algebraic and trigonometric relationships.

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

EGN 2210 FORTRAN FOR ENGINEERS
FORTRAN programming for engineers. Solving engineering type problems using the computer; introduction to programming algorithms used by the practicing engineer.

EGN 2410 ENGINEERING PROBLEMS I

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

EGN 3312 DYNAMICS
PR: EGN 3313. Dynamics of discrete particles; kinematics and kinetics for rigid bodies. Lec.

EGN 3331 MECHANICS OF MATERIALS
PR: EGN 3321. Stress, strain, Hooke's Law; torsion, beam, column analysis; combined stresses; inelastic effects, limit design. Lec.

EGN 3334 MECHANICS OF MATERIALS LABORATORY
PR: EGN 3331. Experiments in the mechanics of deformable bodies. Lab.

EGN 3343 THERMODYNAMICS

EGN 3354C BASIC FLUID MECHANICS
PR: EGN 3321. Fundamental and experimental concepts in ideal and viscous fluid theory; momentum and energy consideration, introduction to hydraulics, pipe flow. Lecture.

EGN 3365L MATERIALS ENGINEERING I
PR: CHM 2046. EGN 3313. Structure and property relationships in engineering materials, i.e., metal, ceramic and polymer systems. Environmental effects are also treated.

EGN 3373 INTRODUCTION TO ELECTRICAL SYSTEMS I

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

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

EGN 3433L MODELING AND ANALYSIS

EGN 3443 ENGINEERING STATISTICS I
PR: EGN 3323. An introduction to the basic concepts of statistical analysis with special emphasis on engineering applications.

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

EGN 4335 COMPRESSIBLE FLOW
PR: EGN 3354C Fundamental and experimental concepts in compressible flow theory applied.

EGN 4366 MATERIALS ENGINEERING II
PR: 3365L Phase equilibria and its relation to the microstructures and properties of multiphase materials. Heat treatment and processing of steel, aluminum, and titanium alloys.

EGN 4420 NUMERICAL METHODS OF ANALYSIS

EGN 4421 ENGINEERING ANALYSIS I

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

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

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

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

GRADUATE COURSES

EGN 5422, 5423, 5424, 5425 ENGINEERING ANALYSIS II, III, IV, V
PR: CC or MAP 4302. (1) A course sequence covering 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, topics.

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

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

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

EGN 6991 GRADUATE INSTRUCTION METHODS
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

EGN 6992 GRADUATE RESEARCH METHODS
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

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

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

CHEMICAL AND MECHANICAL ENGINEERING

UNDERGRADUATE COURSES

ECH 4413 SEPARATION PROCESSES AND PHASE EQUILIBRIA
PR: EME 3103. Phase equilibria in the context of design and selection of separation processes. Familiarization with computational approaches used in process design and use of state of the art correlation for equipment specification.

ECH 4415 REACTING SYSTEMS AND CHEMICAL EQUILIBRIA
PR: ECH 4413. Equilibria and rate phenomena in reacting systems. Description of homogeneous chemical reactors for process design and control.

ECH 4615 PLANT DESIGN AND ECONOMICS
PR: Senior standing in chemical engineering and CI. This course will expose students to the design of a major process. Design problems obtained from industry are used. Attention is given to techniques for estimating capital and operating costs and methods available for selection of alternatives. Constraints imposed on design by safety and environmental protection are emphasized.
EMC 3117 TRANSPORT PROCESSES I (4)
PR: EGN 3343. Principles of momentum, heat, and mass transfer. Boundary layer theory and pipe flow. Emphasis given to pumping and metering of compressible and incompressible fluids. Selection of proper fluid handling equipment to satisfy realistic process demands.

EMC 4112 ELECTRONIC EQUIPMENT COOLING (2)
PR: EGN 3343. Principles of momentum, heat, and mass transfer. Boundary layer theory and pipe flow. Emphasis given to pumping and metering of compressible and incompressible fluids. Selection of proper fluid handling equipment to satisfy realistic process demands. Preparation of formal engineering reports covering laboratory work.

EMC 4112 ELECTRONIC EQUIPMENT COOLING (2)
PR: EGN 3343. Principles of momentum, heat, and mass transfer. Boundary layer theory and pipe flow. Emphasis given to pumping and metering of compressible and incompressible fluids. Selection of proper fluid handling equipment to satisfy realistic process demands. Preparation of formal engineering reports covering laboratory work.

EMC 4118 HEAT EXCHANGER DESIGN (3)
PR: EMC 3117 or CI. Principles of momentum, heat and mass transfer. Emphasis on process heat transfer and mass transfer operations. Selection of heat exchangers and application to humidification and scrubbing.

EMC 4302 INSTRUMENT SYSTEMS LABORATORY (1)
PR: EMC 3301 or CI. An introduction to digital devices and their applications in instrumentation, process monitoring and control.

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EMC 4303 CHEMICAL AND MECHANICAL ENGINEERING LABORATORY I (2)
PR: EGN 3343, EMC 3301. Introduction to engineering laboratory measurement with emphasis on the use of the library and the writing of technical reports. Experiments in the measurement of temperature, pressure, fluid flow, psychrometric properties of air, concentration, viscosity. Determination of mass-energy balances of simple systems. Preparation of formal engineering reports covering laboratory work.

EMC 4311 COMPUTER SIMULATION I (2)
PR: EGN 3433. CR: EMC 4314. Familiarization with and performance testing of automatic control systems.

EMC 4314 AUTOMATIC CONTROLS I (4)
PR: EGN 3433, EMC 3103, EMC 4118; CR: EMC 4411. Analysis of devices for measurement and control and factors affecting process dynamics. Block diagram representation of control systems. Modes of control implemented by single and consideration of advanced techniques such as feed forward and ratio control. Lec.-lab.

EMC 4411 COMPUTER SIMULATION I (2)
PR: EGN 3433. CR: EMC 4314. Familiarization with and performance testing of automatic control systems.

EMC 4414 COMPUTER SIMULATION II (4)
PR: EGN 3433, CR: EMC 4411. Analysis of devices for measurement and control and factors affecting process dynamics. Block diagram representation of control systems. Modes of control implemented by single and consideration of advanced techniques such as feed forward and ratio control. Lec.-lab.

EMC 4522L CHEMICAL AND MECHANICAL ENGINEERING LABORATORY III (1)
PR: EGN 3303L. Continuation of EMC 3303L with emphasis on material and energy balances of chemical and mechanical systems and processes. Lec.-lab.

EMC 4523L CHEMICAL AND MECHANICAL ENGINEERING LABORATORY III (1)
PR: EGN 3303L. Continuation of EMC 3303L with emphasis on material and energy balances of chemical and mechanical systems and processes. Lec.-lab.

EMC 4523L CHEMICAL AND MECHANICAL ENGINEERING LABORATORY III (1)
PR: EGN 3303L. Continuation of EMC 3303L with emphasis on material and energy balances of chemical and mechanical systems and processes. Lec.-lab.

EMC 4599 INDEPENDENT STUDY (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated up to 15 credit hours. (S/U only.)

EMC 4930 SPECIAL TOPICS IN CHEMICAL AND MECHANICAL ENGINEERING I (1-4)
PR: CC.

EMC 4931 SPECIAL TOPICS IN CHEMICAL AND MECHANICAL ENGINEERING II (1-4)
PR: CC.

EMC 4930 SPECIAL TOPICS IN CHEMICAL AND MECHANICAL ENGINEERING I (1-4)
PR: CC.

EMC 4931 SPECIAL TOPICS IN CHEMICAL AND MECHANICAL ENGINEERING II (1-4)
PR: CC.

EML 3264 KINEMATICS (2)
PR: MAC 3282, PHY 3040. Plane and angular motion; determination of velocities and accelerations in mechanisms. Rolling and sliding contacts, profiles, and gearing.

EML 3500 MACHINE ANALYSIS AND DESIGN I (3)
PR: EGN 3313. Stress and deflection analysis of machine parts, variable loads, endurance limits, fasteners, bearings, power transmis-

EMC 4260C DYNAMICS OF MACHINERY I (3)
PR: EML 3264. Static forces and inertia forces in machines, flywheels, balancing rotating masses, balancing reciprocating masses, gyroscopic effects, mathematical analysis of lumped parameter mechanical systems.

EMC 4503 MACHINE ANALYSIS AND DESIGN II (3)
PR: EML 3500. Continuation of EML 3500. Antifiction bearings, journal bearings, power transmission, shafting.

EML 4513 POWER PLAN ANALYSIS AND DESIGN (3)

EML 4515 PROJECT DESIGN I (3)
PR: Senior standing in mechanical engineering or CC. Comprehensive design or feasibility project requiring application of previously acquired engineering knowledge.

EML 4525 PROJECT DESIGN II (3)
PR: EML 4509 or CC. Comprehensive design or feasibility study project. In some cases may be a continuation of EML 4509.

EML 4601 REFRIGERATION AND AIR CONDITIONING (3)
PR: EMC 3103, EMC 3117. Application of thermodynamics, heat transfer, and fluid flow to sizing of HVAC systems. Heating and cooling calculations, air requirements, estimation, duct sizing.

ENU 4142 INTRODUCTION TO NUCLEAR ENGINEERING (3)
PR: EMC 3103, EMC 3117 or CI. Fundamentals of nuclear reactors, construction, physics, and fuel enrichment, reactor power cycles, transient reactor performance.

EMC 4213 ADVANCED TRANSPORT PHENOMENA (3)

EMC 4218 ADVANCED TRANSPORT ANALYSIS (3)
PR: CI. Steady and transient multi-dimensional momentum and mass transport problems, variational techniques, analytic and numerical.

EMC 4515 REACTING SYSTEMS (3)
PR: ECH 4415 or CI. Dynamics of heterogeneous reactions. Economic factors in the design of chemical reactors. Simulation of complex reacting systems.

ECH 4615 DESIGN AND CASE STUDIES (3)
PR: ECH 4615. Plant and process design with emphasis on computer aided design.

EMC 5107 INDUSTRIAL ENERGY CONSERVATION (3)

EMC 5115 PROCESS HEAT TRANSFER (3)
PR: EMC 4118. Selection and sizing of common process heat transfer equipment. Single and multiple convection in shell and tube, flat plate and spiral plate exchangers Fouling mechanisms and their control. Combined heat and mass transfer in partial condensers, spray dryers and cooling towers. Operational problems and solutions.

EMC 5119C TRANSPORT PHENOMENA PROJECTS (3)
PR: CI. Design, evaluation and feasibility study projects in transport phenomena. Content varies each term. May be repeated.

EMC 5192C HEAT TRANSFER PROJECTS (3)
PR: CI. Industrial design projects in the heat transfer field. Varies each term. May be repeated once for credit.

EMC 5304C INSTRUMENT SYSTEMS III (3)
PR: EML 4302. Microprocessors and microcomputer applications in instrumentation, process monitoring and control.

EMC 5305 INSTRUMENTAL ANALYSIS (3)
PR: CHM 2047, 2048. This course deals with the engineering bases of a variety of sophisticated instrumental techniques for chemical analysis. Emphasis is placed on the physical basis of the instrument and its design rather than on the interpretation of the
effects on closed loop system performance. Transfer characteristics of mass spectrometry and methods which depend on various transport properties.

varies each term.

PR: CC.

steady and unsteady flow.

PR: Cl. Application of finite difference and finite element techniques to control of spherical systems.

PR: CI.

fuel cells, MHD. Liquefaction and gasification will be examined including light r.f. spectroscopy, mass spectrometry and methods which depend on various transport properties.

EMC 6510 MOTOR SELECTION AND CONTROL (2)
PR: EGN 3373, EGN 3433. Standard electrical voltages. NEMA motor designs, techniques for estimating motor starting times and temperature rise. Control system elements, interlocks, electrical code requirements for conductors and protective devices.

EMC 6939 GRADUATE RESEARCH METHODS (1-4)
PR: CC. Special course to be used for training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 4 credit hours per student. (S/U only.)

EMC 6971 THESIS: MASTER (var.)
PR: CC. Repeatable (S/U only.)

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

EMC 7980 DISSERTATION: DOCTORAL (var.)
PR: Must be admitted to doctoral candidacy. Repeatable. (S/U only.)

EMC 5241 LUBRICATION (3)
PR: EML 4503 or CI. The theoretical basis for lubrication and bearing theory. The study of lubrication requirement of different machine types. Introduction to gas bearings.

EMC 5242 VIBRATION ANALYSIS (3)
PR: EML 4265 or CI.Transient and steady state analysis of mechanical systems with lumped parameters. Computer simulation of systems. Application of generalized coordinates, matrix representation and other methods to lumped parameter systems.

EMC 5225 ACOUSTICS AND NOISE CONTROL (3)

EMC 5235 APPLIED ENGINEERING ASPECTS OF FATIGUE (2)
PR: EML 5528 or CI. Evaluation of strength of machine members under fatigue loadings. Stress concentrations, residual stress effects, surface coatings, environmental effects. Statistical treatment in fatigue analysis.

EMC 5273 ADVANCED DYNAMICS OF MACHINERY (3)
PR: EML 4265 or CI. Detailed study of velocities, accelerations and forces in machines with parts having rotating, reciprocating and combined motion.

EMC 5253 ADVANCED MECHANICAL DESIGN (2)
PR: CC. A technical application course involving the problem of developing machines to perform specified functions. The analysis will include evaluation of kinematic performance, and examination of parts from stress, strain, wear and fabrication process.

EMC 5266 HVAC SYSTEMS (3)
PR: EML 4601 or CI. Design of a HVAC system from concept stage to final plans and specifications, criteria for selection of systems type, performance characteristics of single zone, multizone, double duct and variable volume systems.
minute and indeterminate. Introduction to the use of energy methods in indeterminate structures.

**CES 4002 MATRIX STRUCTURAL ANALYSIS** (3)


**CES 4104 ADVANCED MECHANICS OF MATERIALS** (3)

PR: EGN 3331, MAP 4302. Analytical analysis of the mechanical behavior of deformable solids; special topics in beam theory, elastic and inelastic methods, plastic limit analysis flexure and torsion of beams; introduction to finite element computer methods.

**CES 4208 STRUCTURAL DYNAMICS** (3)

PR: CES 4001, EGM 4430. Behavior of structural components and systems when subjected to periodic dynamic loads.

**CES 4402 STRUCTURAL DESIGN-CONCRETE** (2)


**CES 4403 HYDRAULIC DESIGN** (2)

PR: EGM 4816, ENV 4622. Design of hydraulic systems, including drainage, water supply, and flood control.

**CES 4404 FLUID SYSTEMS DESIGN** (2)


**CES 4501 CONCEPTS OF STRUCTURAL DESIGN** (3)

PR: CES 4001. Applications of solid mechanics, material science and structural analysis to the design of buildings, bridges, and mobile structures. Review of current codes and specifications.

**CES 4502 STRUCTURAL DESIGN—STEEL** (2)

PR: CES 4501. Design of structures made of steel.

**CES 4700 CEMENT AND CONCRETE DESIGN** (2)

PR: EGN 3365L. Classifications and production of cements. Design and testing of concrete mixes to produce desired properties.

**CES 4704 STRUCTURAL DESIGN-CONCRETE** (2)


**CES 4911 SENIOR PROJECT** (3)

PR: CI. Problem-solving experience and training for seniors in research and/or design projects. Written final reports are required.

**CES 4933 SPECIAL TOPICS IN CIVIL ENGINEERING AND MECHANICS** (1-5)

PR: CI. New technical topics of interest to civil engineering students.

**EAS 4101 HYDRO AND AEROMECHANICS** (3)

PR: EGN 3354, MAP 4302 Advanced fluid dynamics, ideal and viscous flows, applications to flow around immersed bodies.

**ECI 4311 SOIL MECHANICS I** (3)

PR: EGN 3354C. Fundamental and experimental concepts in soil mechanics with emphasis on soil properties, soil moisture, soil structure, and bearing strength.

**ECI 4312 SOIL MECHANICS II** (3)

PR: ECI 4311. A study of the application of the principles of soil mechanics to problems in soil engineering.

**ECI 4640 GEOTECHNICAL DESIGN** (2)

PR: ECI 4311. Design of geotechnical systems including bases, foundations, embankments, and dams.

**ECI 4911 RESEARCH IN CIVIL ENGINEERING AND MECHANICS** (1-4)

PR: CI

**EGM 4430 SHOCK AND VIBRATIONS** (2)

PR: EGN 3321, MAP 4302. Response of mechanical systems to shock excitation; vibration of discrete and continuous bodies.

**EGM 4610 COMPUTATIONS IN CIVIL ENGINEERING** (3)

PR: MAP 4302. Development of techniques of applied mathematics to civil engineering problems, partial differential equations, vector analysis, complex variables.

**EGM 4816 HYDRAULICS** (3)

PR: EGN 3354C. Fundamental and applied aspects of pipe flow, free surface flow, and unsteady flow for hydraulic systems.

**EMA 4324 CORROSION OF ENGINEERING MATERIALS I** (3)

PR: EGN 3365L. Principles of electrochemical corrosion and the representation of corrosion processes by polarization diagrams. Origin and prevention of the localized forms of corrosion and approaches to corrosion control.

**EMA 4324L CORROSION LABORATORY**

PR: EMA 4324. Experimental potentiostatic and galvanostatic polarization studies related to various corrosion phenomena.

**EMA 4501 CORROSION CONTROL SYSTEM DESIGN** (2)

PR: EMA 4324. Design of corrosion prevention systems and prediction of the behavior of materials in various corrosive environments.

**EMA 4604 PROCESSES IN MATERIALS ENGINEERING** (3)

PR: EGN 3365L. 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.

**EMA 4703 CONCEPTS OF ENGINEERING MATERIALS** (3)


**EMA 4704 SELECTION AND APPLICATION OF ENGINEERING MATERIALS** (3)

PR: EGN 3365L. Determination of the property requirements for the utilization of materials in specific applications, comparison of properties of metals, plastics, and ceramics, the effect of heat treatment, etc., on materials, properties, and limitations.

**EMA 4905 INDEPENDENT STUDY** (1-5)

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

**ENV 3001 SOCIETAL ASPECTS OF ENVIRONMENTAL ENGINEERING**

An introduction to various aspects of environmental problems faced by today's society. Readings and discussions are conducted concerning air pollution, water pollution, noise pollution, solid waste management, ionizing radiation, disease transmission, and food protection, with regard to aesthetic, legal, economic, technical, and political constraints. This course is acceptable as an Engineering Social Science and Humanities Elective and is open to non-engineering students.

**ENV 4111 AIR POLLUTION CONTROL** (3)

PR: EGN 3354C. Behavior and effects of atmospheric contaminants and the principles of making measurements in the air environment. Basic concepts of meteorology and control technology are discussed. Regulatory aspects and air pollution standards are covered.

**ENV 4201 ENVIRONMENTAL ENGINEERING LABORATORY** (1)

PR: ENV 4417. Laboratory experience in the measuring of environmental parameters.

**ENV 4417 WATER QUALITY AND TREATMENT** (3)

PR: EGN 4816. An introduction to municipal water supply and waste water treatment. Topics include water requirements and waste volumes, water quality, physical and chemical treatment processes, and advanced wastewater treatment processes.

**ENV 4622 WATER RESOURCES ENGINEERING** (3)

PR: EGN 4816. A study of the engineering principles involved in sustaining and managing the quantity and quality of water available for human activities with particular emphasis on surface water and ground water hydrology.

**SUR 3101C ENGINEERING LAND SURVEYING** (2)

Principles of land surveying for engineering practice. Traverses, levels, boundary surveys, route surveys, coordinate geometry, and mapping.

**TTE 4004 TRANSPORTATION ENGINEERING I** (3)

PR: MAP 4302. Introduction to transportation engineering, including urban transportation planning, traffic control and highway design.

**TTE 4006 TRANSPORTATION ENGINEERING II** (3)

PR: TTE 4004. The planning and design of transportation systems.

**TTE 4721 TRANSPORTATION SYSTEMS DESIGN** (2)

PR: TTE 4404. Design of transportation systems, including airports, highways, mass transit systems, etc.

**GRADUATE COURSES**

**CES 5508 ADVANCED STRUCTURAL DESIGN I** (3)

PR: CES 4002, CES 4501. A study of design of complicated structural systems such as curved bridges, orthotropic bridges, tall buildings, covers, suspension structures, etc.

**CES 5509. ADVANCED STRUCTURAL DESIGN II** (3)

PR: CES 5508 A study of design of complicated structural systems such as curved bridges, orthotropic bridges, tall buildings, towers, suspension structures.

**EAS 5100 AERODYNAMICS** (3)

PR: EGN 4355, and CI. Fundamentals of aerodynamic flow and flight including potential theory, circulatory theory, viscosity considerations, wing theory and design.
EES 5203 WATER QUALITY FOR ENGINEERS I (3)
PR: CI. An introduction to the form, structure, and chemical activities of the important processes which are essential to treatment of domestic, and industrial wastewater.

EGM 5532 FINITE ELEMENT METHODS I (3)
PR: CI. Finite element methods in continuum mechanics with applications to solid and fluid mechanics problems.

EGM 5562 MECHANICS OF COMPOSITE MATERIALS (3)
PR: CES 4001. Physical and mathematical mode is for composites. Response to thermal, electrical and mechanical loading. Special composite systems and shapes, filamentary plates, shells, isotensoid domes.

EMC 6949 ENGINEERING CERAMICS (3)
PR: EGN 3365L and CI. Detailed examination of the materials of ceramic engineering and the engineering properties of advanced ceramic products.

ENV 5007 ENVIRONMENTAL PLANNING (3)
PR: CI. Study of comprehensive application of environmental control and protection techniques to the problems of environmental quality. Impacts on water, soil, air, and natural ecological factors. A design or analysis problem is an integral part of the course.

ENV 5439 URBAN WATER TREATMENT THEORY AND DESIGN (3)
PR: ENV 4417 and CI. A study of the theory of water treatment and the testing of theory to analysis and design practice. Emphasis is given to unit processes. The course is devoted to the design and analysis of specific water treatment facilities.

ENV 5539 URBAN WASTEWATER TREATMENT THEORY AND DESIGN (3)
PR: ENV 4417, CI. A study of the theory of wastewater and the relation of theory to analysis and design practice. Emphasis is given to unit processes. The course is devoted to the design and analysis of specific water treatment facilities.

CES 6217 STRUCTURAL STABILITY (3)
PR: CES 4002, CES 4208. Elastic and inelastic stability of trusses and frames, local buckling of structural members and plates.

CES 6335 OPTIMIZATION TECHNIQUES IN CIVIL ENGINEERING (3)
PR: CI. Theory and application of optimization techniques to the planning, design and operation of Civil Engineering Systems.

ECS 6915 DIRECTED RESEARCH (1-9)
PR: GR. Master’s level. Repeatable. (S/U only.)

ECS 6938 GRADUATE INSTRUCTION METHODS (1-5)
Special course to be used primarily for the training of graduate research assistants. Variable credit. Repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

ECS 6908 FINITE ELEMENT METHODS II (1-5)
Special course to be used primarily for the training of graduate research assistants. Variable credit. Repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

ECI 6206 COASTAL WAVES AND STRUCTURES (3)
PR: CI. A study of the fundamentals of wave motion and the mutual interaction of waves and structures. A design project is included.

ECI 6207 WAVES AND BEACH PROTECTION (3)
PR: ECI 6206. A study of the fundamentals of shoreline dynamics including distribution of wave energy, motion of beach sand, stable configurations and protective measures.

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

ECI 6239 FREE SURFACE FLOW (3)
PR: EGM 4816 or CI. Fundamental and applied aspects of free surface flow, including river hydraulics, canal flow, and open channel design.

ECI 6631 HYDROLOGIC MODELS (3)
A study of the theoretical principles of hydrologic modeling and an examination of various numerical hydrologic models available. Students will be required to develop and apply computer models.

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

ECI 6933 SPECIAL TOPICS IN CIVIL ENGINEERING AND MECHANICS (1-4)
PR: CC.

ECI 6939 CIVIL ENGINEERING AND MECHANICS SEMINAR (1-4)
PR: CC.

ECI 6971 DISSERTATION: MASTER’S (var.)
Repeatable. (S/U only.)

EES 6205 WATER QUALITY FOR ENGINEERS II (3)
PR: EES 5203, MCB 3010C. Study of biochemical reactions and processes in treatment of pollutants with emphasis on control of effluents for the protection of water quality.

EGM 6136 ADVANCED X-RAY METHODS (3)
PR: CI, X-Ray diffraction, analytical and experimental studies of defects, texture, residual stress, crystal and polycrystalline aggregates. Lec.-lab.

EGM 6261 ADVANCED DYNAMICS (3)

EGM 6343 NUMERICAL METHODS IN ENGINEERING ANALYSIS (3)
PR: EGN 4420. Application of computational and mathematical techniques and principles to advanced engineering problems.

EGM 6353 FINITE ELEMENT METHODS II (3)

EGM 6611 CONTINUUM I (3)
PR: CI. Formulation of fundamental problems in solids and fluids from a unified viewpoint; application to ideal media; elastic, plastic, and fluids.

EGM 6655 CONTINUUM II (3)
PR: EGM 5611. Theory of thermoelastic and viscoelastic behavior in continuous media; coupled thermodynamics and mechanical behavior; generalized constitutive relations.

EGM 6656 THEORY OF ELASTICITY (3)
PR: CI. Classical and contemporary elasticity theory with applications to engineering problems.

EGM 6675 THEORY OF PLASTICITY (3)
PR: CI. A study of the theory of plasticity including initial and subsequent yield surfaces, incremental and deformation theories.

EGM 6796 PLATES AND SHEELS (3)
PR: CES 4001, and CI. Elastic behavior of thin plate and shell structures.

EGM 6814 ADVANCED FLUID MECHANICS (3)
PR: EGM 4816. Formulation and analysis of problems in the flow of viscous and nonviscous fluids including Newtonian and Non-Newtonian flows. Mathematical methods and techniques of solutions.

EMA 6236 DISLOCATION STRUCTURES AND PROPERTIES OF ENGINEERING MATERIALS (3)
PR: EMA 4324. Dislocation interactions and structures in metals, principles of phase nucleation and growth, transformations and a study of the primary strengthening mechanisms in metals.

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

ENV 6645 WATER RESOURCES SYSTEMS (3)
PR: ENV 4622, CES 6335. The planning, design, and operation of water resources by the use of systems analysis and operations research techniques.

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

ECI 7990 DISSERTATION: DOCTORAL (var.)
PR: Must be admitted to Doctoral Candidacy. Repeatable. (S/U only.)

COMPUTER SCIENCE AND ENGINEERING

UNDERGRADUATE COURSES

CAP 4621 INTRODUCTION TO ARTIFICIAL INTELLIGENCE (3)
PR: EEL 4851C. Basic concepts, tools and techniques used to produce
and study intelligent behavior. Organizing knowledge, exploiting contraints, searching spaces, understanding natural languages, problem solving strategies, etc.

CDA 4101 COMPUTER ORGANIZATION AND ARCHITECTURE
PR: COT 3001, EEL 4705, or CC. Elements of computer systems; processors, memories and switches. Register transfer presentation of computer. ALUs and their implementation. The control unit. Memory and I/O. Hardware support of operating system functions. Multiprocessor systems. Economic considerations.

CDA 4171 MINICOMPUTER LABORATORY

CDA 4905 INDEPENDENT STUDY IN COMPUTER SCIENCE
PR: CDA 2101. Specialized independent study determined by the needs and interests of the student. May be repeated up to 10 credit hours. (S/U only.)

CIS 4321 DATA PROCESSING APPLICATIONS
PR: EEL 4850C, EEL 4851C. An introduction to the principles of information processing and applications. Fundamentals of systems for management and control.

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

COC 4935 SPECIAL TOPICS IN COMPUTER SCIENCE I
(1-4) PR: CC.

COP 4100 PROGRAMMING IN BASIC (CAI)
(1) Laboratory course in theory and applications of BASIC interactive programming language using a minicomputer and CAI instruction.

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

COP 3510 APPLICATION TO COMPUTER SCIENCE (3) PR: ECN 2210. CR: COP 3510L. Introduction to the concepts of algorithmic formulation of problems for computer solution and the general abstract operations used in these formulations.

COP 3510L COMPUTER SCIENCE LABORATORY (2) CR: COP 3510. Laboratory for implementation of algorithms in a general purpose computer language.

COP 4400 COMPUTER SYSTEMS
PR: COP 3510, COP 3510L, and MAC 3283 or CC. Principles of computer organization, machine and assembly language programming.

COP 4502 COMPARISON OF PROGRAMMING LANGUAGES
PR: EEL 4850C, EEL 4851C. A comparative study of procedural and nonprocedural computer languages, emphasizing the fundamental differences in information binding, string and data structures manipulation, control and I/O structures in different languages.

COP 4550 GRAMMAR LANGUAGES
PR: EEL 4850C and COP 4400. An introduction to programming languages, survey of language types and the design of translators and interpreters.

COP 4620 INTRODUCTION TO SYSTEMS PROGRAMMING
PR: EEL 4851C, COP 4400. Introduction to systems programming. Design of operating systems. Concurrent processing, synchronization, and storage management policies.

COT 3001 INTRODUCTION TO DISCRETE STRUCTURES
PR: MAC 3281 or equivalent. Introduction to set algebra, propositional calculus and finite algebraic structures as they apply to computer systems.

COT 4125 INTRODUCTION TO AUTOMATA THEORY AND FORMAL LANGUAGES
PR: EEL 4851C, COP 3001, or CC. Introduction to the theory and application of various types of computing devices and the languages they recognize.

COT 4130 SEQUENTIAL CIRCUITS

COT 4300 ANALYSIS OF ALGORITHMS
PR: EEL 4851C and COP 3001. Design principles and analysis techniques applicable to various classes of computer algorithms frequently used in practice.

EEL 4705 LOGIC DESIGN
PR: EG 3373. Students for whom this course is not required by their major may enroll with CC. Binary number systems; truth functions; Boolean algebra; canonical forms; minimization of combinational logic circuits; synchronous logic circuits in computers.

EEL 4705L LOGIC LABORATORY
CR: EEL 4705.

EEL 4706 TESTING AND FAULT TOLERANCE IN DIGITAL SYSTEMS
PR: COP 4400, COP 4130, and CC. Test generation for combinational and sequential digital circuits, fault analysis and design. Methods for reliability improvement through fault tolerant and testable circuit design. Introduction to software reliability.

EEL 4743L MICROPROCESSOR LABORATORY
CR: EEL 4757. Laboratory for microprocessor use and evaluation.

EEL 4757 MICROPROCESSOR PRINCIPLES AND APPLICATIONS

EEL 4758 MICROPROCESSOR-BASED SYSTEM DESIGN AND APPLICATION
PR: EEL 4757, EEL 4743L. Study of techniques for design of microprocessor-based systems used in various applications. Includes a project on development of an experimental application system.

EEL 4850C PROGRAMMING METHODOLOGY
PR: Senior standing in Computer Science or CC: COP 3510. Methods of designing and developing effective and efficient computer programs. Top-down design, structured programming, debugging and program analysis are addressed.

EEL 4851C DATA STRUCTURES
PR: COP 3510. Fundamentals of data organization for purposes of program efficiency, clarity and simplicity will be discussed.

EEL 4852C DATA BASE SYSTEMS
PR: COP 4400 and EEL 4851C. Fundamentals of database management systems. CODASYL, network, hierarchical, and relational data base systems are analyzed, and typical applications are presented.

EEL 4853C DISTRIBUTED PROCESSING AND COMPUTER NETWORKS
PR: COP 4620, CDA 4101. Design and analysis of distributed processing systems. Covers communication hardware and software, network operating systems, and reliability enhancement techniques.

GRADUATE COURSES

CDA 6901 INDEPENDENT STUDY
PR: Graduate standing. Independent study in which students must have a contract with an instructor. (S/U only.)

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

CDA 6911 GRADUATE RESEARCH METHODS
PR: Graduate standing. Special course to train graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 4 credits per student. (S/U only.)

CDA 6930 SPECIAL TOPICS IN COMPUTER SCIENCE AND ENGINEERING
PR: CC.

CDA 6940 GRADUATE INSTRUCTION METHODS
PR: Graduate standing. Special course to train graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 4 credits per student. (S/U only.)

CDA 6971 THESIS: MASTERS
PR: Graduate standing.

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

CDA 7980 DISSERTATION: DOCTORAL
PR: Admission to doctoral candidacy. Repeatable. (S/U only.)

COP 5001 TOPICS IN COMPUTERS AND PROGRAMMING
PR: CC. Survey of topics in machine organization systems, and data structures.

COP 6130 OPERATING SYSTEMS
PR: CC. Operating systems functions and design, resource management, protection systems, process communication and deadlocks.

COP 6640 PROGRAMMING LANGUAGES AND TRANSLATION
PR: CC. Grammars and languages, symbols, strings, syntax, parsing, the design of a compiler, storage organization and symbol tables, translator writing systems.
EEL 5771 INTRODUCTION TO COMPUTER GRAPHICS I (3) PR: CC. An introduction to the evolution of computer graphics including point-plotting, line drawing, two-dimensional transformation and graphics software packages.

EEL 6522 INFORMATION THEORY (2) PR: CC. Concepts of information, information channels, channel capacity, information sources and Shannon's fundamental theorem.

EEL 6773 THREE-DIMENSIONAL GRAPHICS AND SYSTEMS (3) PR: EEL 5771 or CC. Advanced course covers the methods of representation of three dimensional objects in the plane of the graphics screen and the hardware and software required for their processing.

EEL 6764 PRINCIPLES OF COMPUTER ARCHITECTURE (3) PR: EEL 5771 or CC. Study of the number systems and the algorithms used for digital arithmetic computation with emphasis in their implementation, speed and reliability considerations.

EEL 6766 ADVANCED COMPUTER ARCHITECTURE (3) PR: EEL 6764 or CC. The macro-structure of computers is considered in this course, ranging from the orthodox von Neumann design to multiprocessors, stack processors, pipeline systems, and associative computers.

EEL 6830 CODING THEORY I (2) PR: CC. Error-correcting codes, algebraic block codes, linear codes and feedback shift registers. BCH codes and decoding methods.

EEL 6840 CODING THEORY II (2) PR: EEL 6830. Cyclic codes; block codes; project codes; sequential decoding. Burst error codes. Arithmetic codes.

EEL 6841 AUTOMATA THEORY I (2) PR: EEL 5760. Review of mathematical foundations, decomposition and interconnection of digital machines, measurement and control of finite-state sequential circuits; machine identification, regular expressions and finite-state machines.

EEL 6843 AUTOMATA THEORY II (2) PR: EEL 6840. Vector spaces over finite fields, linear sequential circuits, pseudo-random sequences. Turing machines, recursive function; computability.

EEL 6842 AUTOMATA THEORY III (2) PR: EEL 6841. Artificial languages, phase-structure grammars, operations on languages, decision problems, discrete value random processes, Markov processes, probabilistic sequential machines, nondeterministic sequential machines.

EEL 6842 AUTOMATA THEORY IV (2) PR: EEL 6841. Artificial languages, phase-structure grammars, operations on languages, decision problems, discrete value random processes, Markov processes, probabilistic sequential machines, nondeterministic sequential machines.

EEL 6918 CASE STUDIES IN INDUSTRIAL COMPUTER SYSTEMS (2) 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.

ELECRICAL ENGINEERING UNDERGRADUATE COURSES

EEL 3100 NETWORK ANALYSIS AND DESIGN (3) PR: EGN 3373. A second course in linear circuit analysis and design. Transient and steady-state responses of passive R-L-C networks to various functions.

EEL 3302 ELECTRONICS (3) PR: EGN 3373. A course in the physical principles of electronic devices with emphasis on semi-conductor electronics. Includes the analysis and design of amplifiers and switching circuits.

EEL 3410, 4411 FIELDS AND WAVES I, II (3,2) PR: MAP 4302, PHY 3041, PHY 3041L. A basic introduction to electromagnetic field theory, including static and dynamic electromagnetic fields.

EEL 4102 LINEAR SYSTEMS ANALYSIS (3) PR: EEL 3100. Provides further study in the analysis of linear networks and systems. Includes time and frequency domain points of view. Laplace, Fourier and superposition integrals.

EEL 4108 DISTRIBUTED NETWORKS (3) PR: EEL 3410, EEL 3100. Transmission lines, standing waves, impedance, waveguides.

EEL 4163 COMPUTER AIDED DESIGN AND ANALYSIS (2) PR: EEL 3302. The emphasis is upon applications and how to use the major CADA programs as effective tools to solve a wide variety of engineering problems. The coverage includes solid state design, systems analysis, digital logic, transfer function solutions and concludes with a brief look at thermal and mechanical systems analysis. The programs used include SUPER*SPEC, SPICE 2, NASAP and others.


EEL 4500 COMMUNICATION CIRCUITS (3) PR: EEL 3302. Provides further study in electronic circuits. Includes oscillator, modulator, and detector analysis and design.


EEL 4411 See EEL 3410.

EEL 4511 COMMUNICATION ENGINEERING (2) PR: EEL 4300. System considerations of electronic circuits; radio propagation; antennas; transmitters and receivers.

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


EEL 4705 LOGIC DESIGN (3) PR: EGN 3373. Non-majors may enroll with CC. Binary number system; truth functions; Boolean algebra; canonical forms; minimization of combinational logic circuits; logic circuits in computers.

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

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

EEL 4906 DESIGN PROJECT (2) PR: Senior standing. An individual or team project involving the design of an electrical component system. Required of all electrical seniors.

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

EEL 3301 LABORATORY 1 (1) PR: EEL 3301L, EEL 3302.

EEL 3302 LABORATORY 2 (1) PR: EGN 3373

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

EEL 4305I LABORATORY 3 (1) PR: EEL 3302L, EEL 4300

EEL 4306I LABORATORY 4 (1) PR: EEL 3302L CR: EEL 4411

ELECTRICAL ENGINEERING GRADUATE COURSES

EEL 5250 POWER SYSTEMS ANALYSIS (2) PR: CC. Analysis techniques for AC power systems.

EEL 5253 COMPUTER ANALYSIS OF POWER SYSTEMS (2) PR: CC. Review of Fortran programming, matric algebra, network formulation, short circuit studies, simulation of algebraic equations, load flow studies, numerical solution of differential equations, transient stability studies. Strong emphasis on techniques adaptable to digital computer studies, programs will be written and run on the IBM 360/65.

EEL 5367 PULSE CIRCUIT PRINCIPLES (2) PR: EEL 4102, EEL 4300. An introduction to the analysis and design of pulse and timing circuits with applications.
EEL 5435 UHF PRINCIPLES
(2)
PR: EEL 4102, EEL 4300, EEL 4411. A study of tubes, devices, and circuits peculiar to systems which operate at ultra high and super high frequencies.

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

EEL 5620 NONLINEAR CONTROL SYSTEMS
(2)

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

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

EEL 5715 DIGITAL SIGNAL PROCESSING TECHNIQUES
(2)

EEL 5760 DISCRETE STRUCTURES FOR DIGITAL SYSTEMS
(2)

EEL 5820 IMAGE PROCESSING BY COMPUTERS
(2)
PR: EEL 4102 or CC. Two dimensional convolution and system functions. Fourier transform in two dimensions. Digitization of two dimensional signals, sampling theorems, bandlimited signals. Image processing by computers. Applications of image processing.

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

EEL 6141, 6142, 6143 NETWORKS SYNTHESIS I, II, III
(2-2-2)
PR: CC. Network functions; physical realizability; two terminal network synthesis methods; frequency transformation; potential analogy; approximation problems; insertion-loss and transfer functions.

EEL 6150, 6151 ADVANCED CIRCUIT THEORY I, II
(2,2)
PR: CC. Network fundamentals; network characterization; frequency analysis; superposition integrals; signal-flow techniques; stability problems; real-and-imaginary relations.

EEL 6152 NONLINEAR CIRCUITS
(2)
PR: CC. Analytical and topological approaches to nonlinear circuits; nonlinear resonance; relaxation oscillations.

EEL 6168 CADA: MODELING & SOFTWARE
(2)
PR: EEL 4163. Coverage includes all facets of solid-state modeling pertaining to CADA applications. Discrete and macro modeling techniques are explored for a wide range of devices. Software methods for CADA applications are discussed from several vantage points. Methodology and treatment required for the large scale, general purpose programs are explored. The mathematical techniques used for the modern integration routines are examined, with tradeoffs discussed.

EEL 6174 OPTIMUM FILTERING AND IDENTIFICATION
(2)
PR: CC or EEL 6631. Estimation theory and development of the Kalman-Wiener filter for continuous and discrete-time systems. System indentification through deterministic and stochastic approaches. Application to control and communication systems.

EEL 6261, 6262, 6263 ELECTRIC POWER SYSTEMS I, II, III
(2,2,2)
PR: CC Steady-state and transient analysis of interconnected power systems; power circuit protection; transient characteristic of apparatus.

EEL 6270 LIGHTNING AND SURGE PROTECTION
(2)
PR: CC. Methods of protection against overvoltage due to lightning. Ground wire shielding, systems and tower grounding, lightning arresters. Dynamic overvoltage, switching phenomena and system recovery voltages.

EEL 6271 PROTECTIVE RELAYING OF POWER SYSTEMS
(2)
PR: EEL 5250, EEL 6261 or CC. Fundamentals of instrumentation. Design and operation of protective schemes for equipment in generation, transmission, and distribution circuits. Analysis of abnormal system conditions requiring relay operation.

EEL 6332 ELECTRICAL PROPERTIES OF THIN FILMS
(2)
PR: EEL 4330 or equivalent and EEL 4411 or CC. Electrical properties of thin films as derived from Boltzmann's transport equation. The growth of thin films. The fabrication of electrical circuits with thin films. Lecture supplemented by laboratory experiments and demonstrations.

EEL 6351, 6352, 6353 SOLID STATE ELECTRONICS I, II, III
(2,2,2)
PR: CC. Theory of operation and application of circuits and devices.

EEL 6386, 6389 PRINCIPLES OF SEMICONDUCTOR DEVICE MODELING I, II
(2,2)
PR: EEL 4102, EEL 4411. 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.

EEL 6387 NOISE THEORY
(2)
PR: CC. Electrical noise and signals through linear filters and electronic systems.

EEL 6432 MICROWAVE COMPONENTS
(2)
PR: CC. A study of directional couplers, junctions, cavities and other passive microwave components including microwave integrated circuits.

EEL 6433 MICROWAVE NETWORKS
(2)
PR: CC. Scattering and transfer representation of n-ports. Odd and even mode theory. Wave filters.

EEL 6434 MICROWAVE GENERATION AND AMPLIFICATION
(2)

EEL 6482, 6483, 6484 ELECTROMAGNETIC FIELDS AND WAVES I, II, III
(2,2,2)
PR: CC. Electromagnetic theory from the engineering point of view, propagation and reflection of waves, guided waves, resonant cavities, antennas and radiation.

EEL 6506 DATA TRANSMISSION
(2)
PR: EEL 6508. Quantization theory, binary coding systems ideal binary transmission, on-off keying, FSK, PSK, PCM applications.

EEL 6507 DATA TRANSMISSION II
(2)
PR: EEL 6506. M-ary systems-MASK, MFSK, MPSK, orthogonal systems, multilevel and multistate coding, simplex coding, orthogonal and biorthogonal codes, polyphase signals, synchronization methods.

EEL 6610 SIGNAL PROCESSING SYSTEMS
(2)
PR: CC. Sampling theory, pulse waveform generation and modulation. PAM, PWM, PPM, related multiplex systems, telemetry applications.

EEL 6652 INFORMATION THEORY
(2)
PR: CC. Concepts of information, information channels, channel capacity, information sources and Shannon's fundamental theorem.

EEL 6651, 6652, 6653 MODERN THEORY OF COMMUNICATION I, II, III
(2,2,2)
PR: CC. Physical basis and statistical representation of electrical noise; filtering, modulation, and de-modulation of signals corrupted by noise; correlation techniques and linear prediction; statistical estimation of signal parameter; optimum filters and receivers; ambiguity functions and inverse probability; quantitative measure of information sources, noise channels and channel capacity; an introduction to error-correcting codes.

EEL 6613 MODERN CONTROL THEORY
(2)
PR: EEL 4656, EEL 5620, EEL 6631, EEL 6640 or CC. A study of modern control techniques including optimum and adaptive control.

EEL 6631 DIGITAL CONTROL SYSTEMS
(2)
PR: EEL 4656. Sample-data and digital control processes.

EEL 6640 RANDOM PROCESSES IN CONTROL SYSTEMS
(2)
PR: EEL 4656. Analysis and design of control systems subject to random inputs and disturbances.

EEL 6756 SPECIAL ANALYSIS BY COMPUTERS
(2)
PR: CC. Introduction to time series analysis by computers. Discrete Fourier methods applied to time series, sample spectrum, cross spectrum, smoothing of spectral estimators, distribution properties. Application to physical, biological and environmental problems.

EEL 6822 PATTERN RECOGNITION THEORY
(2)

EEL 6823 COMPUTER APPROACHES TO PATTERN RECOGNITION
(2)
EEL 6830 CODING THEORY I  
PR: CC. Error-correcting codes, algebraic block codes, linear codes and feedback shift registers. BCH codes and decoding methods.

EEL 6831 CODING THEORY II  

EEL 6840 AUTOMATA THEORY I  

EEL 6841 AUTOMATA THEORY II  

EEL 6842 AUTOMATA THEORY III  

EEL 6900 INDEPENDENT STUDY  
Independent study in which students research specific industries and visit local industrial plants. Credit for engineering majors. (No credit for engineering science majors.)

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

EEL 6933 SELECTED ELECTRICAL TOPICS  
PR: CC. (1-3)

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

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

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

ELR 6117 ELECTRICAL MEASUREMENTS  
PR: CC. Advanced techniques and principles of electronic measurement. (1)

ELR 6118 MEASUREMENTS LABORATORY  
CR: ELR 6117 (1-3)

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

ELR 6911 GRADUATE RESEARCH METHODS  
PR: CC. Graduate research assistant. Variable credit. Limited to a cumulative total of 5 credits per student. (1-5)

ELR 6940 GRADUATE INSTRUCTION METHODS  
Special course to be used primarily for the training of graduate teaching assistants. Variable credit. Repeatable. Limited to a cumulative total of 5 credits per student. (1-5)

ELR 7970 DIRECTED RESEARCH  
PR: GR. Ph.D. level. Repeatable. (S/U only.)

ENGINEERING TECHNOLOGY

UNDERGRADUATE COURSES

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

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

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

ETI 4600 INTRODUCTION TO INDUSTRIAL SYSTEMS  
PR: ETI classification of CC. Introduction to organizational planning and control functions in industrial systems. (3)

ETI 4614 PRINCIPLES OF INDUSTRIAL OPERATIONS I  
PR: ETI classification of CC. Techniques of work measurement and methods design; principles of production control and inventory control. (3)

ETI 4661 PRINCIPLES OF INDUSTRIAL OPERATIONS II  
PR: ETI 4660, ETI 4614, or CC. Application of techniques developed to the operation of an industrial firm through special projects. (3)

GRADUATE COURSES

ETE 5100 INTRODUCTION TO ELECTRONICS FOR SCIENTIST  
Basic electronic devices and instruments, DC and AC circuits, diodes and power supplies, transistor, circuits, integrated circuits, laboratory instruments, transducers and special instruments. No credit toward graduate degree requirements.

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

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

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

INDUSTRIAL AND MANAGEMENT SYSTEMS

UNDERGRADUATE COURSES

EIN 4214 SAFETY ENGINEERING  
Industrial safety practices. Application of hazard reduction or elimination techniques. Achievement of safety and health goals. OSHA, NIOSH. Design of loss control program.

EIN 4251C INDUSTRIAL AUTOMATION  
PR: EIN 4304L. EG2 3613. Introduction to the practices and concepts of automation as applied to material handling, inventory storage, material transfer, industrial processes and quality control. Economic justification of automated activities.

EIN 4304C INTRODUCTION TO INDUSTRIAL ENGINEERING & INDUSTRIAL PROCESSES  
History of industrial engineering. Introduction to basic industrial processes and controls. Students research specific industries and visit local industrial plants.

EIN 4312L PRODUCTION DESIGN I  
PR: EIN 4304C. Operation analysis and workplace design, work measurement, standard work, ergonomics, and labor relations. (3)

EIN 4313L PRODUCTION DESIGN II  
PR: EIN 4312L. Predetermined time systems, job analysis and evaluation, wage administration, motivational theories, and design and application of wage incentive plans.

EIN 4334 PRODUCTION CONTROL I  
PR: EIN 4344P. ESI 4314. Activity forecasting models and control. Design and use of inventory control models, both deterministic and probabilistic. Analysis of resource requirements.

EIN 4335 PRODUCTION CONTROL II  

EIN 4335 ENGINEERING ECONOMY II  

EIN 4364L PLANT FACILITIES DESIGN  
PR: EIN 4313L. Design and modification of industrial production and material handling facilities. Basic analysis techniques, use of computer programs, automated warehousing.

ESI 3211 INDUSTRIAL STATISTICS  
PR: ETK classification. Industrial applications of probability, testing of hypotheses, regression techniques and analysis of variance. (No credit for engineering majors.)

ESI 4221 STATISTICAL QUALITY CONTROL  

ESI 4244 DESIGN OF EXPERIMENTS  
PR: EIN 3443. Development of the basic statistical experimental designs applicable to engineering analyses. Analysis of variance and regression.
ESI 4314 OPERATIONS RESEARCH I (3)  
PR: EGN 4450. An introduction to operations research techniques with particular emphasis on deterministic models. Linear programming, dynamic programming, goal programming, integer programming, and PERT/CPM networks are considered.

ESI 4315 OPERATIONS RESEARCH II (3)  
PR: EGN 3443, ESI 4314. A continuation of ESI 4314 with emphasis given to probabilistic models in Operations Research. Discrete and continuous time processes, queuing models, inventory models, simulation models, Markovian decision processes and decision analysis.

ESI 4521 COMPUTER SIMULATION (3)  

ESI 4573 NUMERICAL METHODS (3)  
PR: EGN 2210, one calculus course or CI. Numerical algorithms and methods for applications to engineering problems. Applications using FORTRAN language.

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

ESI 4911 SENIOR PROJECT (2)  
PR: EIN 4312, ESI 4314, EGN 3443. Analysis and design of systems in a directed project format. Individual or group work consisting of project proposal, project activities, and final report. Student projects are directed by faculty, with chairman's approval.

GRADUATE COURSES

EIN 5101 ARBITRATION OF INDUSTRIAL ENGINEERING DISPUTES (3)  
Case studies in the arbitration of technical disputes involving job evaluation and classification, labor standards, wage incentives, crew size, etc.

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

EIN 5245 HUMAN FACTORS (3)  
PR: CC. A study of the human physiological limitations encountered in the design, analysis and evaluation of man-machine systems.

EIN 5301 INDUSTRIAL ENGINEERING CONCEPTS (3)  
PR: CC. Survey of industrial and management engineering methods. Work measurement, methods, production and inventory control, and facility design.

EIN 5347 INVENTORY CONTROL (3)  
PR: EIN 4335 or equivalent. Properties of inventory systems and fundamentals of deterministic and probabilistic inventory models. Principles and concepts of material requirements planning.

EIN 5353 ADVANCED ENGINEERING VALUATION (3)  
PR: EIN 4352 or equivalent. Statistical models for analyzing engineering alternatives from an economic viewpoint. The use of advanced engineering economy concepts in solving industrial problems.

EIN 5381 LOGISTICS ENGINEERING (3)  
PR: EGN 3443 or equivalent. Principles and practices of Logistics Engineering are covered. System requirements, logistics support analysis, test and evaluation are considered.

EIN 5386 PROBLEMS IN ENGINEERING MANAGEMENT (3)  
A study of problems encountered by managers in the planning, organizing, allocating of resources, directing, and controlling technical activities.

EIN 5389 FORECASTING (3)  
Introduction to forecasting techniques used to plan and schedule production and inventory control functions. Smoothing and decomposition, time-series methods, regression methods, and autoregressive/moving average methods are presented. Integrating forecasting and planning into the engineering organization is discussed.

EIN 5914, 5915, 5916 SPECIAL INDUSTRIAL PROJECTS I, II, III (1-3 each)  
PR: CC.

EIN 6247 MAN/MACHINE SYSTEMS (3)  

EIN 6336 PRODUCTION CONTROL SYSTEMS (3)  
PR: CC. Forecasting models, development of production plans, loading and scheduling models and basic inventory models. Use of MRP. Design and evaluation of production control systems.

EIN 6933 ADVANCED ENGINEERING SEMINAR (1-3)  
PR: CC.

EIN 6934, 6935, 6936 SPECIAL INDUSTRIAL TOPICS I, II, III (1-3 each)  
PR: CC.

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

ESI 5216 ENGINEERING STATISTICS II (3)  
PR: EGN 3443 or Equivalent. Application of non-parametric statistics, sequential analysis, orthogonal polynomials and other advanced statistical techniques to solving engineering problems.

ESI 5219 STATISTICAL METHODS FOR ENGINEERING MANAGERS (3)  
Study of statistical methods applied to engineering management problems involving estimation and prediction under conditions of uncertainty. Not open to students who have had EGN 3443.

EIN 5233 RELIABILITY ENGINEERING (3)  
PR: EGN 3443 or equivalent. Fundamental concepts of reliability, estimation of reliability of systems and components. Measures of availability, maintainability and reliability.

ESI 5306 OPERATIONS RESEARCH FOR ENGINEERING MANAGEMENT (3)  
Linear programming, non-linear programming, queuing, inventory, network analysis. Not open to students who have had ESI 4315.

EIS 5522 COMPUTER SIMULATION II (3)  

EIN 6213 THEORY OF INDUSTRIAL STATISTICS (3)  
PR: ESI 5219 or equivalent. Study of the theory behind the statistical techniques applied to the solving of engineering problems.

EIN 6223 ECONOMIC QUALITY CONTROL (3)  
PR: EIN 5353, ESI 4221. The design of acceptance sampling systems and control charts for the economic point of view. Consideration of the effects of inspection error on sampling plan and control chart designs.

EIN 6227 STATISTICAL ASSURANCE PLANS (3)  
PR: ESI 4221 or equivalent. Advanced techniques in quality control systems. Includes study of articles in current journals.

EIS 6336 THEOREY OF RELIABILITY (3)  
PR: EGN 3443 or equivalent. Topics in statistical methodology which have applications in reliability. Discrete and continuous distribution models, reliability estimation, reliability structure and growth models, and statistical design for reliability.

EIS 6247 STATISTICAL DESIGN MODELS (3)  
PR: ESI 5219 or equivalent. Design of experimental mathematical models. Application of advanced analysis of variance techniques as applied to industrial problems.

EIS 6291 SPECIAL TOPICS IN STATISTICS (3)  
PR: CC. Special topics in statistics related to research in engineering.

EIN 6336 QUEUEING THEORY (3)  
PR: ESI 4315. Introduction to queueing models. Poisson queues, non-Poisson queues, decision models, transient analysis and special queueing topics.

EIN 6341 DYNAMIC PROBABILISTIC SYSTEMS (3)  

EIS 6405 NONLINEAR AND DYNAMIC PROGRAMMING (3)  
PR: ESI 4315 or equivalent. Optimization of nonlinear systems. General theory and existence theorems. Techniques of solution including quadratic, dynamic and geometric programming for discrete systems, continuous systems and variational methods.

EIS 6414 LINEAR PROGRAMMING (3)  
PR: ESI 4315 or equivalent. The Simplex method, degeneracy, sensitivity analysis, duality theory, network flow theory. Applications to industrial problems.
ESI 6491 MULTIVARIABLE OPTIMIZATION (3)

ESI 6550 INDUSTRIAL SYSTEMS DESIGN (3)
PR: ESI 4521, ESI 4315 or equivalent. Design of integrated systems using statistical and operations research models. Digital simulation using several different digital simulation systems.

ESI 6552 EVALUATION OF SYSTEM PERFORMANCE (3)
PR: ESI 4215, ESI 4315 or equivalent. Applications of probability and random processes to the design and evaluation of physical systems from the viewpoint of satisfying prescribed specifications.

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

ESI 6911 DIRECTED RESEARCH (var.)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of five credits per student. (S/U only.)

ESI 6991 GRADUATE RESEARCH METHODS (1-5)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of five credits per student. (S/U only.)

ESI 6992 GRADUATE INSTRUCTION METHODS (1-5)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of five credits per student. (S/U only.)

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

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

COMPUTER SERVICE COURSES
(No credit for Engineering Majors)

UNDERGRADUATE COURSES

CDA 3101 SC INTRODUCTION TO COMPUTERS II (3)

CDA 3102 SC INTRODUCTION TO COMPUTERS III (3)
PR: CDA 3101. Continuation of CDA 3101. Introduction to large computer systems assembler language and applications.

CDA 4152 SC MINI-COMPUTER APPLICATIONS (3)
PR: COP 4530. Study of mini-computer system components, I-O devices, theory of computer operation.

COC 3300 SC INTRODUCTION TO COMPUTERS AND PROGRAMMING IN BASIC (3)
An overview of computer systems and their role in society. Survey of the evolution of computer software and hardware technology with emphasis on current applications. Introduction to programming using the BASIC language.

COP 3110 SC FORTRAN PROGRAMMING (3)
PR: COP 3300. Solution of scientifically oriented problems using the FORTRAN language. Particular emphasis is placed on file manipulation and system libraries.

COP 3120 SC COBOL PROGRAMMING I (3)

COP 3121 SC COBOL PROGRAMMING II (3)
PR: COP 3120. Advanced applications of ANSI Standard COBOL. Development of subroutines, relative I-O and data base applications as used in a comprehensive data processing environment.

COP 3130 SC PL/I PROGRAMMING (3)

COP 3155 SC APL PROGRAMMING (3)
PR: COP 3300. The use of the APL language is an interactive mode to solve business and scientific problems.

COP 3156 SC PASCAL PROGRAMMING (3)
PR: COP 3300. Structured programming implemented with the PASCAL language. Emphasis on program structure and data manipulation.

COP 3300 SC GPSS SIMULATION (3)
PR: COP 3110. The development and execution of discrete event simulation models of real world systems using the GPSS language.

COP 3310 SC SIMSCRIPT SIMULATION (3)

COP 4204 SC COMPUTER APPLICATIONS (3)
PR: COP 3110. Applications of various high level languages to current scientific and engineering problems.

COP 4530 SC DATA REPRESENTATION AND MANIPULATION (3)
PR: COP 3300. Study of the internal representations of data, data storage and retrieval, and data manipulations.

GRADUATE COURSES

CAP 5812 SC COMPUTERS FOR RESEARCH I (3)
PR: Graduate student status. The use of the FORTRAN language in solving research problems.

CAP 6813 SC COMPUTERS FOR RESEARCH II (3)
PR: CAP 5812 or equivalent. Continuation of the material covered in CAP 5812. Use of computer libraries, plotting equipment and statistical packages.

COLLEGE OF FINE ARTS

ART


UNDERGRADUATE COURSES

ARH 4170 GREEK AND ROMAN ART (4)
A comprehensive study of Aegean, Mycenaean, Etruscan, Greek and Roman painting, sculpture and architecture.

ARH 4200 MEDIEVAL ART (4)
A comprehensive study of early Christian, Byzantine and Medieval painting, sculpture, architecture and manuscript illumination.

ARH 4301 RENAISSANCE ART (4)
A comprehensive study of Renaissance and Mannerist painting, sculpture and architecture in Italy and Northern Europe.

ARH 4350 BAROQUE AND ROCOCO ART (4)
A comprehensive study of the painting, sculpture and architecture in France, Italy, Spain and the Netherlands in the seventeenth and early eighteenth centuries.

ARH 4430 NINETEENTH CENTURY ART (4)
A comprehensive study of nineteenth century painting, sculpture and architecture in France and England.

ARH 4450 TWENTIETH CENTURY ART (4)
A comprehensive study of painting, sculpture and architecture from Cezanne to the present in Europe and the United States. Required of all art majors.
ART 4520C PAINTING II
PR: ART 3510C. Continued problems in painting. May be repeated.

ART 4601C PHOTOGRAPHY II
PR: ART 3600C. Continued problems in photography. May be repeated.

ART 4631C CINEMATOGRAPHY II
PR: ART 3630C. Continued problems in cinematography. May be repeated.

ART 4633C SOUND TECHNIQUES
PR: ART 3630C. The recording and editing of sound for film. Collaboration with other departments, particularly Music and Theatre, is encouraged. To be taken concurrently with ART 4631C or ART 5642C whenever possible.

ART 4702C SCULPTURE II
PR: ART 3701C. Continued problems in sculpture. May be repeated.

ART 4900 DIRECTED READING
(1-4)
PR: CI and CC. A course of reading and study in an area of special concern governed by student demand, instructor interest and/or departmental requirements. Registration by contract only. May be repeated for credit for different study areas only.

ART 4905 DIRECTED STUDY
(1-4)
PR: CC. Independent studies in the various areas of Visual Arts. Course of study and credits must be assigned prior to registration. May be repeated.

ART 4935 ART SENIOR SEMINAR
(2)
PR: Senior Status. To aid majors to understand, appraise, and perfect their own art and technique through critical and aesthetic judgments of their colleagues. Discussion and critical evaluation.

GRADUATE COURSES

Admission to all 5000 level studio courses by Consent of Instructor.

ART 6055 ART HISTORY
PR: CI. May be repeated.

ART 5125C CERAMICS
PR: ART 4111C. Advanced problems in the various ceramic techniques, including throwing and glaze calculation. May be repeated.

ART 5340C DRAWING
PR: ART 4320C. Advanced problems in various drawing techniques. Emphasis on individual creative expression. May be repeated.

ART 5422C LITHOGRAPHY
PR: ART 4421C. Advanced problems in various lithographic techniques. Emphasis on individual creative expression. May be repeated.

ART 5472C INTAGLIO
PR: ART 4471C. Investigations into more complex intaglio processes including phototinting and color printing procedures. Emphasis on personal conceptual development in graphic media. May be repeated.

ART 5532C PAINTING
PR: ART 4520C. Advanced problems in the various painting techniques. Emphasis on individual creative expression. May be repeated.

ART 5604C PHOTOGRAPHY
PR: CI. Advanced work in photography and related media leading to development of personal/expressive statements. May be repeated.

ART 5642C CINEMATOGRAPHY
PR: ART 4631C. Advanced studio work using black and white, color and sound as technical and aesthetic factors in visual, artistic productions. May be repeated.

ART 5730C SCULPTURE
PR: ART 4702C. Advanced problems in the various techniques of sculpture. Emphasis on individual creative expression. May be repeated.

ART 5910 RESEARCH
(1-4)
PR: CC. May be repeated.

ART 5936 STUDIO TECHNIQUES: SELECTED PROJECTS
PR: Visual Concepts I, II, and Introduction to Art, the topic-technique-related 3000-4000 level studio sequence and CI. Concentration in specialized technical data and process. May be repeated for credit for different topics only.

ART 4111C CERAMICS II
PR: ART 3110C. Continued problems in ceramics. May be repeated.

ART 4320C DRAWING II
PR: ART 3301C. Continued problems in drawing. May be repeated.

ART 4421C LITHOGRAPHY II
PR: ART 3420. Continued problems in lithography. May be repeated.

ART 4471C INTAGLIO II
PR: ART 3470. Continued problems in intaglio. May be repeated.

ART 4520C PAINTING II
PR: ART 3510C. Continued problems in painting. May be repeated.

ART 4601C PHOTOGRAPHY II
PR: ART 3600C. Continued problems in photography. May be repeated.

ART 4631C CINEMATOGRAPHY II
PR: ART 3630C. Continued problems in cinematography. May be repeated.

ART 4633C SOUND TECHNIQUES
PR: ART 3630C. The recording and editing of sound for film. Collaboration with other departments, particularly Music and Theatre, is encouraged. To be taken concurrently with ART 4631C or ART 5642C whenever possible.

ART 4702C SCULPTURE II
PR: ART 3701C. Continued problems in sculpture. May be repeated.

ART 4900 DIRECTED READING
(1-4)
PR: CI and CC. A course of reading and study in an area of special concern governed by student demand, instructor interest and/or departmental requirements. Registration by contract only. May be repeated for credit for different study areas only.

ART 4905 DIRECTED STUDY
(1-4)
PR: CC. Independent studies in the various areas of Visual Arts. Course of study and credits must be assigned prior to registration. May be repeated.

ART 4935 ART SENIOR SEMINAR
(2)
PR: Senior Status. To aid majors to understand, appraise, and perfect their own art and technique through critical and aesthetic judgments of their colleagues. Discussion and critical evaluation.

GRADUATE COURSES

Admission to all 5000 level studio courses by Consent of Instructor.
ART 673C INTAGLIO
PR: CI. May be repeated.

ART 6580C PAINTING
PR: CI. May be repeated.

ART 6620C PHOTOGRAPHY
PR: CI. May be repeated.

ART 6645C CINEMATOGRAPHY
PR: CI. May be repeated.

ART 6731C SCULPTURE
PR: CI. May be repeated.

ART 6907 INDEPENDENT STUDY
PR: Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

ART 6911 DIRECTED RESEARCH
PR: CI. Master's level. Repeatable. (S/U only.)

ART 6936 GRADUATE SEMINAR
PR: CI. Advanced course in theoretical and conceptual foundations of the visual arts. The specific content and structure to be determined by the instructor. Must be repeated for a minimum of four hours.

ART 6937 GRADUATE INSTRUCTION METHODS
PR: Graduate instruction methods. (1-4)

ART 6940 SELECTED TOPICS IN ART
PR: Graduate Standing and CI. Variable credit depending upon the scope and magnitude of the work agreed to by the student and the responsible member of the faculty. May be repeated.

ART 6956 GRADUATE STUDIO THESIS
PR: CI. An advanced seminar focused on the problems of documenting in verbal form the development of a body of work in the visual arts.

ART 6971 THESIS: MASTER'S
PR: CI. May be repeated. (S/U only.)

DANCE
Chairperson: L. D. Berger; Professors: W. G. Hug, L. D. Berger; Associate Professor: C. Robinson; Assistant Professors: J. Brody, F. Fairrie, H. Parrish; Lecturer: L. A. Cunningham; Affiliate: R. Diaz

UNDERGRADUATE COURSES

DAA 2100 FUNDAMENTALS OF MODERN DANCE I
To acquaint beginning modern dance students with fundamentals of dance vocabulary, movement, rhythm and alignment. (2)

DAA 2160 MODERN DANCE II
PR: Admission by audition. Study of principles of modern dance technique. Practical work in exercises and movement phrases, utilizing basic movements. Development of rhythmic and dynamic concepts. Rehearsals and research. The use of ballet vocabulary (French terms). Material is covered almost totally as practical work in class with a few outside projects. Concert and performance attendance required. May be repeated. (Modern requirement)

DAA 2200 FUNDAMENTALS OF BALLET I
To acquaint beginning ballet dance students with fundamentals of vocabulary, movement, rhythm and alignment. (2)

DAA 2201 BALLET II
PR: Admission by audition. Positions and barre exercises. Stress on correct alignment of the body and the application of simple step combinations in centre work. The use of ballet vocabulary (French terms). Material is covered almost totally as practical work in class with a few outside projects. Concert and performance attendance required. May be repeated. (Modern requirement)

DAA 3161 MODERN DANCE III
PR: Admission by audition. Continuation of DAA 2160. Further emphasis on style and phrasing. Work in projecting mood and quality by dancing and rehearsing in more advanced student choreography, leading to performance. Rehearsal hours to be arranged. May be repeated.

DAA 3202 BALLET III
PR: Admission by audition. Intensification of barre exercises for the development of strength and form. Most of the ballet steps are introduced. Application of phrasing and movement. Material covered is practical work in class for concerts and performances. May be repeated.

DAA 3220 BALLET VARIATIONS
PR: DAA 3202. This course introduces fundamental exercises for the development of pointe technique. Material covered may also be pas de deux, character, and variations. Must be repeated for a total of 4 hours by majors in ballet concentration. May be repeated.

DAA 3502 JAZZ DANCE
PR: DAA 3161 or DAA 3202 or CI. A technique class with an emphasis on highly stylized, percussive movement on a strong rhythmic base. Required is the performance of a short dance sequence encompassing these skills. May be repeated.

DAA 3700 CHOREOGRAPHY I
PR: Admission by audition. Study and execution of basic principles of composition. Preparation of studies in theme and variations, breath phrases and metric phrases. May be repeated.

DAA 3701 CHOREOGRAPHY II
PR: DAA 3700 or CI. Preparation of studies in rhythm, dynamics, form and motivation, culminating in a solo. May be repeated.

DAA 4162 MODERN DANCE IV
PR: Admission by audition. Intensive work on the growth of personal performance styles. Equal emphasis will be given to training the body in the development of technical excellence. May be repeated.

DAA 4203 BALLET IV
PR: Admission by audition. Perfecting the execution of barre work. Intensification of centre work. More stress on aesthetic quality of movement and phrasing. Students expected to be proficient in pointe work. A few outside projects, concerts, and performances is required. May be repeated.

DAA 4702 CHOREOGRAPHY III
PR: DAA 3701 or CI. Work directed toward duets and group dances. The students will submit choreographic ideas for instructor's approval, then proceed with rehearsals. The best dances will be performed and fully produced under supervision of student choreographers. Lec-lab., reading. May be repeated.

DAA 4703 CHOREOGRAPHY IV
PR: DAA 4702. The student will prepare studies based on free form, minimal art, and chance methods. Lec-lab., reading. May be repeated.

DAN 3100 INTRODUCTION TO DANCE
PR: Upper-division majors, a study of the art of dance. Lecture and activities including Modern, Ballet, Jazz, Ethnic, and Tap. DAN 3100 may be used for University General Distribution Requirement-by the non-major; and may be used to satisfy part of the 6 hour in-College Requirement for Fine Arts Majors in Art, Music and Theatre.

DAN 3590 PRACTICUM IN DANCE PRODUCTION I
A practicum in mounting dance concerts with shop work and backstage participation. Intended for students writing in costuming, set design, choreography, lighting, stage management and production crewing. Dance majors must have at least 2 credits for graduation accumulated in two different semesters.

DAN 3610 MUSIC FOR DANCE
Development of practical music skills in relation to dance. Emphasis on rhythm and the relationship of music forms to dance. May be repeated up to 4 credit hours.

DAN 3611 MUSIC FOR DANCE II
PR: DAN 3610 or CI. Elements of music within historical context. Continued problems in rhythmic materials.

DAN 3710 REPERTORY
The development and performance of solo and/or group dances. Open to all University students by audition. May be repeated.

DAN 4120 SURVEY HISTORY OF DANCE

DAN 4151 19TH AND 20TH CENTURY DANCE
Survey history of dance. Study of development of dance from 19th Century through 20th Century. Theatrical and other expressive forms included. Reading, lecture and visual aids.

DAN 4170 DANCE SENIOR SEMINAR
PR: Senior of CC. To aid majors to understand, appraise and perfect their own art and technique through critical and aesthetic judgments of their colleagues.

DAN 4905 DIRECTED READING
PR: CI and CC. Readings in 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.
DAN 4906 DIRECTED STUDY (1-5)
PR: CC. Independent studies in the various areas of Dance. Course of study and credits must be assigned prior to registration. May be repeated.

DAN 4930 SELECTED TOPICS IN DANCE (1-5)
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.

MUSIC

UNDERGRADUATE COURSES

MUC 2302 COMPOSITION (3)
PR: MUC 1113 and CI. Private instruction in original composition. Required of composition majors. May be repeated for three semesters.

MUC 2301 INTRODUCTION TO ELECTRONIC MUSIC (2)
History and repertory of electronic music; standard sound studio techniques; basic electronics as applied in electronic sound synthesis; mathematics for music composition and electronic music.

MUC 2303 COMPOSITION (3)
PR: Necessary competency at MUC 2200 level determined by faculty jury. Private instruction in original composition. Required of composition majors. May be repeated for three semesters.

MUC 3401, 3402 ELECTRONIC MUSIC—ANALOG SYNTHESIS (3,3)
PR: MUC 2301 and CI. Composition for tape medium with analog synthesizers; use of sound recording studio; repertory or analog music synthesis; technical basis of analog systems design and construction.

MUC 3441, 3442 ELECTRONIC MUSIC—DIGITAL SYNTHESIS (3,3)
PR: MUC 2301 and CI. Computer assisted composition for conventional instruments; composition for tape medium with computer controlled analog synthesizers; direct digital synthesis; digital systems design and construction.

MUC 3601, 3602 CONTEMPORARY TECHNIQUES OF COMPOSITION (3,3)
PR: CI. Instruction in the use of major Twentieth-Century compositional techniques; tonal, unorganized set, and serial composition and the use of indeterminacy in composition and performance.

MUC 4204 COMPOSITION (3)
PR: Necessary competency at MUC 3203 level determined by faculty jury. Private instruction in original composition. Required of composition majors. Must be repeated for credit for a minimum of 6 hours for majors.

MUC 4405, 4406 ELECTRONIC MUSIC—REAL-TIME PERFORMANCE (3,3)
PR: MUC 3403 and MUC 3442 or equivalent. Composition for analog/digital equipment, performance applications; sound synthesis, interfacing electronics with conventional instruments.

MUC 4501 SEMINAR IN NEW MUSICAL SYSTEMS (2)
PR: CI. Experimental sound sources and ensemble groupings; creating of new instruments; unfamiliar sonic materials and unique social contexts for music. May be repeated for credit.

MUC 3101 BASIC CONDUCTING (2)
PR: CI. The study and practical application of basic conducting techniques. Development of skills related to the conducting of musical scores.

MUC 4201 CHORAL CONDUCTING (2)
PR: MUC 3101 or its equivalent and CI. Practical application of conducting techniques to choral works, score study, performance practices, and rehearsal techniques. Class serves as performing group.

MUC 4301 INSTRUMENTAL CONDUCTING (2)
PR: MUC 3101 & CI. A study of those techniques of conducting unique to instrumental music ensembles: baton technique, score reading, terminology, rehearsal management.

MUC 3500 HISTORY OF POPULAR MUSIC (3)
Popular music in the U.S. from 1820 to the present. Units on the big band era, country and western, jazz, Black music, and the rock scene beginning in 1955. May be used for University General Distribution Requirements and may be used to satisfy part of the 6 hours in College Requirement for Fine Arts majors in Art, Dance, Theatre and as a music elective.

MUL 3211, 3212 MUSIC HISTORY (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.

MUL 3403 HISTORY OF JAZZ (2)
PR: CI. A study of the evolution of jazz, 1890 to present. Open to majors and non-majors.

MUL 2111, 2112 INTRODUCTION TO MUSIC LITERATURE (2,2)
PR: MUC 1112 or CI. A survey of representative music exemplars of the past and present with emphasis on the study of styles and form. Required for music majors.

MUL 3001 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. This course is also available on WUSF/TV Channel 16 by the O.U. Program. (S/U only.)

MUL 3011, 3012 THE ENJOYMENT OF MUSIC (2,2)
Open only to non-music majors; a study in the art of music and its materials, designed to develop an understanding of basic principles of music and a technique for listening to music.

MAJOR PERFORMING ENSEMBLES (below)
PR: CI. Open to all university students with the necessary proficiency in their performing media; study and performance of music for large combinations of voices, string, woodwind, brass, or percussion instruments. May be repeated for credit.

MUN 3001 UNIVERSITY CHORUS (1)
MUN 3140 WIND ENSEMBLE (1)
MUN 3210 UNIVERSITY ORCHESTRA (1)
MUN 3310 UNIVERSITY SINGERS (1)
MUN 3380 UNIVERSITY-COMMUNITY CHORUS (1)
MUN 3451 PIANO ENSEMBLE (1)
MUN 3501 OPERA WORKSHOP (1)
MUN 3710 JAZZ LABORATORY BAND (1)

CHAMBER MUSIC ENSEMBLES (below)
PR: CI. Open to all university students with the necessary proficiency in their performing media; study and performance of music for small combinations of voices, string, woodwind, brass, or percussion instruments, and piano; may be repeated for credit.

MUN 3340 CHAMBER SINGERS (1)
MUN 3411 STRING QUARTET (1)
MUN 3412 FLUTE CHOIR (1)
MUN 3423 CLARINET CHOIR (1)
MUN 3426 WOODWIND QUINTET (1)
MUN 3430 BRASS CHOIR (1)
MUN 3432 HORN QUARTET (1)
MUN 3436 BRASS QUINTET (1)
MUN 3440 PERCUSSION ENSEMBLE (1)
MUN 3441 MARIMBA ENSEMBLE (1)
MUN 3470 COLLEGIUM MUSICUM (1)

MUG 4900 DIRECTED RESEARCH (1-3)
PR: CI and CC. Readings in a topic of special interest to the student. Selection of topic and materials must be agreed upon and appropriate credit must be assigned prior to registration. A contract with all necessary signatures is required for registration. May be repeated for credit for different topics only.

MUS 4905 DIRECTED STUDY (1-4)
PR: CI. Independent studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

MUS 4930 SELECTED TOPICS IN MUSIC (1-4)
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 4930 SELECTED STUDIO COURSES (1-4)
PR: CI. The content of the study will be governed by individual student and instructor interest with an emphasis on individual instruction.

MUS 4935 MUSIC SEMINAR SEMINAR (2)
PR: To aid majors to understand, appraise and perfect their own art through critical and aesthetic judgments of their colleagues. (S/U only.)

MUT 1011 RUDIMENTS OF MUSIC (2)
Open to non-music majors; development of skills in hearing and performing music and in basic notation. Will not count as degree credit for music majors.

MUT 1111, 1112 MUSIC THEORY (3,3)
PR: CI. Required of music majors; development of skills in perceiving and writing music through the use of aural and visual analysis of examples from all historical periods of music literature.

MUT 1241, 1242 AURAL THEORY (1,1)
PR: Course designed to begin training in aural recognition and vocal realization of materials used in music composition. Includes rhythmic, melodic and harmonic dictation, and sight singing. To be taken concurrently with MUT 1111, 1112.

MUT 2116, 2117 MUSIC THEORY (3,3)
PR: MUT 1112. Required of music majors, continuation of MUT 1111 and 1112.

MUT 2246, 2247 ADVANCED AURAL THEORY (1,1)
PR: MUT 1243. Course designed to continue training in aural recognition and vocal realization of materials used in music composition. Includes rhythmic, melodic and harmonic dictation, and sight singing. To be taken concurrently with MUT 2116, 2117.

MUT 3353 JAZZ THEORY AND ARRANGING I (2)
PR: MUT 1113 and/or CI. A study of jazz harmony, scales, and melodic practices, leading to arranging for jazz ensembles.

MUT 3354 JAZZ THEORY AND ARRANGING II (2)
PR: MUT 3353 or CI. A continuation of Jazz Theory and Arranging I with emphasis on arranging for jazz ensembles.

MUT 3641 JAZZ IMPROVISATION I (1)
PR: MUT 1112 and/or CI. A study of jazz improvisational techniques. May be repeated for credit.

MUT 3642 JAZZ IMPROVISATION II (1)
PR: MUT 1112 & CI. A studio course of study designed to advance the student's improvisational techniques; emphasis on individual performance. May be repeated for credit.

MUT 4311, 4312 ORCHESTRATION (2,2)
PR: CI. Intensive study and practice in scoring music for various combinations of instruments, including symphony orchestra, band, and smaller ensembles of string, woodwind, brass, and percussion instruments.

MUT 4811 SIXTEENTH CENTURY PRACTICE (2)
PR: MUT 2117. A study of the music of the 16th century from a theoretical standpoint; development of skills in perceiving and writing music in the style of the period through the use of aural and visual analysis.

MUT 4821 EIGHTEENTH CENTURY PRACTICE (2)
PR: MUT 2117. An intensive study of the contrapuntal practice of the 18th century; development of skills in perceiving and writing music in the style of the period through the use of aural and visual analysis.

MUT 4431 TWENTIETH CENTURY PRACTICE (2)
PR: MUT 2117. A study of 20th century theoretical concepts; development of skills in perceiving and writing music in contemporary styles through the use of aural and visual analysis.

SECONDARY APPLIED MUSIC COURSES (below)
PR: CI. One half-hour private lesson or one hour class per week for music students wishing to gain proficiency in an area other than their applied performance major and for a limited number of non-music majors who have had prior musical training. Course is open by audition only.

MVB 1211 APPLIED TRUMPET (1)
MVB 1212 APPLIED FRENCH HORN (1)
MVB 1213 APPLIED TROMBONE (1)
MVB 1214 APPLIED BARITONE (1)
MVB 1215 APPLIED TUBA (1)
MVB 1211 APPLIED PIANO (1)
MVP 1211 APPLIED PERCUSSION (1)
MVS 1211 APPLIED VIOLIN (1)
MVS 1212 APPLIED VIOLIN (1)
MVS 1213 APPLIED VIOLONCELLO (1)

MVS 1214 APPLIED DOUBLE BASS (1)
MVS 1215 APPLIED HARP (1)
MVS 1216 APPLIED CLASSICAL GUITAR (1)
MVV 1211 APPLIED VOICE (1)
MVV 1211 APPLIED FLUTE (1)
MVV 1212 APPLIED OBOE (1)
MVP 1213 APPLIED CLARINET (1)
MVV 1214 APPLIED BASSOON (1)
MVV 1215 APPLIED SAXOPHONE (1)

CLASS PIANO COURSES (below)
PR: CI. Class is elementary piano and music fundamentals designed for students with limited keyboard experience. Primary emphasis is placed on sight-reading, accompanying, transposition, harmonization, basic technique, and appropriate literature.

MVK 1111 MUSIC MAJORS, LEVEL I (2)
MVK 1121 MUSIC MAJORS, LEVEL II (2)
MVK 2111 MUSIC MAJORS, LEVEL III (2)
MVK 1212 MUSIC MAJORS, LEVEL IV (2)
MVK 3111 MUSIC MAJORS, LEVEL V (2)
MVK 1811 NON-MUSIC MAJORS, LEVEL I (2)
MVK 1821 NON-MUSIC MAJORS, LEVEL II (2)
MVK 2811 NON-MUSIC MAJORS, LEVEL III (2)
MVK 2821 NON-MUSIC MAJORS, LEVEL IV (2)

APPLIED MUSIC COURSES (below)
PR: CI. Required of all applied music majors; open to a limited number of non-music majors by audition only. Private and class instruction in string, woodwind, brass and percussion instruments, voice and piano. May be repeated for credit.

MVB 1411 APPLIED TRUMPET (3)
MVB 1412 APPLIED FRENCH HORN (3)
MVB 1413 APPLIED TROMBONE (3)
MVB 1414 APPLIED BARITONE (3)
MVB 1415 APPLIED TUBA (3)
MVB 1411 APPLIED PIANO (3)
MV 1413 APPLIED PERCUSSION (3)
MVS 1411 APPLIED VIOLIN (3)
MVS 1412 APPLIED VIOLONCELLO (3)
MVS 1413 APPLIED VIOLONCELLO (3)
MVS 1414 APPLIED DOUBLE BASS (3)
MVS 1415 APPLIED HARP (3)
MVS 1416 APPLIED CLASSICAL GUITAR (3)
MVV 1411 APPLIED VOICE (3)
MVV 1411 APPLIED FLUTE (3)
MVV 1412 APPLIED OBOE (3)
MVV 1413 APPLIED CLARINET (3)
MVS 1414 APPLIED BASSOON (3)
MVS 1415 APPLIED SAXOPHONE (3)

APPLIED MUSIC COURSES (below)
PR: CI. Necessary competency at freshman level determined by faculty jury examination. Open to 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 three semesters.

MVB 2421 APPLIED TRUMPET (3)
MVB 2422 APPLIED FRENCH HORN (3)
MVB 2423 APPLIED TROMBONE (3)
KVB 2424 APPLIED BARITONE (3)
MVB 2425 APPLIED TUBA (3)
MVK 2421 APPLIED PIANO (3)
MVP 2421 APPLIED PERCUSSION (3)
MVS 2421 APPLIED VIOLIN (3)
MVS 2422 APPLIED VIOLONCELLO (3)
MVS 2423 APPLIED CLARINET (3)
MVS 2423 APPLIED VIOLONCELLO (3)
MVS 2424 APPLIED VIOLONCELLO (3)
MVS 2425 APPLIED VIOLONCELLO (3)

APPLIED MUSIC COURSES (below)
PR: Necessary competency at sophomore level determined by faculty jury examination. Required of all applied music majors. Private and
class instruction in string, woodwind, brass, and percussion instruments, voice and piano. May be repeated for credit three semesters only.

MVB 3431 APPLIED TRUMPET (3)
MVB 3432 APPLIED FRENCH HORN (3)
MVB 3433 APPLIED TROMBONE (3)
MVB 3434 APPLIED BARITONE (3)
MVB 3435 APPLIED Tuba (3)
MVK 3431 APPLIED PIANO (3)
MVP 3431 APPLIED PERCUSSION (3)
MVS 3433 APPLIED VIOLONCELLO (3)
MVS 3434 APPLIED DOUBLE BASS (3)
MVS 3435 APPLIED HARP (3)
MVS 3435 APPLIED VIOLIN (3)
MVG 3436 APPLIED VIOLONCELLO (3)
MVW 3441 APPLIED BASSOON (3)
MVS 3445 APPLIED SAXOPHONE (3)
MVS 3446 APPLIED CLASSICAL GUITAR (3)

APPLIED MUSIC COURSES (below)
PR: Necessary competency at junior 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 minimum of 6 hours for majors.

MVB 4441 APPLIED TRUMPET (3)
MVB 4442 APPLIED FRENCH HORN (3)
MVB 4443 APPLIED TROMBONE (3)
MVB 4444 APPLIED BARITONE (3)
MVB 4445 APPLIED Tuba (3)
MVP 4441 APPLIED VIOLONCELLO (3)
MVS 4441 APPLIED VIOLIN (3)
MVS 4442 APPLIED VIOLA (3)
MVS 4443 APPLIED VIOLONCELLO (3)
MVS 4444 APPLIED DOUBLE BASS (3)
MVS 4445 APPLIED HARP (3)
MVS 4446 APPLIED CLASSICAL GUITAR (3)
MVS 4447 APPLIED VOICE (3)
MVS 4448 APPLIED FLUTE (3)
MVS 4449 APPLIED OBOE (3)
MVS 4450 APPLIED CLARINET (3)
MVS 4451 APPLIED BASSOON (3)
MVS 4452 APPLIED SAXOPHONE (3)
MVS 4453 APPLIED HORN (3)
MVS 4454 APPLIED TROMBONE (3)
MVS 4455 APPLIED Tuba (3)
MVS 4456 APPLIED VIOLONCELLO (3)
MVS 4457 APPLIED VIOLIN (3)
MVS 4458 APPLIED VIOLA (3)
MVS 4459 APPLIED BASSOON (3)
MVS 4460 APPLIED CLASSICAL GUITAR (3)
MVS 4461 APPLIED VIOLONCELLO (3)
MVS 4462 APPLIED VIOLA (3)
MVS 4463 APPLIED VIOLONCELLO (3)
MVS 4464 APPLIED DOUBLE BASS (3)
MVS 4465 APPLIED HARP (3)
MVS 4466 APPLIED CLASSICAL GUITAR (3)
MVS 4467 APPLIED VIOLONCELLO (3)
MVS 4468 APPLIED VIOLA (3)
MVS 4469 APPLIED BASSOON (3)
MVS 4470 APPLIED SAXOPHONE (3)

MUSIC STUDIO PEDAGOGY COURSES (below)
PR: CI. May be elected by undergraduate music majors; emphasis on the management of the studio music, the musical responsibilities of the studio teacher, the techniques of private instruction. May be repeated for credit for a maximum of 4 hours for the same section.

MVB 4640 BRASS (2)
MVK 4640 CLASS PIANO (2)
MVK 4641 PIANO (2)
MYS 4640 STRINGS (2)
MVW 4640 VOICE (2)
MVW 4640 WINDS AND PERCUSSION (2)

GRADUATE COURSES

MUC 6251 COMPOSITION (4)
PR: CI. Private instruction in original composition. Required of composition majors. May be repeated for three semesters.

MUC 6444, 6445 ELECTRONIC MUSIC/ANALOG/ DIGITAL SYSTEMS RESEARCH (3,3)
PR: CI. State-of-the-art compositional and performance applications; new concepts of electronic music synthesis; documentation and critical analysis of new repertory.

MUC 6256, 6257, 6258 CHORAL LITERATURE AND CONDUCTING (4,4,4)
PR: CI. Combination of seminar, classroom and laboratory types of experience designed to provide depth in stylistic study of choral music literature and performance.

MUL 6375 TWENTIETH CENTURY MUSIC LITERATURE (2)
PR: CI. A study of the literature, compositional techniques and music philosophies of the major 20th century composers from Debussy to the present.

MUL 6410, 6411 KEYBOARD REPOTRY (1-2)
PR: CI. A study of style, history and performance practice in keyboard repertory including masterworks of all periods.

MUL 6505 SYMPHONIC LITERATURE (2)
PR: CI. A chronological study of the development of orchestral music; analysis and study of major works from a stylistic and historical perspective.

MUL 6565 CHAMBER MUSIC LITERATURE (2)
PR: CI. A survey and stylistic analysis of chamber music repertory 1750 through the present day; emphasis on aural recognition of representative works.

MUL 6624, 6625 SONG LITERATURE (2,2)
PR: CI. Solo song literature from the 17th century through the contemporary with emphasis on German lieder, French songs and contemporary English and American songs special emphasis on performance.

MUL 6663 OPERA LITERATURE (2)
PR: CI. A chronological study of the development of opera from 1600 to the present; emphasis on the technical, stylistic, and performance aspects of opera.

MUL 6687 SOLO VOCAL LITERATURE IN ORATORIO (2)
PR: CI. A survey of literature for the solo voice in cantatas and orchestra music.

MAJOR ENSEMBLE PERFORMANCE COURSES (below)
PR: CI. Open to all university students with the necessary proficiency in their performing media; study and performance of music for large combinations of voices, string, woodwind, brass or percussion instruments; may be repeated for credit.

MUN 6100 UNIVERSITY BAND (1)
MUN 6140 WIND ENSEMBLE (1)
MUN 6210 UNIVERSITY ORCHESTRA (1)
MUN 6310 UNIVERSITY SINGERS (1)
MUN 6380 UNIVERSITY-COMMUNITY CHORUS (1)
MUN 6451 PIANO ENSEMBLE (1)
MUN 6501 OPERA WORKSHOP (1)
MUN 6710 JAZZ LABORATORY BAND (1)

CHAMBER MUSIC ENSEMBLES COURSES (below)
PR: CI. Open to all university graduate students with the necessary proficiency in their performance media; study and performance of music for small combinations of voices, string, woodwind, brass or percussion instruments, and piano; may be repeated for credit.

MUM 6346 CHAMBER MUSIC WORKSHOPS (1-2)
MUM 6411 STRING QUARTET (1)
MUM 6421 FLUTE CHOIR (1)
MUM 6423 CLARINET CHOIR (1)
MUM 6426 WOODWIND QUINTET (1)
MUM 6430 BRASS CHOIR (1)
MUM 6432 HORN QUARTET (1)
MUN 6436 BRASS QUINTET (1)
MUN 6440 PERCUSSION ENSEMBLE (1)
MUN 6441 MARIMBA ENSEMBLE (1)
MUN 6470 COLLEGIUM MUSICUM (1)
MUN 6490 NEW MUSIC ENSEMBLE (1)

MUS 5905 DIRECTED STUDY (1-4)
PR: CC. Independent studies in the various areas of music; course of study and credits must be assigned prior to registration; may be repeated.

MUS WORKSHOP COURSES (below)
PR: CI. Intensive study in the specialized areas indicated below; open to teachers, University students, and secondary students; credit available to qualified students.

MUS 5924 BAND WORKSHOP (1-2)
MUS 5925 CHAMBER MUSIC WORKSHOP (1-2)
MUS 5926 CHORUS WORKSHOP (1-2)
MUS 5927 ORCHESTRA WORKSHOP (1-2)
MUS 5928 PIANO WORKSHOP (1-2)
MUS 5929 STRING WORKSHOP (1-2)

MUS 6793 TECHNIQUES OF RESEARCH IN MUSIC (2)
PR: CC. A study of the methods of research and professional
bibliography and with an individual, formal project as a terminal requirement.

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

MUS 6910 DIRECTED RESEARCH
PR: Graduate standing. Repeatable. (S/U only.)

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

MUS 6976 GRADUATE RECITAL
PR: CC.

MUS 6994 GRADUATE INSTRUCTION METHODS
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 4 credit hours per student. (S/U only.)

MUS 6995 GRADUATE RESEARCH METHODS
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 4 credit hours per student. (S/U only.)

MUT 5051 GRADUATE REVIEW OF MUSIC THEORY
A graduate level review of basic theoretical concepts with emphasis on the common practice period. The course serves to satisfy deficiencies in music theory and as such does not count toward the degree.

APPLIED MUSIC COURSES (below)
PR: Necessary competency determined by faculty jury audition. Required of all applied music majors. Private and class instruction.

MVB 6251 APPLIED TRUMPET, SECONDARY
MVB 6252 APPLIED FRENCH HORN, SECONDARY
MVB 6253 APPLIED TROMBONE, SECONDARY
MVB 6254 APPLIED BARITONE, SECONDARY
MVB 6255 APPLIED Tuba, SECONDARY
MVB 6451 APPLIED TRUMPET
MVB 6452 APPLIED FRENCH HORN
MVB 6453 APPLIED TROMBONE
MVB 6454 APPLIED BARITONE
MVB 6455 APPLIED Tuba
MVB 6521 APPLIED PIANO, SECONDARY
MVB 6522 APPLIED VIOLIN, SECONDARY
MVB 6523 APPLIED VIOLIN
MVP 6251 APPLIED VIOLIN, SECONDARY
MVP 6252 APPLIED VIOLIN
MVP 6253 APPLIED VIOLONCELLO, SECONDARY
MVP 6254 APPLIED VIOLONCELLO
MVP 6255 APPLIED DOUBLE BASS, SECONDARY
MVP 6256 APPLIED Harp, SECONDARY
MVP 6257 APPLIED CLASSICAL GUITAR, SECONDARY
MVP 6258 APPLIED VIOLIN
MVP 6259 APPLIED VIOLIN
MVW 6251 APPLIED VOICE, SECONDARY
MVW 6252 APPLIED VOICE
MVW 6253 APPLIED CLARINET, SECONDARY
MVW 6254 APPLIED CLARINET
MVW 6255 APPLIED SAXOPHONE, SECONDARY
MVW 6256 APPLIED FLUTE
MVW 6257 APPLIED FLUTE
MVW 6258 APPLIED OBOE
MVW 6259 APPLIED OBOE
MVW 6451 APPLIED VIOLIN
MVW 6452 APPLIED VIOLIN
MVW 6453 APPLIED VIOLIN
MVW 6454 APPLIED BASSOON
MVW 6455 APPLIED SAXOPHONE

MASTER CLASS COURSES (below)
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.

MVK 5751 PIANO, MASTER CLASS
MVS 5750 STRINGS, MASTER CLASS
MVV 5751 VOICE, MASTER CLASS

STUDIO TEACHING SEMINAR (below)
PR: Graduate standing in performance and CI; emphasis on techniques used in teaching the individual student in performance.

MVK 6650 STUDIO TEACHING SEMINAR-CLASS
MVS 6650 STUDIO TEACHING SEMINAR-VOCAL
MVS 6650 STUDIO TEACHING-CLARINET
MVS 6650 STUDIO TEACHING-WINDS AND PERCUSSION

MUSIC EDUCATION
Chairperson: L. Cullison; Professors: V.A. Bridges, L. Cullison, T.B.A., T.B.A.

UNDERGRADUATE COURSES

MUE 2420 THEORETICAL BASICES OF MUSIC EDUCATION
The course is designed to investigate music education practices in the schools. It provides the student with experience and information early in his academic career which will enable him to determine his commitment to professional music education.

MUE 3411 CHORAL MATERIALS PRACTICUM
PR: CI. A study of choral materials in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each semester. May be repeated for a total of 2 credit hours.

MUE 3413 BAND MATERIALS PRACTICUM
PR: CI. A study of band materials, in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each semester. May be repeated for a total of 2 credit hours.

MUE 3414 ORCHESTRA MATERIALS PRACTICUM
PR: CI. A study of orchestra materials, in a laboratory setting, appropriate to elementary and secondary school music programs. Course content will change each semester. May be repeated for a total of 2 credit hours.

MUE 4050 FOUNDATIONS OF INSTRUMENTAL MUSIC
PR: CI. Junior standing. Introduction to the foundation of instrumental music instruction in the elementary and middle school.

MUE 4130 CLASSROOM MUSIC IN THE SECONDARY SCHOOL
PR: CI. Development and implementation of methods and techniques for teaching music to the student not participating in secondary school music performing groups.

MUE 4314 MUSIC IN THE ELEMENTARY SCHOOL
A study of principles, techniques, materials, and activities as they relate to a comprehensive music curriculum in Grades K-6.

MUE 4331 CHORAL METHODS IN THE SECONDARY SCHOOL

MUE 4332 INSTRUMENTAL MUSIC IN THE SECONDARY SCHOOL

MUE 4480 BAND PAGEANTRY
This course is designed as an elective offering for instrumental music majors who expect to direct band activities in a secondary school. It will provide the student with skills in creating half-time shows, and integral part of the band teacher's responsibilities.

MUE 4995 INDEPENDENT STUDY: MUSIC EDUCATION
PR: CI. Specialized independent study determined by the student's needs and interests. May be repeated when subjects vary. (S/U only.)

MUE 4999 DIRECTED STUDY: MUSIC EDUCATION
PR: Senior standing. To extend competency in teaching field. Offered only as a scheduled class.
MUE 4936 SENIOR SEMINAR IN MUSIC (2)

MUE 4940 INTERNSHIP: MUSIC EDUCATION (1-12)
One full semester of internship in a public or private school. Intern takes Senior Seminar in Education concurrently. In special programs where the internship experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours. (S/U only.)

MUE 4945 INTERNSHIP (1-4)
Part-time internship in an accredited public or private school. To be taken concurrently with departmental requirements and will include beginning of the year experiences when taken in Fall Semester. (S/U only.)

MUE 4946 INTERNSHIP (1-2)
PR: Admission to the College of Education and/or departmental approval. Internship in an accredited public or private school which will include the end of an academic year or program closing. (S/U only.)

GRADUATE COURSES

MUE 6080 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION (3)
PR: Acceptance into Music Education Graduate Program or CI. Investigation of historical, philosophical and psychological foundations of music education.

MUE 6116 ADVANCED ELEMENTARY SCHOOL MUSIC (3)
PR: Acceptance in the Music Education Graduate Program or CI. Study and appraisal of children's musical growth, curriculum plans, and teaching techniques essential for the sequential development of musical learnings.

MUE 6189 MUSIC SUPERVISION AND ADMINISTRATION (3)
The music curriculum in relation to the total school program; staff and budgetary needs.

MUE 6415 ADVANCED SECONDARY VOCAL MUSIC (3)
PR: Acceptance in the Music Education Graduate Program or CI. Course provides for graduate students in music education the opportunity to examine current research related to the teaching of secondary school vocal music, evaluate curricula, music materials, and teaching methods that will enable them to develop a vocal music program which emphasizes musical sensitivity.

MUE 6418 ADVANCED MATERIALS FOR INSTRUMENTAL MUSIC EDUCATION (3)
PR: Acceptance in the Music Education Graduate Program and CI. Course designed to examine published and unpublished materials, develop curricula and resources, including instructional music programs.

MUE 6495 INSTRUMENTAL CONDUCTING IN THE SECONDARY SCHOOLS (3)
PR: Acceptance in the Music Education Graduate program or CI. Course designed to develop skills of analysis and interpretation needed by school instrumental music teachers. Class activities include laboratory settings and performance practices.

MUE 6496 CHORAL CONDUCTING IN THE SECONDARY SCHOOLS (3)
PR: Acceptance in the Music Education Graduate program or CI. Course designed to develop essential conducting competencies required of a choral music director in the secondary schools.

MUE 7630 AESTHETICS IN MUSIC EDUCATION (3)
PR: Acceptance in the music education graduate program or CI. A course designed to investigate the nature of philosophical and psychological aesthetics as they relate to aesthetic and educational theories that influence programs in music education.

MUE 7641 FOUNDATIONS OF MUSICAL LEARNING AND TEACHING (3)
PR: Acceptance in the Music Education graduate program, a graduate level educational psychology course or its equivalent, or CI. A critical examination of current findings regarding the phenomena of the psychology of musical behaviors, major problems and plausible solutions. Investigation of musical acoustics, the measurement of musical abilities, and a comparative study of theories of learning related to musical learning.

THEATRE

Chairperson: N. Cole; Professor: P. B. O'Sullivan; Associate Professors: J. W. Belt, D. Calandra, N. Cole, W. A. Lorenzen, P. Massie; Assistant Professors: A. Lillethun, C. Steele, D. K. Williams; Lecturers: M. A. Bentley; Visiting Assistant Professor: M. Bishop; Visiting Lecturer: L. Kotler; Other: P. Finelli, G. Stephens, J. Winsor.

UNDERGRADUATE COURSES

THE 2020 THEATRE FUNDAMENTALS (2)
An introduction to the means and materials of theatre, the nature of theatre forms, the concepts of Total Theatre, and the basic issues in American theatre today. This course open to non-majors and theatre majors should take this course concurrently with their first registration in the group of courses TPA 2200, TPA 2223, TPP 2110. Required of all theatre majors.

THE 3080C MODERN THEATRE PRACTICE (4)
Initial readings and exercises in theatre; play analysis, performance, and technical theatre for non-theatre majors.

THE 3110 THEATRE HISTORY (3)
A survey of all facets of theatrical performance in selected periods of theatre history from the 5th Century B.C. to the present. Normally ten plays will be read. Required of all theatre majors. Open to non-majors.

THE 3925 PERFORMANCE (1)
The rehearsal, construction, production of major theatrical works. Concurrent registration in this course is expected of all students who are enrolled in courses carrying an ACPI (Advanced Course Production Involvement). Assignments are made contractually at the time of registration. Open to non-majors on a credit or non-credit basis. May be repeated.

THE 4180 THEATRE ORIGINS (4)
PR: Completion of first three years as a theatre major and one from the following: THE 4230, THE 4330, THE 4370, THE 4401, THE 4442, THE 4480; or CI. An analysis of the development of theatre out of myth, ritual, and liturgy. Emphasis placed on what attempts to understand the resulting phenomena can teach us about the nature of our art. Required of all theatre majors.

THE 4264 HISTORY OF COSTUME (3)
A survey of clothing and dress from Ancient Egypt to the 20th Century with an emphasis on cultural and social influences. (A requirement in the tech-design track/costume.) Open to upper level non-majors with CI.

THE 4266 ARCHITECTURE AND DECOR (3)
The survey of architectural and decorative motifs and decor and their stylistic concepts. (A requirement in the tech/design track/scenic.) Open to upper level non-majors with CI.

THE 4320 THE THEATRE OF MYTH AND RITUAL/ NORTHERN EUROPEAN (950-1600) AND ORIENTAL (400-1200) (3)
PR: THE 3110. An investigation into the interrelationship of myth, ritual, and theatre event. Enables the student to analyze these scripts in light of their present productivity and past cultural energy. Open to non-majors with CI.

THE 4330 SHAKESPEARE FOR THE THEATRE (3)
PR: THE 3110. Study of several of Shakespeare plays from the histrionic point of view. "No sort of study of a (Shakespeare) play can better the preparation of its performance if this is rightly done."—Harlye Granville-Barker. Open to non-majors with CI.

THE 4370 THE 19TH CENTURY THEATRE REVOLUTION (3)
PR: THE 3110. Survey of materials in the Continental, English, and American stage dating from 1870. Deals with the extraordinary playwrights and new theatre movements. Open to non-majors with CI.

THE 4401 O'NEILL AND AFTER (3)
PR: THE 3110. Survey of materials in the American Theatre from the writings of Eugene O'Neill to the present. Open to non-majors with CI.

THE 4442 THE COMEDY OF THE CLASSIC AND NEO-CLASSIC STAGE (3)
PR: THE 3110. A course in the function of the script for the active theatre artist, treating materials from the Ancient Greeks through the
Restoration and the theatre of Molieres, giving some attention to later reflections. Open to non-majors with CI.

**TPA 4821 TECHNICAL DISCIPLINES (3)**

PR: TPA 4020, TPA 4040, TPA 4060. A workshop for students in scenery, lighting, and costume design. Recommended by recommendation of instructor and review of portfolio. Consideration will be given to integrating the design for setting, costumes, and lights; under special circumstances credit may be given for actualized production design.

**TPA 4020 LIGHT DESIGN (4)**

PR: ART 3301C, TPA 3221, TPA 4211. The aesthetic and practical application of the elements of design in lighting for theatre presentation. A requirement in the tech/design track/lighting.

**TPA 4040 COSTUME DESIGN (4)**

PR: ART 3301C, TPA 4264 and TPA 2232. The aesthetic and practical application of the elements of design in costume for theatre presentation. A requirement in the tech/design track/costume.

**TPA 4060 SCENE DESIGN (4)**

PR: TPA 4211, TPA 4266, and ART 3301C. The aesthetic and practical application of the elements of design in scenery for theatre presentation. A requirement in the tech/design track/scenic.

**TPA 4081 SCENE PAINTING (2)**

PR: TPA 3086. A practical course in the painting of stage scenery—media and application.

**TPA 4211 STAGECRAFT AND DRAFTING (3)**

PR: TPA 3086. A practical course in drafting for the stage, scenic construction and application. A requirement in the tech/design/scenic and lighting.

**TPA 4230 COSTUME CONSTRUCTION (3)**

PR: TPA 3086, TPA 2232. A practical course in the drafting of workable patterns for constructing the actor. Materials, skills, and techniques for construction of costumes and costume accessories for stage will be treated. Included topics are millinery, footwear, jewelry, masks, armor, corsetry, both period and modern.

**TPA 4240 STAGE PROPERTIES: TECHNIQUES AND MATERIALS STUDIO (2)**

PR: TPA 3086. Demonstration and experience with comparatively newer materials used in construction of stage properties. Modeling of prototypes and basic casting techniques. Organization of shop. Open to non-majors.

**TPA 4281 PRACTICUM IN TECHNICAL SUPERVISION (2)**

PR: One of TPA 4211, or TPA 2232. A practical course in the technical operation and organization for the theatre technologist in costume and in scenery-lighting. Advanced problems in technology and organization.

**TPA 4402 THEATRE MANAGEMENT WORKSHOP (2)**

PR: Completion of the first two years of the theatre program. The study of management relations for the theatre, including all fields of management from box office to publicity.

**TPP 2110 VOICE-BODY-IMPROVISATION (2)**

Exploring the elements basic to acting skills—a participation course. Required of all theatre majors. Open to non-majors.

**TPP 3111 WORKSHOP FOR TEXT ANALYSIS (3)**

PR: Completion of the four required 2000 level theatre 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 TPP 2110 and CI.

**TPP 3121 IMPROVISATION I (3)**

PR: Completion of the four required 2000 level courses. An intensive study in Improvisation as an enhancement of the actor's skills. Exercises and theatre games as flexible forms which accommodate improvisation and physical invention are examined and used to develop group creativity. Open to non-majors with CI.

**TPP 3122 IMPROVISATION II (3)**

PR: TPP 3121; audition. A concentrated study of advanced techniques in improvisational skills as applied to the use of scenario. Depending on ensemble capabilities, the course will culminate in a classroom improvisational presentation. Open to non-majors with TPP 2110 and CI.

**TPP 3235 THEATRE FOR SPECIAL AUDIENCES (3)**

PR: Completion of the four required 2000 level courses in theatre arts. A laboratory course in various disciplines or systems in controlling and
understanding the body's motive powers, with focus on their use for the stage performer. Repeatable for credit. Required of all theatre majors with a performance concentration. Open to upper-level non-majors with CI. May be repeated for credit.

**TTP 3510 SPECIAL SKILLS IN MOVEMENT** (2)  
PR: TTP 3500. Stage combat, circus and acrobatic techniques, and other special techniques of movement. Repeatable for credit. Open to non-majors with CI.

**TTP 3790L VOICE PREPARATION FOR THE ACTOR** (2)  
PR: Completion of the four required 2000 level theatre courses. A laboratory in vocal production and corrective speech for the actor. Repeatable for credit. Required of all theatre majors with a performance concentration. Open to upper-level non-majors with CI. May be repeated for credit.

**TTP 4140 SCENE STUDY II** (4)  
PR: TTP 4130 and audition. 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.

**TTP 4150 SCENE STUDY I** (4)  
PR: TTP 3111 and audition. Basic scene study. Special problems in movement and speech to be integrated with character development, rehearsal techniques, and performance composition. Required of all theatre majors with a performance concentration.

**TTP 4152 SCENE STUDY III** (4)  
PR: TTP 4140 and audition. Advanced scene study. Required of all theatre majors with a performance concentration.

**TTP 4180 SCENE STUDY HONORS** (3)  
PR: TTP 4152; admittance by competitive audition. The aesthetics of acting. The various areas of the art. A studio course.

**TTP 4220 AUDITION WORKSHOP FOR THE ACTOR** (2)  
PR: TTP 4150 and TPP 4140 or CI. Preparation for professional audition; discussion of professional objectives.

**TTP 4230L LABORATORY WORKSHOP IN PERFORMANCE** (3)  
PR: TTP 3111 and/or CI. Special workshop in advanced techniques based upon individual problems and needs. May be repeated twice (to a total of 9 hours credit).

**TPP 4250 MUSIC THEATRE WORKSHOP** (3)  
PR: TPP 3111. Special problems in acting as applied to the musical theatre.

**TPP 4310, 4311 DIRECTING I, II** (3,3)  
PR: TPP 4150. An elective sequence in directing. A workshop course in which the student first encounters the basic tasks of the director by preparing and directing one or two scenes and then progresses to more complex scene work in a variety of styles and finally proceeds to the short play or theatre pieces.

**TPP 4610 WRITING FOR THE THEATRE** (3)  
PR: Completion of the first two years as a theatre major and CI. An elective in writing for the theatre, starting with explorations of theatre as a medium, exercise in theatre form and techniques and progressing to an advanced workshop in plays and other styles of theatre pieces. May be repeated for credit. Open to non-majors with CI.

**TPP 4920 SENIOR WORKSHOP FOR ACTORS** (3)  
PR: TPP 4152, TPP 3500, TPP 3790L. A workshop in advanced vocal and movement techniques. Required for all theatre majors with a performance concentration.

## COLLEGE OF MEDICINE

### ANATOMY

**Chairperson:** J. A. G. Rhodin; **Professor:** H. N. Schnitzlein; **Associate Professors:** H. K. Brown, L. T. Chen, J. A. Colombo, J. J. Dwornik, M. F. Nolan, C. P. Phelps; **Assistant Professors:** D. R. Hilbelink, S. Saporta, J. C. Lanning.

#### BMS 6100 GROSS ANATOMY  
PR: Admission to College of Medicine.

#### BMS 6110 MICROSCOPIC ANATOMY  
PR: Admission to College of Medicine.

#### BMS 6150 NEUROANATOMY  
PR: Admission to College of Medicine.

#### BMS 6160 ANATOMY SEMINAR  
PR: Consent of Chairman, Department of Anatomy.

#### BMS 7170 REGIONAL ANATOMY I—Head and Neck  
PR: Enrolled in College of Medicine.

#### BMS 7171 REGIONAL ANATOMY II—Thorax, Abdomen, Pelvis and Perineum  
PR: Enrolled in College of Medicine.

#### BMS 7172 REGIONAL ANATOMY III—Extremities  
PR: Enrolled in College of Medicine.

#### BMS 7174 MEDICAL DEVELOPMENT ANATOMY and Teratology  
PR: Enrolled in College of Medicine.

#### BMS 7175 ADVANCED NEUROANATOMY  
PR: Enrolled in College of Medicine.

#### BMS 7176 ADVANCED MICROSCOPIC ANATOMY  
PR: Enrolled in College of Medicine.

#### BMS 7177 APPLIED NEUROANATOMY  
PR: Enrolled in College of Medicine.

#### BMS 7178 CROSS SECTIONAL ANATOMY  
PR: Enrolled in College of Medicine.

#### GMS 6600 CORE COURSE IN HUMAN ANATOMY  
PR: Admission to Ph.D. Program in Medical Sciences.

#### GMS 6601 METHODS OF ELECTRON MICROSCOPY IN MEDICAL RESEARCH  
PR: GMS 6600, GMS 6608, or CC.

#### GMS 6602 NEURAL CORRELATES OF BEHAVIOR  
PR: GMS 6600, or CC.

#### GMS 6603 COMPARATIVE NEUROANATOMY  
PR: GMS 6600, or CC.

#### GMS 6604 HUMAN EMBRYOLOGY  
PR: GMS 6600, or CC.

#### GMS 6605 COMPARATIVE HEMATOLOGY  
PR: GMS 6600, or CC.

#### GMS 6606 ANATOMICAL ILLUSTRATIONS AND METHODS  
PR: GMS 6600, or CC.

#### GMS 6607 HISTORY OF ANATOMY  
PR: GMS 6600, or CC.

#### GMS 6608 ADVANCED MICROSCOPIC ANATOMY  
PR: GMS 6600, or CC.

#### GMS 6609 ADVANCED HUMAN GROSS ANATOMY  
PR: GMS 6600, or CC.

#### GMS 6610 ADVANCED NEUROANATOMY  
PR: Admission to GMS program and acceptance into the Anatomy department.

#### GMS 6611 INTRODUCTION TO ANATOMICAL RESEARCH  
PR: Admission to GMS program and acceptance into the Anatomy department.

#### GMS 6612 SUPERVISED TEACHING IN HUMAN ANATOMY  
PR: GMS 6608, 6609, or 6610 and acceptance into the Anatomy department.
BIOCHEMISTRY

Chairperson: J. G. Cory; Professor: J. G. Cory; Associate Professors: W. L. Adair, Jr., R. Kennedy Keller, G. C. Ness, L. P. Solomonson; Assistant Professors: D. C. Eichler, M. T. Williams

BMS 6200 BIOCHEMISTRY (var.) PR: Admission to College of Medicine.
BMS 6230 BIOCHEMISTRY SEMINAR (0) PR: CI.
BMS 7260 RESEARCH IN BIOCHEMISTRY (var.) PR: Enrolled in College of Medicine.
BMS 7262 MOLECULAR BASIS OF METABOLIC REGULATIONS (var.) PR: Admitted to College of Medicine.
GMS 6103 METABOLIC BASIS OF DISEASE (2) PR: GMS 6200 or CC.
GMS 6200C CORE COURSE IN MEDICAL BIOCHEMISTRY (5) PR: Admission to Ph.D. Program in Medical Sciences.
GMS 6141 BIOLOGICAL MEMBRANES-STRUCTURE AND FUNCTION (3) PR: GMS 6200 or CC.
GMS 6145 LIPID METABOLISM AND REGULATION (3) PR: GMS 6200 or CC.
GMS 6146 MACROMOLECULAR METABOLISM (3) PR: GMS 6200 or CC.

COMPREHENSIVE MEDICINE


MEL 8200 INTRODUCTION TO REHABILITATION MEDICINE (Var.) PR: Admission to the College of Medicine.
MEL 8201 INTRODUCTION TO ELECTROCARDIOGRAPHY (Var.) PR: Admission to the College of Medicine.
MEL 8205 COMMUNITY PUBLIC HEALTH AND PREVENTIVE MEDICINE (Var.) PR: Admission to the College of Medicine.
MEL 8207 LABORATORY RESEARCH IN TROPICAL MEDICINE (Var.) PR: Admission to the College of Medicine.

FAMILY MEDICINE


MEL 7255 OUT-PATIENT FAMILY MEDICINE (var.) PR: Enrolled in College of Medicine.
MEL 7256 IN-PATIENT FAMILY MEDICINE (var.) PR: Enrolled in College of Medicine.
MEL 7257 GERIATRIC MEDICINE (var.) PR: Enrolled in College of Medicine.
BCC 8171 FAMILY PRACTICE PRECEPTORSHIP (var.) PR: Enrolled in College of Medicine.

INTERDISCIPLINARY

MEL 7320 EXTRAMURAL CLERKSHIP (var.) PR: Enrolled in College of Medicine.
MEL 7102 PERINATOLOGY (var.) PR: Enrolled in College of Medicine.
MEL 7103 PEDIATRIC CARDIOLOGY AND PHYSIOLOGY (var.) PR: Enrolled in College of Medicine.
MEL 7104 DEPARTMENTAL OVERVIEWS (var.) PR: Enrolled in College of Medicine.

MEL 7106 CLINICAL LABORATORY IMMUNOLOGY (var.) PR: Enrolled in College of Medicine.
MEL 7107 IMMUNOLOGY OF PARASITIC INFECTIONS (var.) PR: Enrolled in College of Medicine.
MEL 7108 OBSTETRIC AND GYNECOLOGIC PATHOLOGY (var.) PR: Enrolled in College of Medicine.
MEL 7109 OUTPATIENT PSYCHIATRY AND PRIMARY CARE (var.) PR: Enrolled in College of Medicine.
BCC 8200 AMBULATORY ANATOMY (var.) PR: Enrolled in College of Medicine.
GMS 7418 DIRECTED RESEARCH (var.) PR: Gr. Ph.D. level. Repeatable (S/U only).
GMS 7930 SELECTED TOPICS (1-3) PR: Departmental Core Course or CC.
GMS 7939 GRADUATE SEMINAR (1) PR: Departmental Core Course or CC.

INTERNAL MEDICINE


BMS 6810 INTRODUCTION TO MEDICINE (Var.) PR: Admission to College of Medicine.
BMS 6830 PHYSICAL DIAGNOSIS (Var.) PR: Admission to College of Medicine.
BCC 6110 MEDICINE CLERKSHIP (Var.) PR: Admission to College of Medicine.
MEL 7303 ELECTRO-CARDIOGRAPHIC INTERPRETATION (Var.) PR: Enrolled in College of Medicine.
MEL 7321 CLINICAL DERMATOLOGY (Var.) PR: Enrolled in the College of Medicine.
MEL 7305 CLINICAL ENDOCRINOLOGY AND METABOLISM (Var.) PR: Enrolled in College of Medicine.
MEL 7306 GASTROENTEROLOGY ELECTIVE (Var.) PR: Enrolled in College of Medicine.
MEL 7310 INFECTIOUS DISEASE (Var.) PR: Enrolled in College of Medicine.
MEL 7313 CLINICAL NEPHROLOGY (Var.) PR: Enrolled in College of Medicine.
MEL 8308 HEMATOLOGY-ONCOLOGY (Var.) PR: Enrolled in College of Medicine.
BCC 8121 CLINICAL NEUROLOGY CLERKSHIP (Var.) PR: Enrolled in College of Medicine.
MEL 8676 NEUROLOGY OF IN AMBULATORY PATIENTS (Var.) PR: Enrolled in College of Medicine.
MEL 8334 ACTING MEDICINE INTERNSHIP (Var.) PR: Enrolled in College of Medicine.
MEL 8335 ELECTIVE IN AMBULATORY INTERNAL MEDICINE (Var.) PR: Enrolled in College of Medicine.
**MEDICAL MICROBIOLOGY AND IMMUNOLOGY**

*Chairperson:* H. Friedman; *Professors:* H. Friedman, D. G. Halkias; *Associate Professors:* R. J. Graiso, G. J. Lanzc, R. R. Nelson, L. J. Paradise; *Assistant Professors:* T. W. Klein, W. M. LeFor, S. Livnat, S. H. Pross, S. Specter.

**MEL 8315 ALLERGY AND CLINICAL IMMUNOLOGY**
PR: Admission to College of Medicine.

**MEL 8336 AMBULATORY CARE ELECTIVE-ENDOCRINOLOGY AND METABOLOISM**
PR: Admission to College of Medicine.

**MEL 8337 CLINICAL CARDIOLOGY I (WA)**
PR: Enrollment in College of Medicine.

**MEL 8339 CLINICAL RHEUMATOLOGY II (TGH)**
PR: Enrollment in College of Medicine.

**MEL 8340 PULMONARY DISEASE-VA HOSPITAL**
PR: Enrollment in College of Medicine.

**MEL 8341 PULMONARY DISEASE-TGH**
PR: Enrollment in College of Medicine.

**MEL 8342 GENERAL MEDICINE EXTERNSHIP: ORLANDO REGIONAL MEDICAL CENTER**
PR: Enrollment in College of Medicine.

**MEL 8343 CLINICAL CARDIOLOGY III-ORLANDO**
PR: Enrollment in College of Medicine.

**MEL 8344 MEDICAL ASPECTS OF NEUROLOGICAL DISEASE**
PR: Enrollment in College of Medicine.

**MEL 8345 MEDICAL ONCOLOGY**
PR: Enrollment in College of Medicine.

**OPHTHALMOLOGY**


**MEL 7501 MEDICAL OPHTHALMOLOGY**
PR: Admission to College of Medicine.

**MEL 7503 TUTORIAL COURSE OF ADVANCED OPHTHALMOLOGY**
PR: Admission to College of Medicine.

**MEL 7506 OCULAR INFLAMMATION**
PR: Admission to College of Medicine.

**MEL 7507 RETINAL ELECTIVE**
PR: Admission to College of Medicine.

**MEL 7508 NEUROOPHTHALMOLOGY**
PR: Admission to College of Medicine and MEL 7501 or MEL 5703.

**MEL 8520 OPHTHALMIC PATHOLOGY**
PR: Admission to College of Medicine and MEL 7501 or MEL 5703.

**PATHOLOGY**


**BMS 6600 MEDICAL PATHOLOGY**
PR: Enrollment in College of Medicine.

**BMS 6610 LABORATORY MEDICINE**
PR: Enrollment in College of Medicine.

**BMS 7611C ELECTIVE IN LABORATORY MEDICINE**
PR: Enrolled in College of Medicine.

**BMS 7661C EXPERIMENTAL PATHOLOGY**
PR: Enrolled in College of Medicine.

**BMS 7663C PATHOLOGIC ANATOMY**
PR: Enrolled in College of Medicine.

**BMS 7664C FLEXIBLE ELECTIVE IN PATHOLOGY**
PR: Enrolled in College of Medicine.

**GMS 6111 HUMAN SUSYTEMIC PATHOLOGY**
PR: GMS 6300 or CC.

**GMS 6112 BIOCHEMICAL PATHOLOGY**
PR: GMS 6300 or CC.

**GMS 6113 IMMUNOPATHOLOGY**
PR: GMS 6300 or CC.

**GMS 6147 CORE COURSE IN PATHOLOGY**
PR: Admission to Ph.D. Program in Medical Sciences.

**GMS 6301 ADVANCED GROSS PATHOLOGY**
PR: GMS 6300 or CC.

**GMS 6302 ADVANCED MICROSCOPIC PATHOLOGY**
PR: GMS 6300 or CC.

**GMS 6303 ELECTRON MICROSCOPY OF DISEASE STATES**
PR: GMS 6300 or CC.

Thomas W. McDonald, Barry S. VerKauf, Assistant Professors: Jose C. Scerbo; *Other Faculty:* Donald A. Marsden, P.K. Rattan.
PEDIATRICS


BCC 6142 PEDIATRICS CLERKSHIP
PR: Enrolled in College of Medicine.

MEL 7551 INPATIENT PEDIATRICS, TAMPA GENERAL HOSPITAL
PR: Enrolled in College of Medicine.

MEL 7560 PEDIATRIC CLINICAL CARDIOLOGY
PR: Enrolled in College of Medicine.

MEL 7563 PEDIATRIC NEPHROLOGY
PR: Enrolled in College of Medicine.

MEL 7565 NEONATOLOGY
PR: Enrolled in College of Medicine.

MEL 8591C RESEARCH IN PEDIATRIC MEDICINE AND GENETICS
PR: Enrolled in College of Medicine.

MEL 7596C DIABETES & METABOLIC DISEASE RESEARCH
PR: Enrolled in College of Medicine.

MEL 8555 ALL CHILDREN'S HOSPITAL
PR: Enrolled in College of Medicine.

MEL 8566 PEDIATRIC ENDOCRINOLOGY-CLINICAL
PR: Enrolled in College of Medicine.

MEL 8567 PEDIATRIC PRACTICE
PR: Enrolled in College of Medicine.

MEL 8568 PEDIATRIC HEMATOLOGY-ONCOLOGY
PR: Enrolled in College of Medicine.

MEL 8569 PEDIATRIC NEUROLOGY
PR: Enrolled in College of Medicine.

MEL 8570 GENETICS ELECTIVE
PR: Enrolled in College of Medicine.

MEL 8571 CHILD DEVELOPMENT AND BEHAVIOR
PR: Enrolled in College of Medicine.

MEL 8590 NEONATAL RESEARCH
PR: Enrolled in College of Medicine.

MEL 8598 PEDIATRIC ENDOCRINE RESEARCH
PR: Enrolled in College of Medicine.

PHARMACOLOGY


BMS 6400 PHARMACOLOGY
PR: Enrolled in College of Medicine.

BMS 6420 PHARMACOLOGY SEMINAR
PR: CC.

BMS 7371 CLINICAL PHARMACOLOGY
PR: Enrolled in College of Medicine.

BMS 7462 PULMONARY PHARMACOLOGY
PR: Enrolled in College of Medicine.

BMS 7463 DRUG METABOLISM AND PHARMACOCINETICS
PR: Enrolled in College of Medicine.

BMS 7464C RESEARCH IN PHARMACOLOGY
PR: Enrolled in College of Medicine.

BMS 7469 PSYCHOPHARMACOLOGY
PR: Enrolled in College of Medicine.

BMS 7470 CLINICAL PHARMACOLOGY OF CARDIOVASCULAR AGENTS
PR: Enrolled in College of Medicine.

BMS 7472 CLINICAL PHARMACOLOGY OF ANTIBIOTICS
PR: Enrolled in College of Medicine.

GMS 6469 AUTONOMIC PHARMACOLOGY
PR: GMS 6400, GMS 6200, GMS 6500 or CC.

GMS 6500C CORE COURSE IN PHARMACOLOGY
PR: GMS 6200, GMS 6400 or CC.

GMS 6501 THEORETICAL PHARMACOLOGY
PR: GMS 6500 or CC.

GMS 6502 CLINICAL PHARMACOLOGY
PR: GMS 6100-GMS 6400 or CC.

GMS 6503 PHARMACOLOGY LABORATORY
PR: GMS 6500 or CC.

GMS 6504 IMMUNOPHARMACOLOGY
PR: GMS 6100, GMS 6500 or CC.

GMS 6505 PHARMACOLOGY OF BACTERIAL PRODUCTS
PR: GMS 6100, GMS 6400, GMS 6500 and CC.

GMS 6506 THE PHARMACOLOGY OF BIOLOGICAL MEMBRANES
PR: GMS 6500 or CC.

GMS 6507 DRUG METABOLISM
PR: GMS 6500 or CC.

GMS 6508 DRUG ADDICTION, TOLERANCE AND PHYSICAL DEPENDENCE
PR: GMS 6200, GMS 6400 or CC.

GMS 6509 THE HISTORY OF PHARMACOLOGICAL INVESTIGATION
PR: GMS 6500 or CC.

GMS 6510 TOXICOLOGY
PR: GMS 6200, GMS 6400, GMS 6500 and CC.

PHYSIOLOGY


BMS 6500 MEDICAL PHYSIOLOGY
PR: Admission to College of Medicine or Enrolled in College of Medicine.

BMS 6530 PHYSIOLOGY SEMINAR
PR: Consent of Chairman, Department of Physiology.

BMS 7560 RESEARCH IN PHYSIOLOGY
PR: Enrolled in College of Medicine.

BMS 7561 CARdio-PULMONARY-RENAL PHYSIOLOGY
PR: Enrolled in College of Medicine.

BMS 7568C CONTROL OF PHYSIOLOGICAL SYSTEMS
PR: Enrolled in College of Medicine.

GMS 6400C CORE COURSE IN PHYSIOLOGY
PR: Admission to Ph.D. Program in Medical Sciences.

GMS 6401 KIDNEY, FLUIDS AND ELECTROLYTES
PR: GMS 6400 or CC.

GMS 6402 RESPIRATION
PR: GMS 6400 or CC.

GMS 6403 ENDOCRINE MECHANISMS
PR: GMS 6400 or CC.

GMS 6404 SYSTEMS NEUROPHYSIOLOGY
PR: GMS 6400 or CC.

GMS 6407 SMOOTH AND SKELETAL MUSCLE
PR: GMS 6400 or CC.

GMS 6409 PERIPHERAL CIRCULATION AND HEMODYNAMICS
PR: GMS 6400 or CC.

GMS 6410 CARDIOVASCULAR REGULATION
PR: GMS 6400 or CC.

GMS 6413 PHYSIOLOGICAL BASIS OF CARDIOLOGY
PR: GMS 6400 or CC.

PSYCHIATRY AND BEHAVIORAL MEDICINE

Chairperson: A. Reading; Associate Chairperson: R. Fernandez; Professors: E. Pfleiffer, A. Reading, A. Silver, T. Williams, F. Surawicz; Associate Professors: D. Anderson, M. Denker, R. Fernandez, G.
RADIOLOGY


MEL 7700 GENERAL RADIOLOGY
PR: Enrolled in College of Medicine.

COLLEGE OF NATURAL SCIENCES

ASTRONOMY

UNDERGRADUATE COURSES

AST 2005 ASTRONOMY OF THE SOLAR SYSTEM
PR: Admission to College of Medicine.
Introduction to the Astronomy of the Solar System. Course level assumes no Physics or Mathematics background. Only simple math will be used. Topics covered include properties of light, stellar coordinates, timekeeping, eclipses, formation and dynamics of the solar system, properties of the sun and planets, space exploration of planets and the moon, life on other worlds. This course is complementary to but independent of AST 2006. Either may be taken before the other or taken by itself.

AST 2006 STELLAR ASTRONOMY AND COSMOLOGY
PR: Admission to College of Medicine.
An introduction to Astrophysics and the structure of the universe. Course level assumes no Physics or Mathematics background. Only simple math will be used. Topics covered include properties of light, stellar coordinates, measurement of the physical properties of stars, formation, structure, and evolution of stars, normal and peculiar galaxies, cosmology. This course is complementary to but independent of AST 2005. Either may be taken before the other or taken by itself.

AST 2032C ILLUSTRATIVE ASTRONOMY
PR: Admission to College of Medicine.
Constellations, use of small telescopes, etc., apparent motions of celestial objects, comets and meteors, seasons and weather. Current events in the space program. Planetarium and open sky demonstrations. Lec.-lab.

AST 3033 CONTEMPORARY THINKING IN ASTRONOMY
PR: Junior or Senior Standing of Cl. Seminar designed to assist the layman, with no scientific background, in comprehending contemporary developments in Astronomy. Necessary background material is provided by the instructor and a text. No experience in astronomy, physics, or mathematics is necessary. Topics covered in recent years include the space program, pulsars, x-ray astronomy, black holes, extra-terrestrial life, interacting galaxies, cosmology.

AST 3043 HISTORY OF THE SCIENCE OF ASTRONOMY
PR: Junior or Senior Standing of Cl. Seminar designed to assist the layman, with no scientific background, in comprehending contemporary developments in Astronomy. Necessary background material is provided by the instructor and a text. No experience in astronomy, physics, or mathematics is necessary. Topics covered in recent years include the space program, pulsars, x-ray astronomy, black holes, extra-terrestrial life, interacting galaxies, cosmology.

COLLEGE OF NATURAL SCIENCES

SURGERY


BCC 6160 SURGERY CLERKSHIP
PR: Admission to College of Medicine.

MEL 7806 PLASTIC SURGERY ELECTIVE
PR: Enrolled in College of Medicine.

MEL 7807 THORACIC SURGERY ELECTIVE
PR: Enrolled in College of Medicine.

MEL 7812 NEUROSURGERY ELECTIVE
PR: Admission to College of Medicine.

MEL 7813 OTOLARYNGOLOGY ELECTIVE
PR: Enrolled in College of Medicine.

MEL 7816 OTOLARYNGOLOGY PRECEPTORSHIP
PR: Enrolled in College of Medicine.

MEL 7817 ORTHOPEDIC ELECTIVE-OUTPATIENT
PR: Admission to College of Medicine.

MEL 7821 SURGERY OF THE HAND ELECTIVE
PR: Admission to College of Medicine.

MEL 7822 CLINICAL UROLOGY ELECTIVE
PR: Enrolled in College of Medicine.

MEL 7823 ORTHOPEDIC ELECTIVE
PR: Admission to College of Medicine.

MEL 7824 ORTHOPEDIC ELECTIVE-OUTPATIENT
PR: Enrolled in College of Medicine.
GRADUATE COURSES

AST 5506 INTRODUCTION TO CELESTIAL MECHANICS (3)
PR: MAC 3413 and some knowledge of differential equations, or CI.
The two body problem, introduction to Hamiltonian systems and canonical variables, equilibrium solutions and stability, elements of perturbation theory.

AST 5932 SELECTED TOPICS IN ASTRONOMY (1-5)
PR: Senior or advanced junior standing or CI. Intensive coverage of special topics to suit needs of advanced students.

BIOLOGY


UNDERGRADUATE COURSES

APB 2103 PLANTS & HUMAN AFFAIRS (3)

APB 2130 ENVIRONMENT (3)
PR: BSC 2933. The application of basic principles of ecology to relevant problems and topics relating to man's environmental interaction through consideration of scientific and popular literature. For non-majors.

APB 2140 FOODS AND DRUGS (3)
PR: BSC 2933. The application of basic biological principles to relevant problems and topics in nutrition and drugs through the consideration of scientific and popular literature. For non-majors.

APB 2250 SEX, REPRODUCTION AND POPULATION (3)
PR: BSC 2933. The application of basic biological principles from subject areas to relevant problems and topics through the consideration of scientific and popular literature. For non-majors.

APB 3110 MAN, MICROBE AND MOLECULE (3)
PR: BSC 2933 or CI. Origin of life, control of disease, environmental quality and the use of microorganisms as tools in searching for molecular explanations of living phenomena. For non-majors.

BOT 2010C FUNDAMENTALS OF BOTANY (4)
PR: BSC 2010C. Cell division, genetics, reproduction and development, physiology. Lec.-lab.

BOT 4663 INTRODUCTION TO TROPICAL BOTANY (4)
PR: PREL. BSC 2933 or CI. The tropical environment and its effect on plant and animal communities. Plant and animal interactions and man's impact on the environment.

BSC 2010C FUNDAMENTALS OF BIOLOGY (4)
A brief review of living organisms, respiration, photosynthesis, cell structure, and specialization. Lec.-lab.

BSC 2932 SELECTED TOPICS IN BIOLOGY (1-4)
PR: CI. May be repeated.

BSC 2933 TOPICS IN HUMAN BIOLOGY (3)
Lectures, individual reading, movies, classroom discussions, and evaluation of selected biological topics, reflecting biological principles. For non-majors.

BSC 3263 INTRODUCTORY MARINE BIOLOGY (3)
PR: 1 year major's Biology or CI. An introduction to the marine environment, the types of organisms found inhabiting a variety of marine habitats, and the adaptations of the organisms to those habitats. Emphasis is placed on shallow water Florida environments. Majors and non-majors.

BSC 4905 INDEPENDENT STUDY (1-3)
PR: CI. Specialized independent study determined by the student's needs and interests. The written contract required by the College of Natural Sciences specifies the regulations governing independent study. May be repeated. (S/U only.)

BSC 4910 UNDERGRADUATE RESEARCH (1-4)
PR: CI. Individual investigation with faculty supervision. (S/U only.)

BSC 4930 SEMINAR IN BIOLOGY (1)
PR: CI. Senior or advanced junior standing. May be repeated once. (S/U only.)

BSC 4933 SELECTED TOPICS IN BIOLOGY (1-3)
PR: CI.

PCB 3063 GENERAL GENETICS (3)
PR: 1 year major's Biology. Introduction to genetics including the fundamental concepts of Mendelian, molecular and population genetics. Lec.-dis.

PCB 3113C HISTOLOGICAL TECHNIQUES (4)
PR: 1 year major's Biology. Theory and practice of tissue fixation, embedding, sectioning, and staining; chromosomal squash preparations; nuclear isolation techniques; photomicrography. Lec.-lab.

PCB 4023C CELL BIOLOGY (4)
PR: CHM 3211, CHM 3211L and PCB 3063. A discussion of the concept and significance of the cell to biology; biological molecules and metabolic processes within the cell; cellular energy conversion systems; and control of cellular metabolism. Lec.-lab.

PCB 4043C PRINCIPLES OF ECOLOGY (3)
PR: 1 year major's Biology. An introduction to the basic principles and concepts of ecology at the ecosystem, community, and population level of organization. Lec.-dis.

PCB 4810C EXPERIMENTAL GENETICS (2)
CR: PCB 3063 or CI. Experimental analysis of genetic systems, Lec.-lab.

PCB 4874 ORGANIC EVOLUTION (3)
PR: PCB 3063 or CI. An introduction to modern evolutionary theory. Lecture on population genetics, adaptations, speciation theory, phylogeny, human evolution and related areas.

PCO 2010C FUNDAMENTALS OF ZOOLOGY (4)

GRADUATE COURSES

BSC 5931 SELECTED TOPICS IN BIOLOGY (1-3)
PR: CI. Each topic is a course in directed study under supervision of a faculty member.

BSC 6007 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

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

BSC 6912 GRADUATE RESEARCH METHODS (1-4)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 4 credits per student. (S/U only.)

BSC 6932 SELECTED TOPICS IN BIOLOGY (1-4)
PR: CI.

BSC 6935 GRADUATE SEMINAR IN BIOLOGY (1)
PR: CI. (S/U only.)

BSC 6945 GRADUATE INSTRUCTION METHODS (1-3)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 4 credits per student. (S/U only.)

BSC 7912 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

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

PCB 5115C CYTOGENETICS (3)
PR: PCB 4023C. Survey of the structure and function of cytoplasmic and nuclear components of plant and animal cells. Lec.-lab.

PCB 5250C PRINCIPLES OF IMMUNOLOGY (3)
PR: PCB 4023C or CI. Course will emphasize the biological principles involved in the vertebrate immune response. It will present the homeostatic, defense, and detrimental aspects of the immune system in terms of basic cellular and molecular mechanisms. Techniques will be described to familiarize the student with the types of immunological tools available to the cellular and molecular biologist.

PCB 5525C MOLECULAR GENETICS (3)
PR: PCB 3063. Detailed examination of DNA, RNA and protein synthesis; the effects of mutations on proteins, cellular control; selected aspects of viral, bacterial, and fungal genetics.
**BOTANY**

**UNDERGRADUATE COURSES**

**BOT 3143C FIELD BOTANY**
PR: BOT 2010C or CI. Identification and classification of native and naturalized flowering plants of Florida including historical, climatic and floristic aspects of plant communities. Conducted largely in the field. Lec.-lab. (3)

**BOT 3823C HORTICULTURAL BOTANY**
PR: Course in botany, biology or CI. Application of principles of botany to give an understanding of basic horticultural operations; seed sowing, dormancy; growth requirements, vegetative propagation, pruning, and related problems. Lec.-lab. (2)

**BOT 4223C PLANT ANATOMY**
PR: BOT 2010C. Comparative studies of tissue and organ systems of fossil and present-day vascular plants. Functional and phylogenetic aspects stressed. Lec.-lab. (3)

**BOT 4434C MYCOLOGY**
PR: BOT 2010C or CI. A survey of the fungi with emphasis on their taxonomy, morphology, physiology and economic importance. Lec.-lab. (3)

**BOT 4503 PLANT PHYSIOLOGY**
PR: PCB 4023C. Fundamental activities of plants; absorption, translocation, transpiration, metabolism, growth, and related phenomena. Lec.-lab. (4)

**BOT 4713C PLANT TAXONOMY**
PR: BSC 2010C. Identification and classification of the more interesting vascular plants of Florida; angiosperm evolution; principles of taxonomy. Conducted largely in the field. Lec.-lab. (4)

**BOT 4933 SEMINAR IN BOTANY**
PR: Senior or advanced junior standing and CI. May be repeated once. (S/U only.) (1)

**GRADUATE COURSES**

**BOT 5515 MARINE BOTANY**
PR: BOT 2010C, PCB 4043C or CI. A field course in marine plants with emphasis on ecology and functional morphology. Field work will stress the ecological aspects of plants in a subtropical marine environment in Florida. Lec.-lab. (3)

**BOT 5406C* PHYCOLOGY**
PR: BOT 2010C or CI. A detailed survey of the algae emphasizing both taxonomy and morphology of fresh and marine water forms; field and laboratory investigations, including individual projects. Lec.-lab. (3)

**BOT 5605C* PLANT ECOLOGY**
PR: BOT 2010C, PCB 4043C or CI. Distribution and nature of vegetation in relation to climatic, physiographic, edaphic, and biotic factors; field investigations of subtropical Florida plant communities. Lec.-lab. (3)

**BOT 5725C EVOLUTION OF FLOWERING PLANTS**
PR: BOT 4713C or CI. A phylegetic study of Angiosperms; relationship of the principal orders and families, problems of nomenclature, identification of specimens, comparisons of recent systems of classification, dissension of representative flower types. Field trips and lab work. Lec.-lab. (3)

**BOT 5938 SELECTED TOPICS IN BOTANY**
PR: CI. Each topic is a course in directed study under supervision of a faculty member. (1-3)

**BOT 6516 PLANT BIOCHEMISTRY**
PR: BOT 4503 or CI. A study of plant metabolism with emphasis on the biosynthetic pathways and their regulation. (2)

**BOT 6516L LABORATORY IN PLANT BIOCHEMISTRY**
PR: BOT 4503 or CI. An intensive exposure to the methods used in experimenting with plant material. (3)

**BOT 6716C BIOCHEMICAL SYSTEMATICS**
PR: BOT 3713C or equivalent. Application of cytology, ecology, genetics, biochemistry, and morphological analysis to the study of evolution and classification of species of higher plants. Lec.-lab. (4)

**BOT 6916 INDEPENDENT STUDY**
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.) (var.)

**BOT 6971 THESIS: MASTER’S**
Repeatable. (S/U only.) (var.)

*Students will be required to pay travel expenses for field trips.

**MICROBIOLOGY**

**UNDERGRADUATE COURSES**

**APB 4803C APPLIED AND ENVIRONMENTAL MICROBIOLOGY**
PR: MCB 3010C. A study of the applications of microbiology to industry, agriculture, medicine, and sanitary engineering. Lec.-lab. (5)

**MCB 3010C INTRODUCTION TO MICROBIOLOGY**
PR: BSC 2010C and 1 year College Chemistry. Organic chemistry and a course in genetics is recommended. Introduction to the biology of microorganisms: structure, physiology, and ecology of bacteria, algae, viruses, protozoa and lower fungi. The laboratory involves preparation of culture media, staining, pure culture methodology, isolation of microbes from nature, enumeration techniques, resistance to infectious disease. Lec.-lab. (4)

**MCB 4115 DETERMINATIVE BACTERIOLOGY**
PR: MCB 3010C. Survey of bacterial classification; detailed examinations of bacteria important to man in agriculture, in industry and as pathogens. Lec.-lab. (5)

**MCB 4404 MICROBIAL PHYSIOLOGY**
PR: MCB 3010C, PCB 4023C or CI. A study of physiological and metabolic phenomena pertinent to the growth, development, regulation, inhibition and death of microorganisms and to the chemical alterations they catalyze. Lec.-lab. (4)

**MCB 4505 VIROLOGY**
PR: MCB 3010C. The biology of viruses associated with plants, animals, and bacteria will be considered; the nature of viruses, mechanisms of viral pathogenesis, and interactions with host cells. (3)

**MCB 4934 SEMINAR IN MICROBIOLOGY**
PR: Senior or advanced junior standing and CI. May be repeated. (S/U only.) (1)

**GRADUATE COURSES**

**APB 5575C MEDICAL MYCOLOGY**
PR: MCB 3010C or CI. A survey of the yeasts, molds, and actinomycetes most likely to be encountered by the bacteriologists, with special emphasis on the forms pathogenic for man. (4)

**MCB 5206 PUBLIC HEALTH AND PATHOGENIC MICROBIOLOGY**
PR: MCB 3010C. A comprehensive survey of pathogenic microbes (3)
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responsible for disease in man and other animals and the impact of these infectious agents on the public health. These pathogens will be studied, particularly their epidemiology, cultivation, mechanisms of pathogenicity, laboratory diagnosis, and epidemiology.

ZOO 5605 MICROBIAL ECOLOGY (4)
PR: MCB 3010C. CI. A study of the theory and methodology of the quantification of microbial processes in natural habitats with special emphasis on aquatic and terrestrial systems. Lec.-lab.

ZOO 5536 SELECTED TOPICS IN MICROBIOLOGY (1-3)
PR: CI. Each topic is a course in directed study under supervision of a faculty member.

ZOO 4505 ANIMAL SOCIAL BEHAVIOR (4)
PR: CI. An introduction to comparative animal behavior (ethology), with emphasis on communication, social use of space, and behavioral evolution. (Lec.-lab.)

ZOO 4583C PRIMATE SOCIAL BEHAVIOR (3)
PR: ZOO 4503C. An introduction to primate social behavior and behavioral ecology.

ZOO 4893 WILDLIFE AND FISH MANAGEMENT (2)
PR: ZOO 2010C and PCB 4043C. An introduction to the principles of wildlife and fisheries management. Certain methods and techniques utilized in the management of exploited animal species will be introduced. Designed primarily for students interested in the wildlife and fish management profession.

GRADUATE COURSES

ENY 5501 AQUATIC ENTOmOLOGY (3)
PR: ENY 4604. Taxonomy, development, and ecology of aquatic invertebrates with emphasis on local forms. Lec.-lab.

PCB 5306C LIMNOLOGY (4)
PR: CI. An introduction to the physical, chemical, and biological nature of fresh-water environments. Lec.-lab.

PCB 5325C TERRESTRIAL ANIMAL ECOLOGY (3)
PR: PCB 4043C. Field and laboratory investigations of the basic principles of ecology as applied to terrestrial animals. Lec.-lab.

PCB 5725C. COMPARATIVE PHYSIOLOGY (4)
PR: PCB 4023C. The evolution of physiological mechanisms. Lec.-lab.

PCB 6376C PHYSIOLOGICAL ECOLOGY (4)
PR: CI. Effect of environmental factors on animal function at the cellular and organ system level with emphasis on control and energy metabolism.

PCB 6756 COMPARATIVE PHYSIOLOGY (4)
PR: PCB 4023C and PCB 3063. Some knowledge of animal phylogeny will be assumed. A presentation of various metabolic pathways found in invertebrate animals including specializations related to parasitism and facultative anaerobiosis.

PCB 6816 COMPARATIVE ENDOCRINOLOGY (3)
PR: PCB 5725C or CI. An analysis of the similarities and differences between the hormonal mechanisms of mammals, other vertebrates, and invertebrates. Lecture only.

ZOO 5225C PARASITOLOGY (4)
PR: ZOO 2010C. Fundamentals of animal parasitology and parasitism, the biology of selected animal parasites, including those of major importance to man. Lec.-lab.

ZOO 5425 HERPETOLOGY (4)
PR: ZOO 3113C or CI. Major aspects of amphibian and reptilian biology emphasizing fossil history, evolutionary morphology, sensory physiology, life history and reproductive behavior. Lec.-lab. Field trip.

ZOO 5485C ICTHYOTOLOGY (4)
PR: ZOO 3713C or CI. Systematics of fishes, including major classification, comparative anatomy, embryology, and general biology. Specializations offered under Marine Science.

ZOO 5475C ORNITHOLOGY (4)

ZOO 5485C MAMMALOLOGY (4)
PR: ZOO 3713C or CI. The biology of mammals, including systematic biology, natural history, and geographical distribution.

ZOO 5555C MARINE ANIMAL ECOLOGY (4)
PR: PCB 4043C and ZOO 3203C. Investigation of energy flow, biogeochemical cycles, and community structure in marine environments. Lec.-lab.

ZOO 5815C BIOGEOGRAPHY (3)
PR: One year major’s Biology. Principles and general patterns of terrestrial and marine animal and plant distributions.

ZOO 6756C SELECTED TOPICS IN ZOOLOGICAL ANIMAL SPECIES (1-3)
PR: CI. Each topic is a program in directed study under supervision of a faculty member.

ZOO 6506C ADVANCED ANIMAL BEHAVIOR (3)
PR: ZOO 4503C and CI. Recent advances in comparative animal behavior (ethology). Lec.-lab.

ZOO 6615C EXPERIMENTAL EMBRYOLOGY (3)
PR: PCB 4253C and CI. Specializations in animal species, laboratories, readings and discussions relating to contemporary advances in the area of biochemistry of development. Experimental techniques will be studied. Lec.-lab.

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

ZOO 6975 THESIS: MASTER’S
(var.) Repeatable. (S/U only.)
CHEMISTRY


UNDERGRADUATE COURSES

BCH 3033 INTRODUCTORY BIOCHEMISTRY
PR: CHM 3200 or CHM 3211. Introduction to the chemistry and intermediary metabolism of biologically important substances. Lec. 3

BCH 3033L BASIC BIOCHEMISTRY LABORATORY
PR: BCH 3033. Practical work in determination and characterization of important biomolecules. Lec.-lab. 2

CHM 1015 FOUNDATIONS OF UNIVERSITY CHEMISTRY
A survey of modern chemistry designed particularly for those with a poor preparation in algebra and/or chemistry as a preliminary to CHM 2045. Lec. 3

CHM 2030 INTRODUCTION TO GENERAL, ORGANIC AND BIOCHEMISTRY I
PR: Placement exam* or CHM 1015. First half of a two-semester sequence. Fundamental concepts of general, organic, and biological chemistry. No credit for science majors. Lec. 3

CHM 2031 INTRODUCTION TO GENERAL, ORGANIC AND BIOCHEMISTRY II
PR: CHM 2030. Second half of general, biological, and organic chemistry. No credit for science majors. Lec. 3

CHM 2045 GENERAL CHEMISTRY I
CHM 2045 students are expected to have performed well in the placement exam* or to have satisfactorily completed CHM 1015. Fundamentals of chemistry; mass and energy relationships in chemical changes, equilibrium, chemical kinetics, atomic and molecular structure, descriptive chemistry of selected elements. Lec.-dis. 4

CHM 2045L GENERAL CHEMISTRY I LABORATORY
CR: CHM 2045. Laboratory portion of General Chemistry I. Introduction to laboratory techniques; study of properties of elements and compounds; synthesis and analysis of natural and commercial materials. 4

CHM 2046L GENERAL CHEMISTRY II LABORATORY
PR: CHM 2045L. Laboratory portion of General Chemistry II. Continuation of chemistry laboratory. 4

CHM 2055C GENERAL AND ANALYTICAL CHEMISTRY I
PR: Placement test and CI. Fundamentals of general chemistry excluding most of solution chemistry. Equivalent to CHM 2045 and parts of CHM 2046. Lec.-lab. 5

CHM 2056C GENERAL AND ANALYTICAL CHEMISTRY II
PR: CHM 2055C with "C" or better. Solution chemistry and fundamentals of elementary analytical chemistry. With CHM 2056C equivalent to CHM 2045, 2045L, 2046, 2046L, and 3120C. 5

CHM 2932 SELECTED TOPICS
PR: CI.

CHM 3020 CURRENT ISSUES IN CHEMISTRY
A survey of the important current issues in which chemistry affects our lives; e.g., environment, drugs, cancer, warfare, etc. No credit for chemistry majors. 3

CHM 3120C ELEMENTARY ANALYTICAL CHEMISTRY
PR: CHM 2046, CHM 2046L, or CHM 2055C. Fundamentals of gravimetric, volumetric, spectrophotometric analysis. Lec.-lab. 4

CHM 3200 ORGANIC CHEMISTRY
PR: CHM 2046 or equivalent. Fundamental organic chemistry principles. Structure, nomenclature, properties, preparation, reactions of hydrocarbons, alkyl halides, alcohols, phenols, ethers, sulfur analogs and other compounds. A one-semester course. 4

CHM 3210 ORGANIC CHEMISTRY I
PR: CHM 2046, CHM 2046L, CHM 2056C. Fundamental principles of organic chemistry. Lecture. 3

CHM 3211 ORGANIC CHEMISTRY LABORATORY I
CR: CHM 2041. Laboratory portion of Organic Chemistry I. Introduction of organic laboratory principles and techniques. 3

CHM 3211L ORGANIC CHEMISTRY II
PR: CHM 3210 or equivalent. Continuation of organic chemistry. Lecture. 3

CHM 3211L ORGANIC CHEMISTRY LABORATORY II
PR: CHM 3210L, CR: 3211. Continuation of organic chemistry laboratory. 3

CHM 3400 ELEMENTARY PHYSICAL CHEMISTRY I
PR: CHM 2046, CHM 2046L, or CHM 2056C, MAC 2044, MAC 2243, PHY 2051, PHY 2052, PHY 2051L. Introduction to thermodynamics. Properties of solutions with emphasis on biological applications. 3

CHM 3401 ELEMENTARY PHYSICAL CHEMISTRY II
PR: CHM 3400. Reaction kinetics, enzyme kinetics, macromolecular systems, radiochemistry, molecular spectroscopy, and chemical bonding. 3

CHM 3402C ELEMENTARY PHYSICAL CHEMISTRY LABORATORY
CR: CHM 3400 and/or CHM 3401. A physical chemistry laboratory with emphasis on modern techniques and instruments. Lab. 3

CHM 3610C INTERMEDIATE INORGANIC CHEMISTRY
PR: CHM 2046, CHM 2046L, or CHM 2056C. Fundamental principles of inorganic chemistry. Lec.-lab. 4

CHM 4060 USE OF THE CHEMICAL LITERATURE
Discussions and assignments using abstracts, bibliographies, indices, encyclopedia, journals, patent files, and other information sources to obtain chemical and technical material and including written and oral presentations. Career information and opportunities also discussed. 1

CHM 4070 HISTORICAL PERSPECTIVES IN CHEMISTRY
PR: CHM 2046; or senior standing, and CI. A study in depth of the historical and philosophical aspects of outstanding chemical discoveries and theories. Lec. 3

CHM 4130C METHODS OF CHEMICAL INVESTIGATION I
PR: CHM 3120C, CHM 3211, CHM 3211L, CHM 4060, CHM 4410. Theory and applications of instrumental methods in chemical research, chemical synthesis and analysis; electrochemical and calorimetric techniques, separation methods, spectroscopy, statistical analysis of data, computer data handling, and individual projects. 4

CHM 4131C METHODS OF CHEMICAL INVESTIGATION II
PR: CHM 4130C. Continuation of CHM 4130C. 4

CHM 4300 BASIC BIO-ORGANIC CHEMISTRY
PR: CHM 3211. Nature, structure, elucidation, synthesis and (in selected cases) organic chemical mechanisms of biochemical involvement of the major classes of organic compounds found in living systems. Lec. 3

CHM 4410 PHYSICAL CHEMISTRY I
PR: CHM 3120C and MAC 3282 or MAC 3412, and PHY 2052 or PHY 3042. Thermodynamics, the states of matter, solutions. Lec. 3

CHM 4411 PHYSICAL CHEMISTRY II
PR: CHM 4410. Introduction to quantum mechanics and molecular spectroscopy. Lec. 3

CHM 4412 PHYSICAL CHEMISTRY III
PR: CHM 4410. Electrochemistry, kinetic theory of gases, chemical kinetics, surface and nuclear chemistry. Lec. 3

CHM 4610 ADVANCED INORGANIC CHEMISTRY
PR: CHM 4410 or CI. An advanced theoretical treatment of inorganic compounds. Lec. 3

CHM 4905 INDEPENDENT STUDY
PR: CI. Specialized independent study determined by the student's
needs and interests. The written contract required by the College of Natural Sciences specifies the regulations governing independent study. May be repeated. (S/U only.)

CHM 4932 SELECTED TOPICS IN CHEMISTRY (1-3)
PR: CI. The course content will depend on the interest of faculty members and students concurrently. Lec.-lab.

CHM 4970 UNDERGRADUATE RESEARCH (1-3)
PR: CI. (S/U only.)

CHS 4100C RADIOCHEMISTRY (3)
PR: CHM 3120. Theory and applications of natural and induced radioactivity. Emphasis on the production, properties, measurement, and uses of radioactive tracers. Lec.-lab.

CHS 4201C CHEMISTRY PRACTICE (3)
PR: CHM 3211 or CI. The general composition and properties of products in the petroleum, rubber, plastics, fiber, and detergent industries will be examined. Quality requirements imposed by product end use and new product development will be emphasized. (Sem. I)

CHS 4300 FUNDAMENTALS OF CLINICAL CHEMISTRY (3)
PR: BCH 3033. Theoretical and practical aspects of the analysis of various body fluids, with emphasis on the medical significance. Clinical chemistry majors must take CHS 4301L concurrently. Lec.

CHS 4301L CLINICAL LABORATORY (2)
PR: CHM 3033 and CI, CHM 3120C. Laboratory experience in some of the most important clinical determinations. CH 4300 must be taken concurrently. Lec.-lab.

CHS 4302 ADVANCED CHEMISTRY PRACTICE (2-8)
PR: CI. Laboratory practice in advanced chemistry laboratories in the Tampa Bay area. (S/U only.)

CHS 4310C INSTRUMENTAL ANALYSIS (5)
PR: CHM 4412 or CI. Theory and practice of instrumental methods of chemical analysis. Lec.-lab.

GRADUATE COURSES

BCH 5065 BIOCHEMISTRY CORE COURSE (3)
PR: Either CHM 3211, CHM 3211L, and CHM 3400 or CHM 4410 or graduate standing. A one-semester survey course in biochemistry for graduate students in chemistry, biology, and other appropriate fields and for particularly well-qualified undergraduates, Lec.

BCH 6066 GENERAL BIOCHEMISTRY I (4)
PR: BCH 5065 or CI. First semester of a two-semester general biochemistry course for chemistry and biology graduate students whose primary interests are in this field. Lec.

BCH 6067 GENERAL BIOCHEMISTRY II (4)

BCH 6506 ADVANCED BIOCHEMISTRY I. ENZYMES (3)
PR: BCH 6067 or CI. A study of biochemical systems with emphasis on enzymes. Lec.

BCH 6706 ADVANCED BIOCHEMISTRY II. BIOORGANIC MECHANISMS (3)
PR: BCH 6067 or CI. A study of biochemical systems with emphasis on mechanisms of biological reaction. Lec.

BCH 6746 ADVANCED BIOCHEMISTRY III. BIOPHYSICAL CHEMISTRY (3)
PR: BCH 6067 or CI. A study of biochemical systems with emphasis on physical methods of experimentation and interpretation. Lec.

CHM 5225 INTERMEDIATE ORGANIC CHEMISTRY (3)
PR: CHM 3211, CHM 3211L or equivalent. This course will extend organic chemistry beyond the undergraduate level and will emphasize concepts of stereochemistry and reaction mechanisms.

CHM 5425 APPLICATIONS IN PHYSICAL CHEMISTRY (3)
PR: CHM 4412. Applications of chemical theory to chemical systems.

CHM 5430 CHEMICAL THERMODYNAMICS (3)
PR: CHM 4412 or CI. The applications of thermodynamic theory to the study of chemical systems with emphasis on the energetics of reactions and chemical equilibria. Lec.

CHM 5621 PRINCIPLES OF INORGANIC CHEMISTRY (3)
PR: CHM 4411 or CI. Chemical forces, reactivity, periodicity, and literature in inorganic chemistry in advanced core course. Lec.

CHM 5931 SELECTED TOPICS IN CHEMISTRY (1-3)
PR: CI. The following courses are representative of those that are taught under this title: Natural Products, Stereochemistry, Reactive Intermediates, Photochemistry, Instrumental Electronics, Advanced Lab Techniques, Heterocyclic Chemistry, etc.

CHM 6150 ADVANCED ANALYTICAL CHEMISTRY (3)
PR: CI. A study of complete analytical process, including sample handling, separations, the analysis step, and statistical interpretation of data. Emphasis placed on separations and statistics. Lec.

CHM 6153 ELECTROCHEMISTRY (3)

CHY 6250 ADVANCED ORGANIC CHEMISTRY I. SYNTHESIS (3)

CHM 6260 ADVANCED ORGANIC CHEMISTRY II. PHYSICAL-ORGANIC (3)

CHM 6280 ADVANCED ORGANIC CHEMISTRY III. NATURAL PRODUCTS (3)
PR: CHM 5225 or CI. A study of any of several of the following topics; terpenes, steroids, vitamins, alkaloids, prophenins, purine, and antibiotics.

CHM 6440 CHEMICAL KINETICS (3)
PR: CI. Theory and methods for the study of reaction rates and the elucidation of reaction mechanisms. Lec.

CHM 6460 STATISTICAL THERMODYNAMICS (3)
PR: CI. Application of statistical mechanics to thermodynamics, the relation of molecular structure to thermodynamic properties. Lec.

CHM 6480 QUANTUM CHEMISTRY (3)
PR: CI. Introduction to elementary quantum mechanism. Atomic structure and spectra. Lec.

CHM 6625 CHEMISTRY OF THE LESS FAMILIAR ELEMENTS (3)
PR: CI. An integrated treatment of the conceptual and factual aspects of the traditionally less familiar elements, including noblegas elements, unfamiliar transition metals, alkali and alkaline-earth metals and the transition elements. Lec.

CHM 6650 STRUCTURAL INORGANIC CHEMISTRY (3)
PR: CHM 5621 or CI. Modern theories of bonding and structure of inorganic compounds, including coordination theory, stereochemistry, solution equilibria, kinetics, mechanisms of reactions, and use of physical and chemical methods. Lec.

CHM 6901 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

CHM 6935 GRADUATE SEMINARS IN CHEMISTRY (1)
PR: Admission to graduate program in chemistry. Required every semester (when offered) for all students enrolled in chemistry graduate program. Requires participation in an attendance at the weekly departmental seminar. Must be repeated. (S/U only.)

CHM 6936 CHEMISTRY COLLOQUIUM (1)
PR: Admission to graduate program in chemistry. Frequent (usually weekly) small-group analysis of current developments. May be repeated up to a cumulative total of 10 hours. (S/U only.)

CHM 6938 SELECTED TOPICS IN CHEMISTRY (1-3)
PR: CI. The following titles are representative of those that are taught under this title: Symmetry and Group Theory, Photochemical Kinetics, Quantum Mechanical Calculations, Advanced Chemical Thermodynamics. Reaction Mechanisms, Advanced Instrumentation, Separations and Characterizations, Spectroscopy, etc.

CHM 6946 GRADUATE INSTRUCTION METHODS (1-4)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

CHM 6947 GRADUATE RESEARCH METHODS (1-4)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

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

CHM 6974 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

CHM 7820 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

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


UNDERGRADUATE COURSES

GLY 2016 PHYSICAL GEOLOGY
Study of minerals, rocks, and processes of the earth's crust. Introduction to origin and classification of earth's materials and landforms. Lec.-lab.

GLY 2100 EARTH HISTORY
PR: A course in geology. 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. Lec.-lab.

GLY 2850 ENVIRONMENTAL GEOLOGY
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. No credit for geology majors.

GLY 3006 GEOLOGY OF OUR NATION'S PARKS
Representative parks used to illustrate current concepts in geology. For the non-science student. No credit for geology majors.

GLY 3400 STRUCTURAL GEOLOGY
PR: 12 hours of geology, MAC 1104 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. Study of regional tectonics and major structural provinces. Lec.-lab.

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

GLY 3820 INTRODUCTION TO HYDROGEOLOGY
PR: Eight hours of geology, MAC 1104 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 4200 MINERALOGY-PETROLOGY I
PR: Physical Geology, one year of chemistry and college trigonometry or equivalent or CI. Principles of crystal chemistry, crystallography and mineralogy with emphasis on common rock-forming minerals. Lec.-lab.

GLY 4220 MINERALOGY-PETROLOGY II
PR: GLY 4200 or CI. Theory and use of polarized light microscopy as a means of mineral identification. Special emphasis is placed on the identification of igneous and metamorphic rocks in hand specimen and thin section. Lec.-lab.

GLY 4511 PRINCIPLES OF STRATIGRAPHY
PR: GLY 4550. Emphasis on classical principles of litho- and biostratigraphy, stratigraphic nomenclature, development of stratigraphic philosophy, and paleogeographic reconstruction of sedimentary basins. Emphasis on applications to petroleum exploration. Lec.-lab.

GLY 4550 DEPOSITIONAL SYSTEMS
PR: GLY 2016, GLY 2100 or equivalent. Study of modern sedimentary environments and their relationships to one another in order to understand environments preserved in the rock record. Physical, chemical, and biological aspects of terrestrial, transitional and marine sedimentary environments will be examined in light of their eventual preservation in rocks.

GLY 4555 SEDIMENTOLOGY
PR: GLY 4220, GLY 4550 or CI. Analysis of sedimentary rocks and sedimentary structures as related to their environments of deposition. Textural and mineralogical study of sediments and statistical applications to sediment analysis. Lec.-lab-field trips.

GLY 4700 SURFICIAL GEOLOGY
PR: Senior or advanced junior standing and CC. Origin, evolution and distribution of land forms and soils. Dynamics of the earth's surface. Lec.-lab.

GLY 4730 MARINE GEOLOGY
PR: 12 hours of geology or CI. General survey of the geology of the ocean floor from beaches to ocean trenches including sediments, processes, tectonics and history.

GLY 4750 FIELD METHODS
PR: 12 hours of geology courses or CI. Fundamentals of geology in the field; compass and plane table mapping, mapping of aerial photos, reconnaissance surveys, interpretation of geologic structure. Lec.-lab.-field trips.

GLY 4816 ECONOMIC MINERAL DEPOSITS
PR: 16 hours of geology or CI. Principles involved in the origin, occurrence, recovery, and use of mineral resources. Lec.-lab.-field trips.

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

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

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

GLY 4930 SELECTED TOPICS IN GEOLOGY
PR: One year college chemistry, GLY 4200 or CI. Age, formation and evolution of the earth with application of basic chemical concepts and processes that govern the distribution of elements in geologic environments.

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

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

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

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

GLY 5615 ADVANCED STRATIGRAPHIC PALEONTOLOGY
PR: GLY 4360, GLY 4550 or CI. Morphology, geologic distribution, and stratigraphic ranges of important invertebrate guide fossils. Lec.-lab.-field trips.

GLY 5825 ADVANCED HYDROGEOLOGY
PR: GLY 3820, MAC 3282 or MAC 3412 or CI. Flow systems, analytical and numerical solutions to ground water flow problems. Emphasis on the theoretical aspects of ground water flow systems and their interaction with the geologic framework. Lec.-lab.-field trips.

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

GLY 6220 CLAY MINERALOGY
PR: Graduate standing in geology or CI. Composition, structures, origin, and diagenesis of clay minerals. Identification of clay minerals.
by X-ray diffraction techniques.

GLY 6215 SEDIMENTARY GEOCHEMISTRY (3)
PR: GLY 5241 or CI. Fundamentals of aqueous geochemistry in relation to chemical and biochemical precipitation of sedimentary materials. Geochemistry of fluids with emphasis on diagenesis.

GLY 6345 SEDIMENTARY PETROGRAPHY (4)
Classification, petrographic description and interpretation of sedimentary rocks including depositional environments and diagenetic environments. Lec.-lab.

GLY 6410 GEOLOGY OF NORTH AMERICA (2)
PR: Graduate standing or CI. Regional structure, stratigraphy, and history of North America.

GLY 6420 GLOBAL TECTONICS (2)
PR: Graduate standing or CI. Development of the global tectonic hypothesis, modern global tectonic theory, and the role of tectonic processes in the evolution of the earth.

GLY 6575 COASTAL SEDIMENTATION (3)
PR: GLY 4555 or equivalent. Study of modern coastal sedimentary environments with emphasis on beaches, inlets, deltas, estuaries, and marshes. Analysis of sedimentary process and resulting morphology of sediment bodies. Lec.-lab.-field trips.

GLY 6660 MARINE PALEOECOLOGY (3)
PR: GLY 3610, GLY 4555 or CI. Interpretation of the relationships between sedimentary organisms and their environment with emphasis on the substrate. Applications of modern benthic marine environments and sediment-organism relationships to the fossil record. Lec.-field trips.

GLY 6735 SELECTED TOPICS IN GEOLOGY (1-4)
PR: CI. May be repeated for credit.

GLY 6905 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable. (S/U only.)

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

GLY 6931 GRADUATE SEMINAR (1)
PR: CC. May be repeated for credit. (S/U only.)

GLY 6933 ADVANCED TOPICS IN GEOLOGY (2)
PR: Graduate standing in Geology. Study of current topics in Geology. Required of all graduate students in Geology. May be repeated for credit.

GLY 6971 THESIS: MAJOR'S (var.)
Repeatable. (S/U only.)

MARINE SCIENCE

UNDERGRADUATE COURSES
OCE 3001 INTRODUCTION TO OCEANOGRAPHY (3)
Topics in biological, chemical, and physical oceanography presented in lectures by a number of specialists in these fields. (Also listed under Geology.)

GRADUATE COURSES
OCE 5050 BIOLOGICAL OCEANOGRAPHY (3)
PR: Graduate standing of CI, BSC 2010C, BSC 2011C, BSC 2012. The study of life in the sea with reference to distribution, reproduction, adaptation, competition, and populations. Lec.-lab. For students who have not majored in a biological science.

OCE 6671 METHODS IN BIOLOGICAL OCEANOGRAPHY (1)
PR: CI. To acquaint students with field and laboratory equipment and techniques currently used in biological oceanography. Emphasis will be on field problems especially those requiring research at sea.

OCE 5050 CHEMICAL OCEANOGRAPHY (3)
PR: CHM 2047 and CI. The ocean as a chemical system, including composition, physical-chemical aspects, role of nutrients, trace metals, interaction between bottom and overlying water, modern methods of analysis in routine use in oceanography. Lec.-lab.

OCC 6057 METHODS IN CHEMICAL OCEANOGRAPHY (1)
PR: OCC 5050 or CI. An intensive study of the use and limitations of field and laboratory equipment which is a standard part of chemical oceanographic research into the behavior of dissolved and particulate constituents in seawater.

OCE 5085 MARINE POLICY (2)
PR: OCE 3001 or CI. Course explores marine problems and their impact on society. Topics of interest include financing and organization of marine science; regulation (local, state, and Federal) of 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.

OCE 5934 SELECTED TOPICS IN OCEANOGRAPHY (1-3)
PR: CI. Special topics in biological, chemical, geological, and physical oceanography.

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

OCE 6934 SELECTED TOPICS IN OCEANOGRAPHY (113)
PR: CI. Special topics in biological, chemical, geological, and physical oceanography.

OCE 6939 GRADUATE SEMINAR IN OCEANOGRAPHY (1)
PR: Graduate standing. May be repeated. (S/U only.)

OCE 6942 FIELD STUDIES IN MARINE SCIENCES (3)
PR: One of the following: OCE 5050, OCE 6671, OCE 5050, OCE 6057, OCG 6075, OCG 5051, OCP 6056, or CI. Combination of classroom study with the collection, analysis, and interpretation of field data to attack specific problems in marine science both for deep sea and nearshore environments.

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

OCE 6972 DIRECTED RESEARCH (var.)
PR: G. Master's level. Repeatable. (S/U only.)

OCC 5050 GEOLOGICAL OCEANOGRAPHY (3)
PR: Graduate standing of CI. An introduction to the physical, historical sedimentary, and structural geology of the ocean basins and their borders. Lec.-lab.

OCC 6075 METHODS IN GEOLOGICAL OCEANOGRAPHY (1)
PR: OCC 5050 or CI. Description and application of the modern techniques of geology and oceanography used to investigate.

OCP PHYSICAL OCEANOGRAPHY (3)
PR: Graduate standing or CI, PHY 3042. The world ocean including its morphology, physical properties, currents, waves, tides, and related topics. Lec.-lab.

OCP 6056 METHODS IN PHYSICAL OCEANOGRAPHY (1)
PR: MAC 3414, OCC 5050 or OCP 5051, and CI. Field and laboratory techniques for acquisition, reduction, display, and discussion of physical oceanographic data (e.g., waves, tides, currents, dissolved and suspended constituents).

PCB 6476 DYNAMICS OF MARINE BENTHIC COMMUNITIES (3)
PR: EGN 2210, ZOO 5555C, or CI. Theoretical approach to the study of benthic communities in fluctuating and constant environments. Methods of analysis of benthic data will be evaluated and discussed. Computer programs will be utilized for analysis wherever possible. Lec.-lab.

ZOO 5456 ICHTHYOLOGY (4)
PR: CI or senior or graduate status; BSC 2010C, BSC 2012, PCB 4674 (helpful), ZOO 3713C (helpful). The evolution, systematics, and ecology of fishes. (Also listed under Zoology.)

MATHEMATICS

UNDERGRADUATE COURSES

COP 3215 COMPUTER APPLICATIONS OF MATHEMATICS (3)
CR: MAC 3412 or CC. Computer applications to mathematics, especially calculus, with FORTRAN programming.

MAA 4211 ADVANCED CALCULUS I (4)
PR: MAC 3413, with a grade of "C" or better; MHF 3102 and MAS 3103 or CI. Concepts of limit, continuity, differentiation, and integration of functions in one and several variables. Major topics include partial differentiation, Reimann-Stietjes integrals, improper integrals, infinite series, uniform convergence, implicit-function theorem, line and surface integrals, vector analysis.

MAA 4212 ADVANCED CALCULUS II (4)
PR: MAA 4211. Continuation of MAA 4211.

MAC 1104 COLLEGE ALGEBRA AND TRIGONOMETRY (4)
PR: Two years of secondary school mathematics including one year of algebra or HCC mathematics course MAT 1033, taught on USF campus or CC. Real numbers and their properties, algebraic expressions, equations and inequalities, functions, polynomials, exponential and logarithmic functions. Angles, trigonometric functions, properties and graphs of trigonometric functions, right triangles, laws of sines and cosines, polar coordinates. (No credit for MAC 1104 for students with credit in MAC 2243.)

MAC 1114 COLLEGE TRIGONOMETRY (2)
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 MAC 1104.)

MAC 2243 ELEMENTARY CALCULUS I (4)
PR: Pass diagnostic test in algebra. Students should have two years of secondary school mathematics including one year of algebra or HCC mathematics course MAT 1033 taught on USF campus or CC. Algebra, functions, differentiation, applications. MAC 2243-MAC 2244 is primarily for students of Biological Sciences. Social Sciences and Business. (No credit for math majors or students with credit in MAC 1104 or MAC 3281 or MAC 3411.)

MAC 2244 ELEMENTARY CALCULUS II (4)
PR: MAC 2243. Antiderivatives, the definite integral, techniques of integration, logarithmic and exponential functions, applications. (No credit for Mathematics majors or students with credit in MAC 3282 or MAC 3412.)

MAC 3281 ENGINEERING CALCULUS I (3)
PR: Pass diagnostic tests in algebra and trigonometry. Differentiation, limits, differentials, extrema, indefinite integral. (No credit for student with credit in MAC 2243 or MAC 3411.)

MAC 3282 ENGINEERING CALCULUS II (3)
PR: MAC 3281. Define integral, trigonometric functions, log, exponential, applications. (No credit for students with credit in MAC 2244 or MAC 3412.)

MAC 3283 ENGINEERING CALCULUS III (3)
PR: MAC 3282. Techniques of integration, numerical methods, analytic geometry, polar coordinates, Vector algebra, applications. (No credit for students with credit in MAC 3413.)

MAC 3412 CALCULUS I (4)
PR: MAC 3411 with a grade of "C" or better. Limits, derivatives, applications. (No credit for students with credit in MAC 2243 or MAC 3281.)

MAC 3413 CALCULUS II (4)
PR: MAC 3412 with a grade of "C" or better. Antiderivatives, the definite integral, applications, log, exponential and trig functions. (No credit for students with credit in MAC 2244 or MAC 3282.)

MAC 3413 CALCULUS III (4)
PR: MAC 3412 with a grade of "C" or better. Integration, polar coordinates, conic sections, vectors, indeterminate forms and proper integrals. (No credit for students with credit in MAC 3283.)

MAD 4401 NUMERICAL ANALYSIS (4)
PR: MAS 3103; ability to program a digital computer. Interpolation and quadrature, finite differences, numerical solution of algebraic and transcendental equations, numerical solution of differential equations, computer techniques.

MAP 4302 DIFFERENTIAL EQUATIONS (3)
PR: MAC 3413. First order linear and nonlinear differential equations, higher order linear equations, applications.

MAP 4303 LINEAR ALGEBRA (3)
PR: MAC 3411 or CI. Vectors, matrices, systems of linear equations, linear transformations.

MAS 4156 VECTOR ANALYSIS (2)
PR: MAC 3413. The algebra and calculus of vectors, applications, general coordinates, introduction to tensor analysis. (No credit for both MAA 4211 and MAS 4156.)

MAS 4301 ELEMENTARY ABSTRACT ALGEBRA (3)
PR: MHF 3102 or CI. Groups, rings, integral domains, fields, integers, the rational, real, and complex number systems.

MAT 4906 INDEPENDENT STUDY (1-4)
PR: CI. Specialized independent study determined by the student's needs and interests. The written contract required by the College of Natural Sciences specifies the regulations governing independent study. May be repeated. (S/U only.)

MAT 4930 SELECTED TOPICS IN MATHEMATICS (1-4)
PR: CI. The course content will depend on the interest of faculty members and student demand.

MGF 2119 COLLEGE MATHEMATICS (3)
PR: Two years of secondary school mathematics. Students should have the equivalent of two years high school math including of algebra or HCC mathematics course MAT 1033 taught on USF campus. Real numbers and their properties, algebraic expressions, equations and inequalities, functions, polynomials, exponential and logarithmic functions.

MGF 2120 FINITE MATHEMATICS (3)
PR: Passing score on diagnostic test. Students should have the equivalent of two years high school math including one year of algebra or HCC mathematics course MAT 1033 taught on USF campus. Linear of linear equations, line programming, introduction to statistics, introduction to probability.

MHF 3102 SET THEORY (3)
PR: MAC 3411 or CI. Relations, functions, order, cardinal numbers.

MTG 3204 INFORMAL GEOMETRY (3)
Concepts of length, congruence, similarity, transformations in the plane, ruler and compass constructions, impossible constructions, coordinate systems, graphs, lines and curves. (Open only to Elementary Education majors)

MTG 4212 GEOMETRY (4)
PR: MAC 3411. Emphasis on axiomatics, advanced Euclidean geometry, elements of projective geometry, non-Euclidean geometries.

STA 3023 INTRODUCTORY STATISTICS I (4)
Hypothesis testing, estimation; normal, Chi-square, t, F, binomial, multinomial, distributions; ANOVA, CR, RCB designs; single df, regression, correlation, contingency tables. Students who successfully complete this course may not also receive credit for either ECO 4402 and GEB 3121 or STA 3122. (No credit for Mathematics Majors.)

STA 3024 INTRODUCTORY STATISTICS II (3)
PR: STA 3023 or CI. Factorials, ANCOV; multiple curvilinear regression; response surfaces; Latin square, Split Plots, incomplete blocks designs; distribution free methods.

STA 3404 ELEMENTARY PROBABILITY (3)
Counting techniques, probability, expectation, probability distributions, the law of large numbers. (No credit for Mathematics Majors. Credit for Department of Biology majors.)

STA 4321 INTRODUCTION TO STATISTICS (3)

STA 4442 INTRODUCTION TO PROBABILITY (3)
PR: MAC 3413, MHF 3102. Introduction to probability theory using calculus. Basic ideas of probability and random variables, discrete probability functions, continuous probability densities including normal, gamma, x², and Weibull, and transformations of random variables.

GRADUATE COURSES

MAA 5306 REAL ANALYSIS I (3)

MAA 5307 REAL ANALYSIS II (3)
PR: MAA 5306. Continuation of MAA 5306.
MAA 5402 COMPLEX ANALYSIS I (3)
PR: MAA 4211. Complex numbers, analytic functions and mappings, integrals.

MAP 5302 COMPLEX ANALYSIS II (3)
PR: MAA 5402. Power series, residues and poles, conformal mappings.

MAP 5405 APPLIED COMPLEX ANALYSIS (3)
Complex numbers, analytic and harmonic functions. Series. Contour integrals, residue theory. Conformal mappings. (A survey course emphasizing techniques and applications.) (No credit for student with credit in MAA 5402 and MAA 5403.)

MAP 5306 COMPLEX ANALYSIS I (3)

MAP 6407 COMPLEX ANALYSIS II (3)
PR: MAA 6406. Continuation of MAA 6406.

MAA 6516 INTRODUCTION TO FUNCTIONAL ANALYSIS I (3)

MAA 6517 INTRODUCTION TO FUNCTIONAL ANALYSIS II (3)
PR: MAA 6516. Continuation of MAA 6516.

MAD 5306 INTRODUCTION TO GRAPH THEORY (3)
PR: CC. Brief introduction to classical graph theory (4-color theorem, etc.), directed graphs, connected digraphs, condensations, incidence matrices, Polya's Theorem, networks.

MAD 6407 ANALYSIS OF NUMERICAL METHODS (4)

MAD 6510 ANALYSIS OF ALGORITHMS (4)
PR: MAD 4401 or MAD 6407. Mathematical theory associated with algorithms for computer information processing; expected time and space requirements of algorithms, comparison of algorithms, construction of optimal algorithms, theory, underlying particular algorithms.

MAS 5311 ALGEBRA I (3)
PR: MAC 3413, MAS 5146, MHF 3102. An introduction to group theory.

MAS 5312 ALGEBRA II (3)
PR: MAS 5311. An introduction to Galois theory.

MAT 5932 SELECTED TOPICS (1-4)
PR: Senior or junior standing and CC. Each topic is a course of study: 01-History of Mathematics, 03-Logic and Foundations, 05-Number Theory, 07-Topics in Algebra, 09-Mathematics for Physics, 13-Topics in Probability and Statistics, 15-Topics in Topology.

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

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

MAT 6915 GRADUATE RESEARCH METHODS (1-4)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of 5 credits per student. (S/U only.)

MAT 6932 SELECTED TOPICS (1-4)
PR: CC. 01-Topology, 02-Analysis, 03-Algebra, 04-APPLIED Mathematics, 05-GRAPH Theory, 06-NUMBER Theory, 07-Mathematics for Physics, 08-Probability, 09-Statistics, 10-Complex Analysis.

MAT 6939 GRADUATE SEMINAR (1-4)
Direction of this seminar is by a faculty member. Students are required to present research papers from the literature. (S/U only.)

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

MAT 7912 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

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

MHF 3502 ELEMENTARY MATHEMATICAL LOGIC (3)
PR: CC. Truth tables, tautologies, quantifiers, rules of inference, informal proofs in mathematics.

MHF 6506 LOGIC AND FOUNDATIONS (4)
PR: CC. Propositional calculus, Post's theorem, first order and equality calculi, models, completeness and consistency theorems. Godel's theorem, recursive functions.

MTG 5316 TOPOLOGY (3)
PR: MAC 3413 and MHF 3102. Metric and topological spaces, con-
tunity, homeomorphisms, connectedness, fundamental group, compact spaces, separation axioms, product spaces.

MTG 5317 TOPOLOGY II
PR: MTG 5316. Continuation of MTG 5316. (3)

MTG 6326 ADVANCED TOPOLOGY
PR: MTG 5317 and CC. Function spaces, compactifications, covering spaces, other topics. (3)

STA 5166 APPLIED STATISTICAL METHODS
PR: STA 4442 and CC. Statistical inference in physical and engineering sciences utilizing sample probability distributions, point and interval estimation and test of significance, 3 lecture periods and 1 lab period. (3)

STA 5167 APPLIED STATISTICAL METHODS II
PR: STA 5166. Applications of analysis of variance and covariance, regression analysis use of $x^2$ for contingency tables and goodness of fit procedures. 3 lecture periods and 1 lab period. (3)

STA 5206 STOCHASTIC PROCESS
PR: STA 5447. Basic concepts of stochastic processes, finite Markov chains, random-walks with applications to life sciences and engineering. (4)

STA 5236 MATHEMATICAL STATISTICS
PR: STA 5447. Sample distribution theory, point & interval estimation theory, and theory of hypothesis testing. (4)

STA 5446 PROBABILITY THEORY I
PR: MAA 4212 or MAA 5306. Concepts of probability theory, axioms of probability, random variables, probability distributions and distributions of functions of stochastic variables. (3)

STA 5447 PROBABILITY THEORY II
PR: STA 5446. Concepts of mathematical expectation, moment generating functions, probability generating functions, characteristic functions and limit theory of probability distributions. (3)

STA 5526 NON-PARAMETRIC STATISTICS
PR: STA 5326, CC. Theory and methods of non-parametric statistics, order statistics, tolerance region and their applications. (4)

STA 6208 LINEAR STATISTICAL MODELS
PR: STA 5167 or STA 5326. Distribution theory for linear statistical models. Results applied to multiple regression, polynomial regression, balanced and unbalanced experimental designs, analysis of covariance. (3)

STA 6746 MULTIVARIATE STATISTICAL ANALYSIS
PR: STA 6876. The multivariate normal, estimation of mean vector and covariance matrix, correlation analysis, generalized $x^2$ -statistics and testing of the general linear hypothesis. (3)

STA 6876 TIME SERIES ANALYSIS
PR: STA 5326. Basic concepts of the theory and applications of time series analysis to include filtering, forecasting modeling, spectral analysis of univariate realizations with applications. (4)

MEDICAL TECHNOLOGY
Director: E. D. Olsen; Professors: E. D. Olsen, W. S. Silver; Associate Professors: D. V. Lim, J. R. Linton; Assistant Professors: S. H. Grossman, S. L. Vandor.

UNDERGRADUATE COURSES

MLS 3011 INTRODUCTION TO MEDICAL TECHNOLOGY
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. (1)

MLS 4215 CLINICAL MICROSCOPY I
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. (2)

MLS 4216 CLINICAL MICROSCOPY II
PR: Senior standing and acceptance into an approved affiliated hospital. A continuation of MLS 4215. A hospital internship course for medical technology majors. (4)

MLS 4309 HEMATOLOGY
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. (6)

MLS 4405 CLINICAL BACTERIOLOGY
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. (6)

MLS 4545 CLINICAL CHEMISTRY II
PR: Senior standing and acceptance into an approved affiliated hospital. A continuation of MLS 4625C, including procedures required for serology, transfusions, blood preservation, and antibody studies. A hospital internship course for medical technology majors. (4)

MLS 4625C CLINICAL LABORATORY INSTRUMENTAL ANALYTICAL TECHNIQUES
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. (4)

MLS 4625C CLINICAL CHEMISTRY I
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. (6)

PHYSICS

UNDERGRADUATE COURSES

PHS 3101 MATHEMATICAL ANALYSIS OF PROBLEMS IN MECHANICS AND ELECTRICKTY
PR: One year of non-calculus general physics. CR: MAC 3283 or MAC 3413. 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. Semesters: Fall, Spring. (2)

PHS 3102 PROBLEMS IN GENERAL PHYSICS I
CR: PHY 3040. First semester of two semester sequence of general physics problems. A course designed to allow those interested students to investigate problems not covered in the general physics course. Lec. Semesters: Fall, Spring, Summer. (1)

PHS 3103 PROBLEMS IN GENERAL PHYSICS II
CR: PHY 3041. Second semester of sequence PHS 3102, PHS 3103. Semesters: Fall, Spring. (1)

PHS 4802 ACOUSTICS FOR COMMUNICIOLOGY
PR: Non-mathematical study of general wave motion and associated phenomena. Acoustic resonance and response of the ear. Introduction to harmonic analysis of complex wave-forms with application to testing with pure tones and various types of waves, Acoustic instrumentation. (No credit for science majors.) Semesters: Fall, Spring. (3)

PHS 4814 FUNDAMENTAL ACOUSTICS
PR: PHY 3223 or CI. Vibrations of elastic media, sound generation and propagation. Acoustical, electrical, and mechanical energy conversion. Underwater acoustics. Fall Semester. (3)

PHY 2038 ENERGY AND HUMANITY
(3)
Social, economic, and political aspects of energy, including energy conservation, energy alternatives, personal use of solar energy, and changes in lifestyle. Field trips and audio-visual presentations play important roles.

PHY 2050, 2050L GENERAL PHYSICS AND LABORATORY
First semester of a two semester sequence of general physics (mechanics, heat, electricity, wave motion, optics, atomic and nuclear physics) and laboratory for science students. Must be taken concurrently and, if dropped, then dropped simultaneously. Semesters: Fall, Spring. (3:1)
PHY 2051, 2051L GENERAL PHYSICS AND LABORATORY (3:1)
PR: PHY 2050, PHY 2050L. Second semester of general physics and lab for science students. Must be taken concurrently and, if dropped, then dropped simultaneously. Semesters: Fall, Spring, Summer.

PHY 3020 CONCEPTUAL PHYSICS (4)
A qualitative, non-mathematical investigation of physics, emphasizing its influence on the way we view our world and our life today. (No credit for physics or mathematics majors) Semesters: Fall, Spring, Summer.

PHY 3040, 3040L GENERAL PHYSICS AND LABORATORY (3:1)
PR: MAC 3281 or MAC 3411. First semester of a two semester sequence of general physics (mechanics, wave motion, sound, thermodynamics, geometrical and physical optics, electricity, and magnetism) and laboratory. (No credit for physics majors and engineering students. Must be taken concurrently and, if dropped, then dropped simultaneously. Semesters: Fall, Spring, Summer.

PHY 3041, 3041L GENERAL PHYSICS AND LABORATORY (3:1)
PR: MAC 3282 or MAC 3412, PHY 3040, PHY 3040L. Second semester of general physics and laboratory for physics majors and engineering students. Must be taken concurrently and, if dropped, then dropped simultaneously. Semesters: Fall, Spring, Summer.

PHY 3123 MODERN PHYSICS (3)

PHY 3223 MECHANICS I (3)
CR: MAC 3283 or MAC 3413 and either PR: PHY 3040 or CR: PHS 3101. First semester of a two semester sequence. Review of vector algebra and vector calculus. Dynamics of single particles and systems of particles; central forces; rotation about an axis; statics; and virtual work. Fall Semester.

PHY 3323C ELECTRICITY AND MAGNETISM I (4)
PR: PHY 3041, MAC 3283 or MAC 3413. Electromagnetic circuits; resistance, capacitance, inductance, direct and alternating current circuits, thermoelectricity, and instrumentation. Laboratory. First semester of sequence PHY 3323C, PHY 3424. Fall Semester.

PHY 3424 OPTICS (4)
PR: PHS 3101 or PHY 3041; CR: MAC 3283 or MAC 3413. Reflection, refraction, dispersion, interference, diffraction, polarization, and laboratory. Fall Semester.

PHY 3822L INTERMEDIATE LABORATORY (2)
PR: PHY 3101 or PHY 3041 or equivalent. Experiments in modern physics, including the area of atomic, nuclear, solid state and wave phenomena. Fall Semester.

PHY 4324 ELECTRICITY AND MAGNETISM II (3)

PHY 4404 HOLOGRAPHY FOR FILM MEDIA (3)
PR: Junior standing in any major of CC. Practical instruction and laboratory experience in the making of holograms. Qualitative theory of lasers and holography. (For non-majors.) Spring Semester.

PHY 4526 STATISTICAL PHYSICS (3)

PHY 4604 QUANTUM MECHANICS I (3)
PR: PHY 3123 or CR. Postulates, Schrodinger’s equation, one-dimensional problems, matrix mechanics, uncertainty principle, angular momentum, and central forces. First semester of sequence PHY 4604, PHY 5624. Fall Semester.

PHY 4744C ELECTRONICS FOR RESEARCH (3)
PR: General Physics or CR. Direct and alternating current circuits, transients, rectification, amplification; feedback, pulse circuits, and integrated circuits, laboratory. (No credit for physics or mathematics majors.) Semesters: Fall, Spring.

PHY 4823L ADVANCED LABORATORY (2)
PR: PHY 3822L. Experimental work primarily related to nuclear physics. Emphasis on modern physical experimental techniques employing some of the new types of equipment. Spring Semester.

PHY 4905 INDEPENDENT STUDY (1-3)
PR: CI. Specialized, independent study determined by the student’s need and interest. The written contract required by the College of Natural Sciences specifies the regulations governing independent study. May be repeated. (S/U only.) Semesters: Fall, Spring, Summer.

PHY 4910 UNDERGRADUATE RESEARCH (1-4)
PR: Senior or advanced junior standing and CC. An individual investigation in the laboratory or library or both, under the supervision of the instructor. Credit hours and other contractual terms, are to be determined by student/instructor agreement. (S/U only.) Semesters: Fall, Spring, Summer.

PHY 4930 PHYSICS SEMINAR (1)
PR: Senior or advanced junior standing and CC. All undergraduate physics majors must enroll in this course at least twice and are expected to attend all Physics Colloquia. (S/U only.) Semesters: Fall, Spring, Summer.

PHY 4936 SELECTED TOPICS IN PHYSICS (1-4)
PR: Senior or advanced junior standing and CC. Each topic is a course in directed study and under the supervision of a faculty member.

GRADUATE COURSES

PHS 5113 METHODS OF THEORETICAL PHYSICS I (3)
PR: MAP 4302 or CI. Applications of mathematical techniques to classical and modern physics. Vector spaces including Hilbert space and Dirac notation, elements of vector and tensor analysis, matrices, group representations, eigenvalue problems, and variational calculus. Fall Semester.

PHS 5114 METHODS OF THEORETICAL PHYSICS II (3)
PR: MAP 4302 or CI. Applications of mathematical techniques to classical and modern physics. Elements of complex analysis including conformal mapping and calculus or residues, Fourier analysis, and transform calculus. Spring Semester.

PHS 5304 NUCLEAR PHYSICS (3)
PR: PHY 4604 or CI. Nuclear forces, nuclear models, nuclear structure, decay, nuclear reactions, and high energy physics. Spring Semester.

PHS 5405 SOLID STATE PHYSICS I (3)

PHS 5405B SOLID STATE PHYSICS I (3)
PR: PHY 4324 or CI. Introduction to the theory of Lie Groups and lie Algebras; applications to atomic and molecular physics, solid state physics, nuclear physics, classical physics, and elementary particle physics. (Offered alternate years.)

PHS 6204 ATOMIC AND MOLECULAR SPECTRA (3)
PR: PHY 4604 or CI. Quantitative study of atomic and molecular structure and spectra. Spring Semester.

PHS 6426 SOLID STATE PHYSICS II (3)
PR: PHY 5405 or CI. Optical, electrical and magnetic properties of insulators, superconductivity, imperfections in solids. Second semester of sequence PHS 5405, PHS 6426. Fall Semester.

PHS 6525 PLASMA PHYSICS II (3)
PR: PHS 5505 or CI. An analytical study of the various types of wave phenomena in plasmas describable by the continuum equations, the Boltzmann-Vislov equation or the Boltzmann equation. Spring Semester.

PHS 6607 THEORY OF RELATIVITY (3)
PR: PHS 5113 or CI. The special and general theory of relativity, including the gravitational field equations, applications of the special theory, experimental tests of the general theory and various topics of current research interest. (Offered alternate years.)
NURSING


UNDERGRADUATE COURSES

HUN 3201 NUTRITION (3)
PR: Course work in chemistry and biology or, permission of faculty. Open to majors and non-majors. The study of fundamental principles of normal nutrition as they relate to human life and growth from conception through senescence, interpretation of current nutrition information, and application of nutrition knowledge in the establishment of good eating habits.

NUR 3130 NURSING PROCESS II (2)
PR: Permission of faculty. Development of the nursing process as it relates to normal and high risk childbearing families, maturing families with children, and families with complex health problems. Integrates pathophysiology, nutrition, pharmacology and essential psychomotor skills of all ages.

NUR 313OL NURSING INTERVENTION II (3)
PR: Permission of faculty. Clinical nursing process linked with Nursing Process II and focuses on maturing families and their health needs. Incorporates psychomotor skills, nutrition, pharmacology, psychosocial and community aspects.

NUR 3321 NURSING PROCESS III (2)
PR: Permission of faculty. Development of nursing process as it relates to mental health-psychiatric nursing needs of clients. Integrates pathophysiology, nutrition, pharmacology and essential psychomotor skills of all ages.

NUR 3321L NURSING INTERVENTION III (2)
PR: Permission of faculty. Clinical nursing practice course linked to Nursing Process III. Focuses on meeting the mental health-psychiatric nursing needs of clients of all ages. Includes pathology, nutrition, pharmacology, essential psychomotor skills and community aspects.

NUR 3612 NURSING PROCESS I (3)
PR: Permission of faculty. Introduction to the nursing process and its application with stable families in the childbearing and child-rearing years. Essential psychomotor skills will be included.


NUR 3641L NURSING INTERVENTION I (2)
PR: Permission of faculty. Clinical nursing practice forces on healthy families in a variety of settings (linked to Nursing Process I). Incorporates psychomotor skills, nutrition, pharmacology, psychosocial and community aspects.

NUR 3641L NURSING PRACTICUM I (3)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. Clinical practice providing experience in application of the nursing process with selected multi-problem individuals and families in primary care settings.

NUR 3641 NURSING PROCESS IN PRIMARY CARE (3)
PR: RN students only. Admission to major or faculty permission. Focus on use of assessment skills and nursing process in serving healthy and multi-problem clients in primary care settings. Functional skills examination included.

NUR 3725C CLIENT ASSESSMENT I (3)
PR: Admission to nursing major or permission of faculty. Introduces knowledge and skills essential for biopsychosocial assessment of individual clients in primary, secondary and tertiary care settings with emphasis on data collection from secondary sources and interpretation of data with respect to clients' nursing needs.

NUR 3723C CLIENT ASSESSMENT II (3)
PR: Permission of faculty. Expands knowledge and skills essential for biopsychosocial assessment of needs of clients and families in primary, secondary or tertiary care settings with emphasis on data collection from secondary sources and interpretation of data with respect to clients' nursing needs.

NUR 4631L NURSING PROCESS IV (3)
PR: Permission of faculty. Care of institutionalized patients with selected major health problems, and care of the aged and chronically ill. Includes patho-physiology, nutrition, psycho-social aspects, pharmacology and appropriate psychomotor skills.

NUR 4635L NURSING PROCESS V (2)
PR: Permission of faculty. Development of the nursing process for students of all ages (including mother and infants) with problems arising from electrolyte, metabolic, endocrine and genitourinary disturbances. Integrates pathophysiology, essential psychomotor skills, nutrition, pharmacology, psychosocial and community health aspects.
of theories relevant to professional nursing practice, (communication, systems, leadership, scientific methodology, role learning, change, stress), historical development of nursing, and trends in nursing and health care, and ethical-legal aspects of health care.

NUR 4300 NURSING INQUIRY I (2)
PR: All preceding courses in prescribed curriculum plan or permission of Dean. This course will emphasize the relationship between research and the improvement of nursing practice and health care: attention will be directed toward the need for research in nursing, areas currently being investigated, ethical issues, the research process, and the implementation of the results of nursing research.

NUR 4504 INTERMEDIATE NURSING CORE (4)
PR: Admission to the major. Designed to assist registered nurses in building upon previous knowledge and experience in the following areas: research, roles, issues, and historical developments in nursing: ethical-legal matters; leadership and management; quality assurance; health team dynamics.

NUR 4506 NURSING CORE V (3)
PR: Permission of faculty. Continuation of previous core courses with emphasis on statistics and research methods related to nursing roles in the health care delivery system and on nursing research.

NUR 4512 NURSING PRACTICUM I (4)
PR: RN. Permission of Dean. Continuation of previous core courses with emphasis on research methods related to nursing roles in the health care delivery system and on nursing research.

NURSING CORE II (2)
PR: Permission of faculty. Continuation of Nursing Core I.

NURSING CORE III (2)
PR: Permission of faculty. Continuation of previous core courses.

NURSING I (3)
PR: Social Policy in Aging or permission of faculty. Theoretical and clinical experience which focuses on the diagnosis of illness, care and management, and cultural aspects of older persons.

NURSING II (3)
PR: Social Policy in Aging or permission of faculty. Theoretical and clinical experience which focuses on the diagnosis of illness, care and management, and cultural aspects of older persons.
NUR 6721 ADVANCED PATHOPHYSIOLOGY
PR: Advanced Physiologic Assessment. A conceptual approach which focuses on disease mechanisms to establish a sound scientific base for clinical assessment and management of common health problems of adult patients.

NUR 6751C ADULT HEALTH ASSESSMENT
PR: Admission to program or permission of faculty. Advanced Physiologic prerequisite or concurrent. Emphasizes advanced physical and psychological clinical assessment skills and includes a theoretical and practical approach based on nursing process.

NUR 6905 INDEPENDENT STUDY
Specialized individualized study determined by students' needs and interests which requires an approved contract with a faculty member.

NUR 6931 SELECTED TOPICS
Seminar for the analysis and discussion of selected issues in nursing of topical concern to student and faculty.

NUR 6945L PRACTICUM IN CLINICAL NURSING I
PR: Adult Nursing. Intensive directed study in advanced professional nursing which focuses on testing of nursing theories, teaching strategies and management of selected patients.

NUR 6946L PRACTICUM IN CLINICAL NURSING II
PR: Practicum in Clinical Nursing I. A summative clinical experience which focuses on the role of the advanced nurse clinician as a clinical specialist or adult primary care nurse.

NUR 6947L PRACTICUM IN NURSING EDUCATION
PR: Course requirements for nursing educational functional minor; permission of faculty. Instructional experiences which utilize educational concepts and instructional strategies in a variety of educational settings in nursing.

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

NUU 6027 PHARMACOLOGY FOR ADVANCED NURSE CLINICIANS
PR: NUR 6720 Advanced Physiologic Assessment. Graduate status. Synthesizes information relative to the pharmacological actions of selected classes of drugs with emphasis on mechanism, pharmacodynamics and implications for nursing practice.

NUU 6171C NURSING EDUCATION IN INSTITUTIONS OF HIGHER EDUCATION
PR: Permission of faculty. An examination of the historical development of nursing education within higher education, issues in higher education and their effect on nursing education, and the future role of nursing education in institutions of higher education.

NUU 6215C MANAGEMENT IN CLINICAL NURSING PRACTICE
PR: Management concepts including a variety of theoretical and clinical approaches to the management of patient care in a variety of patient care settings.

NUU 6222 ADVANCED ROLE DEVELOPMENT
PR: Permission of faculty. Combined lecture/seminar focusing on an exploration of role theory and its application to advanced nurse roles.

NUU 6230C CURRICULUM AND INSTRUCTION IN NURSING EDUCATION
PR: Permission of faculty. Trends and issues in curriculum development, faculty role, instructional strategies, internal and external factors influencing decisions in curriculum and instruction and implications for their utilization in nursing programs.

NUU 6293C FACTORS INFLUENCING HEALTH CARE
PR: Admission to program or permission of faculty. An interdisciplinary course that focuses on contemporary social, political and economic issues related to health care and legal-ethical concepts applicable to the decision-making process in nursing practice, education and research.

NUU 6370 NURSING RESEARCH
PR: Theory Development in Nursing. Includes an overview of research in nursing, identification of researchable problems, design and analysis of research proposals and research methodologies and strategies applicable to nursing.

NUU 6510 THEORY DEVELOPMENT IN NURSING
PR: Admission to program or permission of faculty. Focuses on theory development in nursing, including theory development, relationships of theoretical frameworks, and analysis of conceptual models as a basis for nursing diagnosis.

COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES

AFRICA AND AFRO-AMERICAN STUDIES

AFRICA AND AFRO-AMERICAN STUDIES

AF 2001 INTRODUCTION TO AFRO-AMERICAN STUDIES

AF 3101AFRICA AND THE UNITED STATES
An examination of the historical and current political, economic, and cultural relations between the United States and Africa. (Also listed under International Studies.)

AF 4301 SOCIAL INSTITUTIONS AND THE GHETTO
A study of social institutions as they relate to the American Black ghetto, with emphasis on social systems operating within and on the ghetto.

AF 4900 DIRECTED READINGS
Independent readings in a particular area of Afro-American Studies, selected by student and instructor.

AF 4931 SELECTED TOPICS IN AFRO-AMERICAN STUDIES
Topics offered are selected to reflect student needs and faculty interests. In depth study in such areas as the Black Student and the American Educational Process; the Black Experience in the Americas; European Expansion in Africa to 19th century; Contemporary Economic Problems in Africa.

AFI 3100 INTRODUCTION TO AFRICAN HISTORY
An outline survey of pre-colonial African history including a prefaceary introduction to the use of primary sources (such as archaeology, oral tradition, cultural anthropology, comparative linguistics, documents) in reconstructing the African past. (Also listed under History.)

AFI 3200 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 under History.)

AFS 3311 THE AFRICAN DIASPORA AND PAN-AFRICANISM
An examination of the African Diaspora and the influence of African culture and civilization on the growth and development of world culture; and the historical quest for racial and continental pan-Africanism including Garveyism.

AFS 4321 EDUCATIONAL DEVELOPMENT IN THE AFRICAN WORLD
An examination of educational systems and experiences of African peoples' cultural past and needs for their future. Attention to changing structures and fuctions of education as manifestations of governmental and societal needs and desires.

AFS 4910 RESEARCH AND FIELD STUDIES
A course linking the study pursued by the student with research and work projects in the Tampa Black community.

AMH 3571, 3572 AFRO-AMERICAN HISTORY
A survey of the Afro-American history in the Western Hemisphere. Emphasis on the experience in North America (AMH 3571, 1943-1865; AMH 3572 1865-to present.)
CPO 4244 GOVERNMENT AND POLITICS OF EAST, CENTRAL AND SOUTHERN AFRICA
In depth study of political developments, ideologies and modernization in East, Central and Southern Africa including race relations and white minority rule in Southern Africa.

CPO 4254 GOVERNMENT AND POLITICS OF WEST AFRICA
In depth study of government, political systems and processes in West Africa including political developments, ideologies, problems and prospects of political and economic development and military regimes in the area.

ECP 4143 BLACK AMERICANS IN THE AMERICAN ECONOMIC PROCESS
Brief economic history of Black Americans emphasizing the impact of racial discrimination and evaluating proposals for improvement as they apply to Black Americans and other minority groups.

HUM 3420 ARTS AND MUSIC OF THE AFRICAN PEOPLE
An examination of the visual arts—painting, sculpture, architecture and music of Sub-Saharan Africa; their meaning and impact on the arts and music of the Western World.

INR 4254 AFRICA IN WORLD POLITICS
Study of international relations in the new Africa including the relations of the new states with major world powers and their role in the United Nations.

PHM 4120 CONTEMPORARY BLACK PHILOSOPHY
Major themes and participants in the Black liberation movement since 1900.

PUP 3313 BLACKS IN AMERICAN POLITICAL PROCESS
An examination of the political experience of blacks in the American political process including their political socialization, and struggle to become effective participants in the American political process.

GRADUATE COURSES
AFH 5205 SEMINAR: AFRICA FROM COLONIAL TIMES TO THE PRESENT
PR: CI. An in-depth examination of Africa's colonial heritage and post-independence efforts at nation building, economic development and eradication of the remnants of colonialism, and other topics such as relations between African states and the former colonial powers and other major world powers.

AFH 5295 SEMINAR: AFRICA CONTEMPORARY ISSUES
PR: CI. An in-depth examination of major contemporary social and political issues in the African continent including their domestic and international dimensions.

INR 5257 SEMINAR: AFRICA AND THE UNITED STATES IN WORLD AFFAIRS
PR: CI. An in-depth examination of African-American relations since colonial days in the New World and in Africa with emphasis on the post World War II period.

SSEI 5934 SELECTED TOPICS
PR: CI plus senior standing or graduate status. May be repeated. To provide advanced students with interdisciplinary study of selected topics. (Also offered under Social Sciences Interdisciplinary.)

ANTHROPOLOGY

Chairperson: G. Kushner; Professors: R. T. Grange, Jr., G. Kushner, A. Shilooh, A. W. Wolfe; Associate Professors: M. V. Angrosino, J. J. Smith, C. W. Weinko, J. R. Williams; Assistant Professors: S. J. Gluckman, P. P. Waterman, L. M. Whiteford; Courtesy Faculty: Assistant Professor: J. A. Breugeman; Other Faculty: M. D. Vesperi.

UNDERGRADUATE COURSES

ANT 2000 INTRODUCTION TO ANTHROPOLOGY
The crosscultural study of the human species in biological and social perspective. Surveys the four major branches of anthropology: Physical anthropology (human biology), archaeology (the analysis of the prehistoric and historic remains of human cultures), anthropological linguistics (the analysis of language in its cultural context) and cultural anthropology (the crosscultural study of peoples living in the world today, be they in tribal, peasant, or urban societies.

ANT 3005 THE ANTHROPOLOGICAL PERSPECTIVE
For non-anthropology majors only. Presents the basic concepts of anthropology as they are relevant to contemporary life. Aims at enabling the student to understand the anthropologist's crosscultural view of the human species as adapting through biosocial means to life on this planet. May not be counted for credit toward an anthropology major.

ANT 3100 ARCHAEOLOGY
PR: ANT 2000 or CI. The crosscultural study of humankind from its beginnings up to and including the historic period through the recovery, description, an analysis of the remains of past cultures and societies.

ANT 3410 CULTURAL ANTHROPOLOGY
PR: ANT 2000 or CI. Discussion of major methods of analysis and orientations to the crosscultural study of the world's peoples. Representative case studies are used to demonstrate variations in human adaptations and to encourage an appreciation of diverse values and lifestyles.

ANT 3511 PHYSICAL ANTHROPOLOGY
PR: ANT 2000 or CI. Non-human primates, the fossil record and the biology of races are surveyed in order to understand the human animal as a product of biosocial phenomena. Anatomy, genetics, culture and evolution are emphasized.

ANT 3610 ANTHROPOLOGICAL LINGUISTICS
PR: ANT 2000 or CI. The comparative study of language in its cultural context, especially emphasizing the role of language in the cultural interpretation of physical and social reality.

ANT 4034 HISTORY OF ANTHROPOLOGICAL THEORY
PR: Senior standing with major in anthropology or equivalent. The major concepts that form the anthropological view of humanity are viewed in historical perspective. Basic ideas of the western and non-western traditions are analyzed from the Greeks to the 19th Century when they became incorporated into the new discipline of anthropology. 20th Century anthropological developments on these themes are considered.

ANT 4124 FIELD METHODS IN ARCHAEOLOGY
PR: ANT 3100 or CI. Normally offered as part of a Summer Field Session. Students also take Florida Archaeology and Laboratory Methods in Archaeology. Emphasis on appropriate methods of archaeological excavation and recording of data.

ANT 4133 UNDERWATER ARCHAEOLOGY
PR: ANT 3100 or CI. Methods, theory and history of underwater archeology. Diving history and physiology are considered. Emphasis on underwater archaeology as anthropology and the management of underwater archaeological resources.

ANT 4156 NORTH AMERICAN ARCHAEOLOGY
PR: ANT 3100 or CI. An examination of the evidence regarding the human settlement of North America from its beginnings through the development of aboriginal culture to the period of European conquest. Emphasis on the comparative study of material culture at selected sites from all time periods. No field work is involved.

ANT 4158 FLORIDA ARCHAEOLOGY
PR: ANT 3100 or CI. The content of prehistoric cultures such as Paleoindian, Weeden Island, and Safety Harbor are reviewed and examined in terms of their temporal and spatial relationships to each other and the Eastern U.S. Normally offered as part of a Summer Field Session. Students also take Field Methods in Archaeology and Laboratory Methods in Archaeology.

ANT 4162 SOUTH AMERICAN ARCHAEOLOGY
PR: ANT 3100 or CI. The chronological sequence from its beginnings through Protohistoric development is described and analyzed. Cultures such as the Maya, Aztec, Mixtec, Zapotec, Olmec, and Toltec are included, with emphasis on the environmental setting and the relationship between cultural ecology and the growth of civilization.

ANT 4163 MESOAMERICAN ARCHAEOLOGY
PR: ANT 3100 or CI. The chronological sequence from its beginnings through Protohistoric development is described and analyzed. Cultures such as the Maya, Aztec, Mixtec, Zapotec, Olmec, and Toltec are included, with emphasis on the environmental setting and the relationship between cultural ecology and the growth of civilization.
ANT 4172 HISTORICAL ARCHAEOLOGY (3)  
PR: ANT 3100 or CI. A survey and analysis of archaeology focused on the historic period. Laboratory research with data recovered from historic sites in addition to coursework.

ANT 4180 LABORATORY METHODS IN ARCHAEOLOGY (4)  
PR: ANT 3100 or CI. Normally offered as part of a Summer Field Session. Students also enroll in Florida Archaeology and Field Methods in Archaeology. Data recovered in excavation are cleaned, catalogued, identified, and analyzed in the laboratory.

ANT 4181 MUSEUM METHODS (4)  
PR: ANT 3100 and CI. Design, preparation and installation of exhibits in the Department of Anthropology Teaching Exhibits Gallery. Emphasis on theory, research, design and construction. Discussion of museum-related issues such as administration and curation.

ANT 4182 CONTEMPORARY PROBLEMS IN ARCHAEOLOGY (3)  
PR: ANT 3100 or CI. Focuses on the development of current archaeological method and theory. Examines the relationship between archaeology and the other branches of anthropology.

ANT 4226 ANTHROPOLOGY OF ART (3)  
PR: ANT 3410 or CI. An examination of the relationship between the visual arts (sculpture, painting, masks, carving, etc.) and culture in non-Western societies. Emphasis on formal symbolic and functional comparative analysis of specific art styles based on crosscultural materials. Consideration of diffusion and change of art forms, commercial and ethnic arts, and role of the artist.

ANT 4231 FOLKLORE (3)  
PR: ANT 3410 or CI. Focuses on crosscultural methods and techniques regarding the collection, classification, and analysis of such materials as myths, jokes, games, and items of material culture. African (or African derived), Oceanic and Native American societies are surveyed.

ANT 4241 ANTHROPOLOGY OF RELIGION (3)  
PR: ANT 3410 or CI. The crosscultural study of the social and cultural aspects of religion. Religious activities in traditional and modern societies will be discussed. Ritual behavior, religious practitioners and symbols of belief will be considered in light of their impact on the social, political or economic aspects of peoples' lives.

ANT 4302 WOMEN IN CROSS-CULTURAL PERSPECTIVE (3)  
PR: ANT 3410 or CI. Focuses on various theories, models and beliefs about male-female behaviors and interactions in human cultures throughout history and in various societies in the world today. (Also offered under Women's Studies.)

ANT 4305 VISUAL ANTHROPOLOGY (3)  
PR: ANT 3410 or CI. The use of photographic techniques for the crosscultural recording and analysis of human activities. The study of ethnographic photography as both art and science, and the production of an anthropological study that expresses the goal of "visual literacy." Review and evaluation of the uses of visual techniques and the evidence they provide to the social scientist.

ANT 4312 CULTURES OF NATIVE NORTH AMERICA (3)  
PR: ANT 3410 or CI. An examination of the evidence for the origin and antiquity of human beings in North America and of patterns of regional development until the period of contact with European colonists. Emphasis on varieties of ecological adaptation, social, political and religious systems, enculturation and worldview, folklore and visual art.

ANT 4316 CULTURES OF THE CONTEMPORARY UNITED STATES (3)  
PR: ANT 3410 or CI. Special concerns include the American community, change and continuity in American values and lifestyles, and the historical background and recent manifestations of human problems in the United States.

ANT 4326 CULTURES OF MESOAMERICA (3)  
PR: ANT 3410 or CI. Focuses on the history, contemporary values and interpersonal relationships, and patterns of rural and urban life in Mesoamerica. Guatemala and Mexico are emphasized.

ANT 4340 CULTURES OF THE CARIBBEAN (3)  
PR: ANT 3410 or CI. Main themes include: the depopulation of the aboriginal population and the resettlement of the area via slavery, indenture and migration; contemporary ethnic heterogeneity; economic problems of Third World microstates; development of a modern social and political consciousness. Religious diversity, music, the graphic arts and the literature of the contemporary Caribbean will also be surveyed.

ANT 4347 CULTURES OF THE MIDDLE EAST (3)  
PR: ANT 3410 or CI. Delineates the environment and cultural ecology of the Middle East and analyzes how they have influenced the variety of subcultures of the region. The rise and fall of the "little tradition of the enduring folk cultures will be analyzed. Contemporary culture change will be analyzed in a temporal perspective.

ANT 4342 CULTURE AND PERSONALITY (3)  
PR: ANT 3410 or CI. The relationship between the individual and society is studied crossculturally. Main themes include child-rearing practices, psychosomatic illness and curing. Discussion of theories and models of personality development with special reference to their applicability to the emerging field of cross-cultural mental health planning.

ANT 4442 URBAN ANTHROPOLOGY (3)  
PR: ANT 3410 or CI. The crosscultural study of urbanization, urbanism and human problems associated with metropolitan environments. Emphasis on the ethnography of city life and its relationship to the practical applications of urban research.

ANT 4443 MEDICAL ANTHROPOLOGY (3)  
PR: ANT 3410 or CI. The study of health and human behavior in crosscultural perspective. Main themes include: the impact of disease on the development of human culture; comparative studies of curing practices; medical systems in their relationship to ideology. Emphasis on understanding the role of medicine, and the behavior of both practitioners and patients in modern societies.

ANT 4495 RESEARCH METHODS IN CULTURAL ANTROPOLOGY (3)  
PR: CI. The stages in the development and execution of ethnological research are discussed and practiced. Literature search, hypothesis formulation, selection of data collection techniques, elicitation of information, data analysis and report presentation are stressed. Research design models from the case literature are studied and supervised research in the local community is designed and carried out.

ANT 4542 CULTURE AND PHYSICAL ANTHROPOLOGY (3)  
PR: ANT 3511 or CI. A survey of the many ways in which behavior and technology influence the biology of prehistoric and modern human populations. Phenomena such as mating practices, urbanization and dietary habits are related to humans as animals. Behavior genetics and sociobiology are covered.

ANT 4552 EVOLUTIONARY BIOLOGY OF THE PRIMATES (3)  
PR: ANT 3511 or CI. A survey of non-human primates focusing on biological and evolutionary patterns. Anatomy, genetics and evolution are stressed; major primate types are surveyed for their biological adaptation. Primate sociobiology is discussed.

ANT 4583 THE PHYSICAL ANTHROPOLOGY OF LIVING HUMANS (3)  
PR: ANT 3511 or CI. An overview of evolution and biological variations of human races. Anthropological and physiological patterns are surveyed geographically. Cultural influences on racial biology are explored.

ANT 4586 THE PHYSICAL ANTHROPOLOGY OF PREHISTORIC HUMANS (3)  
PR: ANT 3511 or CI. A survey of the fossil record from the early primates through the ascent of Homo Sapiens Sapiens, focusing on the human lineage. Bio social patterns and cultures of the past are also covered.

ANT 4660 LANGUAGE AND CULTURE (3)  
PR: ANT 3610 or CI. Examines the relationships between language and culture in crosscultural perspective. Explores the extent to which languages shape the world views of their speakers. Emphasis on the nature and degree of fit between linguistics and other cultural systems of knowledge.

ANT 4705 APPLIED ANTHROPOLOGY (3)  
PR: ANT 3410 or CI. A review of approaches applying the anthropological perspective to contemporary human problems. Particular emphasis placed on public policy issues in United States society. Discussion of the evolution of the field of applied anthropology, problems of economic development of the Third World, and the ethics of applied research and intervention.

ANT 4723 ANTHROPOLOGY AND EDUCATION (3)  
PR: ANT 3410 or CI. Examines the processes through which human beings learn to become functioning members of a society. Crosscultural analysis of patterns of education based on crosscultural data. Discussion of problems of minority education and the teaching of anthropology in primary/secondary schools.
ANT 4750 ETHNOGRAPHY OF COMMUNICATION (3)
PR: ANT 3610 or CI. Examines the role of language and other modes of communication in the social settings of speech communities. Student field projects focus on the crosscultural description and analysis of patterns of communication in ethnographic contexts.

ANT 4901 DIRECTED READING (1-4)
PR: CI. Individual guidance in concentrated reading on a selected topic in anthropology. Contract required prior to registration.

ANT 4907 INDIVIDUAL RESEARCH (2-4)
PR: CI. Individual guidance in a selected research project. Contract required prior to registration.

ANT 4930 SPECIAL TOPICS IN ANTHROPOLOGY (3)
PR: CI. Topics to be chosen by students and instructor permitting newly developing interdisciplinary special interests to be explored. May be repeated as topics vary.

ANT 4935 SENIOR SEMINAR IN ANTHROPOLOGY (3)
PR: Senior standing with major in anthropology, or equivalent. Through discussion of readings and student papers, students rethink and reevaluate anthropology as a discipline and the integration of its branches and specialty fields. Students develop and articulate their current images of anthropology.

MUH 4521 FOLK MUSIC (3)
PR: ANT 3410 or CI. Examines ethnic musics in America, emphasizing the functions of folk music in rural and urban settings. Materials drawn crossculturally are studied in both religious and secular forms. When feasible, classwork is supplemented by live performances. Technical knowledge of music is not required.

GRADUATE COURSES

ANT 5904 DIRECTED READING (1-4)
PR: CI. Individual guidance in concentrated reading on a selected topic in anthropology. Contract required prior to registration.

ANT 5915 INDIVIDUAL RESEARCH (2-4)
PR: CI. Individual guidance in a selected research project. Contract required prior to registration.

ANT 5937 SEMINAR IN ANTHROPOLOGY (2-4)
PR: CI. Topics to be chosen by students and instructor.

ANT 6186 SEMINAR IN ARCHAEOLOGY (3)
PR: Graduate standing. One of four core courses required of all students. A critical survey of archaeology emphasizing contribution to applied anthropology. Open to non-majors.

ANT 6196 METHODS IN PUBLIC ARCHAEOLOGY (3)
PR: Three of the core courses, or CI. Field techniques, methods of collection, analysis, and interpretation of data. May be repeated up to 6 credit hours as topics vary. Open to non-majors. Lec.-lab, field trips.

ANT 6197 SELECTED TOPICS IN PUBLIC ARCHAEOLOGY (3)
PR: Three of the core courses, or CI. Current topical issues in public archaeology. May be repeated up to 6 credit hours as topics vary. Open to non-majors.

ANT 6198 REGIONAL PROBLEMS IN PUBLIC ARCHAEOLOGY (3)
PR: Three of the core courses, or CI. Contemporary problems in public archaeology in the context of a specific region. May be repeated up to 6 credit hours as topics vary. Open to non-majors.

ANT 6446 METHODS IN URBAN ANTHROPOLOGY (3)
PR: Three of the core courses, or CI. Field techniques, methods of collection, analysis, and interpretation of data. May be repeated up to 6 credit hours as topics vary. Open to non-majors. Lec.-lab, field trips.

ANT 6447 SELECTED TOPICS IN URBAN ANTHROPOLOGY (3)
PR: Three of the core courses, or CI. Current topical issues in urban anthropology. May be repeated up to 6 credit hours as topics vary. Open to non-majors.

ANT 6448 REGIONAL PROBLEMS IN URBAN ANTHROPOLOGY (3)
PR: Three of the core courses, or CI. Contemporary problems in urban anthropology in the context of a specific region. May be repeated up to 6 credit hours as topics vary. Open to non-majors.

ANT 6463 REGIONAL PROBLEMS IN MEDICAL ANTHROPOLOGY (3)
PR: Three of the core courses, or CI. Contemporary problems in medical anthropology in the context of a specific region. May be repeated up to 6 credit hours as topics vary. Open to non-majors.

COMMUNICOLOGY

Chairperson: S. W. Kinde; Professors: S. W. Kinde, L. H. Ricker, S. I. Ritterman, D. C. Shepherd; Associate Professors: J. B. Crittenden, A. M. Guilford; Assistant Professors: R. L. Carlson, C. F. Kuffel, D. P. McClowry, J. F. Scheuerle; Instructor: S. R. Halstead; Lecturer: E. A. Kasan; Visiting Faculty: Professor: S. O. Richardson; Courtesy Faculty: Professors: M. Abdoney, F. X. Frueh, E. T. Gray, M. Habal; Assistant Professor: G. H. Horsfall; Other Faculty: S. Daly, K. K. Hollahan.

UNDERGRADUATE COURSES

SPA 2001 SURVEY OF COMMUNICATION DISORDERS (2)
A general survey course concerning the nature and prevention of disorders of communication.

SPA 3020 INTRODUCTION TO COMMUNICATION DISORDERS (4)
The scope of speech pathology as a profession and a field of study. An introduction to speech and language disorders (articulation, stuttering, voice, aphasia, etc.): etiologies, major treatment approaches, and research findings.

SPA 3080 INTRODUCTION TO RESEARCH PROCEDURES IN COMMUNICOLOGY (4)
Perspective on research in speech pathology and audiology. Introduction to multivariate design considerations as they apply to research in speech and hearing laboratory and clinical settings. Analysis of basic hypothesis testing.

SPA 3101 ANATOMY OF THE SPEECH AND HEARING MECHANISM (6)
The neurological and anatomical basis of communication disorders. Comparisons of normal and pathological organic structures and their functional dynamics.

SPA 3110 INTRODUCTION TO HEARING SCIENCE (4)
The scope of audiology as a profession and field of study. An introduction to the study of hearing impairments: classifications, etiologies, major treatment approaches, and research findings.

SPA 3117 INTRODUCTION TO SPEECH SCIENCE (4)
PR: SPA 3020, SPA 3101. Concentrated study of the acoustic,
physiological and perceptual aspects of sound as related to normal and pathological speech communication. Introduction to instrumentation and measurement procedures.

SPA 4004 COMMUNICATION DISORDERS IN THE PUBLIC SCHOOLS (3)
PR: CC or delegate. An examination of the speech, language and hearing problems affecting school-age children and the classroom teacher’s role in the detection, prevention and amelioration of communication disorders.

SPA 4040 STRUCTURE OF SIGN LANGUAGE (3)
PR: CI. Semiotic and linguistic consideration of American Sign Language (ASL). Includes aspects of phonology, syntax, semantics, and discourse in ASL.

SPA 4050 INTRODUCTION TO PRACTICUM (1-12)
Observation and participation in speech pathology and audiology practicum in the University clinical laboratory.

SPA 4250 COMMUNICATION DISORDERS I: VOICE/ARTICULATION/STUTTERING (3)

SPA 4255 COMMUNICATION DISORDERS II: CEREBRAL PALSY/CLEFT PALATE/APHASIA (4)
PR: LIN 3010, LIN 4040, LIN 4710 and admission to program. An introduction to communication disorders associated with the peripheral speech mechanism (articulation, voice etc.); identification, etiologies, and major treatment approaches.

SPA 4333 INTRODUCTION TO AMERICAN SIGN LANGUAGE (1)
Introduction to the elements of body language, gesture, and facial expression as related to manual communication. Also discusses aspects of physical contact as a communication tool. Open to interested non-majors as well as Communicology majors.

SPA 4334 FUNDAMENTALS OF FINGERSPELLING (2)
PR: CI. A concentrated study of technique in fingerspelling emphasizing clarity and rhythm in expression as well as receptive understanding.

SPA 4336 BASIC AMERICAN SIGN LANGUAGE (2)
Introduction to American Sign Language (ASL) as used in the deaf community. General discussion of ASL structure and introduction to various manual communication systems and philosophies. Emphasis on building a basic vocabulary. One hour laboratory course (SPA 4339) to be taken concurrently. Open to all majors.

SPA 4363 NATURE AND NEEDS OF THE HEARING IMPAIRED (4)
A study of the effects of auditory disorders upon the organization and expression of behavioral patterns as they relate to motivation, adjustment and personality.

SPA 4930 SELECTED TOPICS (3)
PR: CI. Intensive study of topics in Speech Pathology, Audiology, and/or Aural (Re)Habilitation (Deaf Education) conducted under the supervision of a faculty member. May be repeated for a total of 9 credit hours.

GRADUATE COURSES

SPA 5002 THE SCIENCE OF COMMUNICATION DISORDERS (4)
PR: SPA 3020 or SPA 3110 or CI. The application of behavioral and learning principles to the study of the normal development of speech, language and hearing and to the management of disorders.

SPA 5132 AUDIOLOGY INSTRUMENTATION (6)
PR: CI. Calibration, usage and specific applications of specialized instruments available in dealing with the identification and measurement of hearing disorders.

SPA 5201 COMMUNICATIONALDOS: ARTICULATION (3)
PR: CI. An examination of normal and deviant articulatory acquisition, disordered behavior; presentation of major theoretical orientations and the therapeutic principles based upon them.

SPA 5210 COMMUNICATIONALDOS: VOICE (3)
PR: CI. A comprehensive study of the medical and physical aspects of voice disorders. Primary emphasis is on therapeutic management.

SPA 5222 COMMUNICATIONALDOS: STUTTERING (3)
PR: CI. A comprehensive study of the diagnosis and modification of stuttering based on a two-factor model. Other major theories are considered and evaluated.

SPA 5303 AUDIOLOGY: HEARING SCIENCE (6)
The study of the physiological acoustics of the auditory periphery; the neuranatomy and electrophysiology of the central auditory system; and psychoacoustic principles as they relate to clinical audiologic measurement parameters.

SPA 5312 PERIPHERAL AND CENTRAL AUDITORY TESTS (4)
PR: CI. The study of behavioral and electrophysiologic clinical tests designed to assess the function of the peripheral and the central auditory system. Tests which incorporate nonspeech stimuli and those which utilize speech stimuli will be included.

SPA 5437 INTERMEDIATE AMERICAN SIGN LANGUAGE (4)
PR: SPA 4336 and CI. A continuation of the basic course which expands the student’s signing skills and introduces American Sign Language (ASL) idioms. Provides a greater opportunity for skill development in ASL structure and idiomatic usage. One hour laboratory course (SPA 4339) to be taken concurrently.

SPA 5538 ADVANCED AMERICAN SIGN LANGUAGE (4)
PR: SPA 4337 and CI. A continuation of the study of American Sign Language (ASL) at the advanced skill level. Added emphasis on idioms, body language, and facial expression as an integral part of ASL. A one hour laboratory course (SPA 4339) is to be taken concurrently. Open to all majors.

SPA 5539 AMERICAN SIGN LANGUAGE LABORATORY (1)
A laboratory course designed to offer students added practice with the manual being presented in the manual communications coursework through video and audio tapes. To be taken concurrently with each level of manual communication.

SPA 5402 COMMUNICATION DISORDERS: LANGUAGE (3)
PR: CI. Examination of research and clinical literature presenting major theoretical orientations pertaining to the etiology, evaluations, and treatment of those factors that hinder or interrupt normal language acquisition or function.

SPA 5550 METHODS FOR ORAL COMMUNICATION DISORDERS (6)
PR: SPA 5552 or CI. An in-depth analysis of classic and contemporary methods employed in the management of communicatively impaired individuals.

SPA 5552 EVALUATION OF ORAL COMMUNICATION DISORDERS (4)
PR: Admittance to the Program of CI. The administration, evaluation, and reporting of diagnostic tests and procedures used in assessment of speech and language disorders.

SPA 5557 SPEECH PATHOLOGY AND AUDIOLOGY PRACTICUM (1-4)
PR: CI. Participation in speech pathology and audiology practicum in the University clinical laboratory and selected field settings.

SPA 5600 MANAGEMENT OF COMMUNICATION DISORDERS (3)
PR: CI. The planning of programs for individuals with speech, language, and hearing impairments. Includes administration of programs in public schools, clinics, and private practice.

SPA 5930 SELECTED TOPICS (3)
PR: CI. A reading program of topics in speech pathology and/or audiology conducted under the supervision of a faculty member. May be repeated three times.

SPA 6106 NEUROLOGICAL CORRELATES OF LANGUAGE (3)
PR: CC or delegate. Review of the anatomy and physiology of the nervous system. Discuss neurological correlates or receptive and expressive language in verbal and non-verbal transmission and feedback.

SPA 6231 CEREBRAL PALSY (3)
PR: CI. A study of the medical, physical, occupational, speech, language, and hearing problems of the cerebral palsy. Therapy techniques are reviewed and evaluated.

SPA 6245 CLEFT PALATE (3)
PR: CI. An in-depth study of speech, language and hearing problems associated with cleft lip and cleft palate. Consideration is given to a multidisciplinary approach to therapy and rehabilitation.

SPA 6305 CHILD AUDIOLOGY (3)
PR: SPA 5312. Etiologies and manifestations of hearing loss within a pediatric population. Survey of procedures used in early identification
and quantified measurement of hearing loss in young and non-communicative children.

SPA 6307 SPECIAL AUDITORY TESTS (4)
PR: SPA 3512 or CI. History, development, rationale and techniques for administering hearing tests to determine site of lesion, including those requiring special instrumentation.

SPA 6322 TECHNIQUES OF AUDITORY TRAINING AND SPEECH READING (6)
PR: CI. A careful analysis of the visual and auditory sense modalities as input systems used to facilitate communication in the hearing impaired. Methods employed in the habilitation of both modalities will be presented.

SPA 6326 PROCEDURES AND MATERIALS FOR THE HEARING IMPAIRED (3)
PR: Major in Aural (Re)Habilitation or CI. Curricular adaptation, methods and techniques, organization necessary for teaching the hearing impaired.

SPA 6329 READING FOR THE HEARING IMPAIRED (2)
PR: RED 4510, RED 4515, major in Aural (Re)Habilitation and CI. Techniques and materials for teaching reading to children with auditory disorders. Evaluation and analysis of contemporary programs and methods.

SPA 6332 SPEECH FOR THE HEARING IMPAIRED (4)
PR: SPA 3020, SPA 3110, SPA 4363. Application and evaluation of techniques for teaching symbolic functioning to children with hearing impairments. Consideration of developmental and remedial aspects of reading.

SPA 6335 ADVANCED MANUAL COMMUNICATION AND BASIC INTERPRETING (3)
PR: SPA 4333 or equivalent and CI. A continuation of basic course which expands students signing skills and presents an exposition of sign systems aimed at signing in an English language context.

SPA 6345 HEARING AIDS (3)
Interpretation of hearing test data as it relates to the selection of the hearing aids and the planning of rehabilitation programs for the hearing impaired.

SPA 6354 HEARING CONSERVATION (4)
An investigation of the hazardous properties of noise and their effects upon the human auditory systems; hearing conservation programs in industry; and the extra-aural effects and control of community noises.

SPA 6401 PEDiatric LANGUAGE DISORDERS (3)
PR: CI. An examination of the pre-verbal and language skills of the infant and preschool child and the Speech Pathologist's role in the diagnosis, treatment and parent-trainer for these children.

SPA 6410 APHASIA (3)
PR: CI. A consideration of the neurological and psychological aspects of aphasia as they relate to communication disorders. Specific language therapy approaches are discussed and evaluated.

SPA 6423 LANGUAGE FOR THE HEARING IMPAIRED (4)
PR: SPA 3020, SPA 3110, SPA 4363 or CI. Techniques and materials of teaching language to children with auditory disorders. Evaluation and analysis of contemporary methods.

SPA 6505 PRACTICUM (1-8)
PR: Participation in speech pathology and audiology practicum in the University clinical laboratory and selected field settings.

SPA 6553 ADVANCED DIFFERENTIAL DIAGNOSIS AND TREATMENT PLANNING (3)
PR: CI. The interpretation of evaluation results and the integration of these data in order to make a differential diagnosis leading to an appropriate therapy plan. The administration, evaluation, and reporting of more advanced evaluation techniques not covered in SPA 5552.

SPA 6825 RESEARCH PROCEDURES IN SPEECH PATHOLOGY AND AUDIOLOGY (4)
PR: CI. Advanced research and experimental design techniques employed in clinical and laboratory settings in speech pathology and audiology.

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

SPA 6910 DIRECTED RESEARCH (var.)
PR: G. Master's level. Repeatable. (S/U only.)

SPA 6930 SELECTED TOPICS (3)
PR: CI. A reading program of topics in speech pathology and/or audiology conducted under the supervision of a faculty member. May be repeated three times.

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

CRIMINAL JUSTICE


UNDERGRADUATE COURSES

CCJ 3020 SURVEY OF THE CRIMINAL JUSTICE SYSTEM (3)
PR: PSY 2012, SOC 2000, or equivalent, or CI. An introduction to the structure and operation of law enforcement, prosecution, the courts, and corrections. Also includes brief coverage of major reported crimes.

CCJ 3701 RESEARCH METHODS IN CRIMINAL JUSTICE I (3)
PR: Junior standing and CCJ 3020 or CI. Introduces the student to some of the fundamentals of knowledge-generating processes in criminal justice.

CCJ 4110 AMERICAN LAW ENFORCEMENT SYSTEMS (3)
Provides a comprehensive examination of the American law enforcement system at the federal, state, and local levels and an assessment of career opportunities within the community.

CCJ 4130 THE LAW ENFORCEMENT OFFICER AND THE COMMUNITY (3)
PR: Junior Standing plus CCJ 4110 or CI. Examines the area of human relations especially as it applies to police functions within the community. Topics of justice and discrimination are emphasized.

CCJ 4283 CRIMINAL LAW II (3)
PR: CCJ 3280. Emphasizes the Constitutional issues and rules that are applied and enforced by the courts while processing criminal cases.

CCJ 4330 ALTERNATIVES TO INCARCERATION (3)
PR: Junior standing plus CCJ 4360 or CI. This course explores a variety of alternatives to imprisoning the offender, including probation, parole, diversion, and other community-based intervention and treatment approaches.

CCJ 4340 INTERVENTION TECHNIQUES AND STRATEGIES (3)
PR: Senior standing or CI. Introduces the student to theories and methods underlying treatment modalities currently employed in corrections.

CCJ 4360 AMERICAN CORRECTIONAL SYSTEMS (3)
PR: Junior Standing plus CCJ 3620 or CI. Analysis of the different treatment philosophies and techniques currently in use in the field, with special attention to experimental and demonstration programs.

CCJ 4501 JUVENILE JUSTICE SYSTEM (3)
PR: CCJ 3020 or CI. Provides coverage of the juvenile and family courts, their clientele, and the complex of human services agencies and facilities that contribute to efforts at juvenile correctional intervention.

CCJ 4604 ABNORMAL BEHAVIOR AND CRIMINALITY (3)
PR: CCJ 3620, or CI. A systematic introduction to the relationship between mental illness and criminality, with focus on psychiatric labeling of deviant behavior and its implications for the handling of the criminal offender.

CCJ 4700 RESEARCH METHODS IN CRIMINAL JUSTICE II (3)
PR: Junior standing plus CCJ 3701 or CI. Introduction to research methodology and the evaluation of research. This course may not be taken for credit if the student has already successfully completed STA 3122, GEB 2111, or STA 3023.
CCJ 4822 PRIVATE SECURITY SYSTEMS  
PR: Junior standing plus CCJ 4110 or CI. Examines some of the principal methods and techniques currently used to reduce or prevent losses due to theft and casualty.

*CCJ 4900 DIRECTED READINGS  
PR: CI. This course is specifically designed to enable advanced students to do in-depth independent work in the area of criminal justice. Each student will be under the close supervision of a faculty member of the program. No more than five hours of CCJ 4900, CCJ 4910 or any combination of the two will be accepted toward the minimum number of hours required for the major.

*CCJ 4910 DIRECTED RESEARCH  
PR: CI. This course is designed to provide students with a research experience in which they will work closely with faculty on the development and implementation of research projects in the area of criminal justice. No more than five hours of CCJ 4900, CCJ 4910 or any combination of the two will be accepted toward the minimum number for the major.

**NOTE:** CCJ 4900 & CCJ 4910. (a) Students wishing to enroll must make arrangements with a faculty member during the semester prior to actually taking the course. (b) A minimum of four (4) CCJ courses must have been completed satisfactorily prior to enrollment. (c) First consideration will be given to Criminal Justice majors, and (d) Individual faculty members may add additional requirements at their discretion.

CCJ 4934 SEMINAR IN CRIMINAL JUSTICE  
PR: Senior standing and CI. This variable topic seminar will consider the various changes occurring in the field of criminal justice with added emphasis on career responsibilities in the field.

CCJ 4940 INTERNSHIP FOR CRIMINAL JUSTICE MAJORS  
PR: Senior standing. The internship will consist of placement with one or more of the agencies comprising the criminal justice system. This course will enable the students to gain meaningful field experience related to their future careers. Each three-hour block of credit will require a minimum of ten hours of work per week within the host agency in addition to any written work or reading assignments. See requirements for the B.A. degree in Criminal Justice for the number of hours required. (S/U only.)

*Courses available only to students currently enrolled.*

CJT 4100 CRIMINAL INVESTIGATION  
Covers the major components of criminal investigation, with special attention to the scientific aspects of criminal investigatiaon and the management of major cases.

GRADUATE COURSES

CCJ 6205 THE JUDICIAL PROCESS  
PR: CCJ 6285 or CI. Designed to equip the student with an understanding of the evolution and current features which characterize the structure and operations of county, state, and federal courts.

CCJ 6285 LAW AND CRIMINAL JUSTICE  
An exposition of historical and contemporary legal principles, procedures, and issues as reflected in Constitutional provisions, statutes and case law.

CCJ 6305 THEORY, PRACTICE, AND RESEARCH IN CORRECTIONS  
Examination of the complex interrelationships between theory and practice in corrections, as these are affected by empirical research and systematic program evaluation.

CCJ 6345 SUPERVISION AND TREATMENT STRATEGIES  
Designed to acquaint the beginning graduate student with general conditions, skills and techniques required to provide effective correctional treatment or intervention with adult and juvenile offenders.

CCJ 6402 THEORY, PRACTICE, AND RESEARCH IN LAW ENFORCEMENT  
This issues-oriented course explores the relationships among theory, practice, and research as these are reflected in the problems and challenges which confront law enforcement.

CCJ 6405 LAW ENFORCEMENT ADMINISTRATION  
This course is designed to examine the major elements of law enforcement administration and management. Special attention is given to the organizational theory and scientific management of law enforcement agencies.

CCJ 6455 CORRECTIONAL ORGANIZATION AND ADMINISTRATION  
This course is intended to provide a comprehensive overview of the state of the art of correctional organization and administration. This course blends together the most current information from the managerial and behavioral sciences.

CCJ 6466 RESOURCE DEVELOPMENT AND ACQUISITION  
PR: Junior standing plus CCJ 4110 or CI. Examines some of the principal methods and techniques currently used to reduce or prevent losses due to theft and casualty.

CCJ 6487 SYSTEMS ANALYSIS IN CRIMINAL JUSTICE  
PR: CCJ 6709. Time is spent on the design and analysis of both existing and student created systems, with emphasis on the role of system analysis as it applies to management information systems, and computer-based systems.

CCJ 6605 THEORETICAL APPROACHES TO CRIMINAL BEHAVIOR  
An introduction to, and comparison of, major historical and contemporary theories that seek to explain criminal behavior.

CCJ 6705 SYSTEMATIC INQUIRY IN CRIMINAL JUSTICE  
PR: CCJ 6705. Introduction to empirical research techniques and principles, statistics, data management, and management information procedures.

CCJ 6716 RESEARCH AND EVALUATION IN CRIMINAL JUSTICE II  
PR: CCJ 6709. Principles and methods of program evaluation and evaluative research in criminal justice. Focuses on application of research strategies under constraints of politics, deadlines, financial limits, and other field circumstances.

CCJ 6725 CORRECTIONAL PLANNING  
Provides an in-depth examination of urban correctional planning processes, with emphasis on personnel development, budgeting, and facility plans and their implementation.

CCJ 6726 LAW ENFORCEMENT PLANNING  
This course will examine contemporary law enforcement planning and will focus on techniques and skills required to forecast future needs of police agencies in rapidly expanding metropolitan areas.

CCJ 6910 DIRECTED RESEARCH  
PR: GR. Master's level. Repeatable. A maximum of six hours may be counted toward the minimum number of hours required by the department for the master's degree. (S/U only.)

CCJ 6920 PRO SEMINAR IN CRIMINAL JUSTICE  
One hour is required for all students. Provides a forum for presentation and discussion of research ideas by faculty, students, and guests, with a view toward development of thesis topics. Should be taken during first semester in program.

CCJ 6935 TOPICS IN CRIMINAL JUSTICE  
PR: Graduate standing in Department of Criminal Justice. This course provides opportunities for analysis and discussion of topics of major concern in criminal justice that are not covered in regular courses. May be repeated with different subject matter.

CCJ 6971 THESIS: MASTER'S  
PR: CCJ 6705. Repeatable. A maximum of six hours may be counted toward the minimum number of hours required for the Master's degree. (S/U only.)

GEOGRAPHY


UNDERGRADUATE COURSES

GEOA 3000 WORLD REGIONAL GEOGRAPHY  
Comparative and analytical analysis of representative regions of the world with emphasis on cultural, political, economic, and physical diversity.
an analysis of contemporary patterns in world and regional distribution of people and geographical factors underlying these patterns and their changes.

GEO 4460 HISTORICAL GEOGRAPHY
Survey of evolving landscapes through time; analysis is made by means of systematic and regional methods in order to reconstruct the changing culture-nature equation.

GEO 4470 POLITICAL GEOGRAPHY
PR: GEO 3370. The geographic factors underlying political decisions and influencing their outcome; the geographic consequences of these decisions; geopolitics.

GEO 4500 ECONOMIC GEOGRAPHY
PR: GEO 3370. The spatial organization of economic production, consumption, and exchange systems.

GEO 4530 GEOGRAPHY OF ENERGY
The primary sources of energy, examined regionally and systematically; resource bases, production, and consumption. OPEC and environmental problems are considered.

GEO 4602 URBAN GEOGRAPHY
PR: GEO 3370. Spatial analysis of urban areas; growth, location, spacing, and size. Development, site, situation, internal structure, and hinterland are considered.

GEO 4700 TRANSPORTATION GEOGRAPHY
PR: GEO 3370. Interrelationships between freight and passenger transportation and land use, in terms of site, traffic generation, and circulation.

GEO 4900 COASTAL ZONE MANAGEMENT
PR: GEO 3370. Physical, cultural, and environmental elements of the coastal zone; impact of economic activities; recreation and conservation.

GEO 4900 DIRECTED READING
PR: 20 hours in geography and CC prior to registration. May be repeated.

GEO 4910 INDIVIDUAL RESEARCH
PR: 20 hours in geography and CC prior to registration. May be repeated.

MET 4002 CLIMATOLOGY
PR: GEO 3013 or CI. An introductory course which includes an examination of climatic classification systems, problem climates, and the application of climate to selected topics such as world vegetation patterns, agriculture, housing and health.

MET 4010C METEOROLOGY
PR: GEO 3013 or CI. The earth’s atmosphere and its processes; weather forecasting and analysis; instrumentation.

URP 4052 URBAN AND REGIONAL PLANNING
The geographic foundations of the modern city, metropolitan development, and the trend toward megalopolis. Examined are the political problems of conflicting jurisdictions at the local, county, state, national, and international levels.

GRADUATE COURSES

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

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

GEO 6119 SEMINAR IN ADVANCED TECHNIQUES & METHODOLOGY
PR: Graduate standing in geography. Analytic study of a technique or investigation into an aspect of methodology. May be repeated once for credit, but topic may not be repeated.

GEO 6200C SEMINAR IN ADVANCED PHYSICAL GEOGRAPHY
PR: Graduate standing in geography. Analytic study of a problem selected from one or more aspects of the atmosphere, biosphere, hydrosphere, or lithosphere. May be repeated once for credit, but topic may not be repeated.

GEO 6428 SEMINAR IN ADVANCED CULTURAL GEOGRAPHY
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.

**GEP 6908 INDEPENDENT STUDY**  
(var.)  
Independent study in which student must have a contract with an in-
structor. Repeatable. (S/U only.)

**GEO 6949 ACADEMIC METHODOLOGY**  
(3)  
PR: CI. This course will center on quantitative methodology as it applies to the field of gerontology. It will be aimed at preparing the student for more advanced data analysis.

**GEO 6950 INSTITUTIONAL ADMINISTRATION**  
(3)  
PR: CI. This course deals with the management problems and prac-
tices in the administration of institutions in the field of aging. Con-
sideration is given to federal and state legislation, the management of people, and fiscal management.

**GEO 6600 PHYSICAL AND PSYCHOLOGICAL ASPECTS OF AGING**  
(3)  
Study of normal functioning of major organ systems of the body and basic psychological processes as related to the aging process, changes in functioning in perceptual, motor and cognitive areas from the developmental perspective.

**GEO 6910 DIRECTED READINGS**  
(1-4)  
PR: CI. A reading program of selected topics under the supervision of a faculty member. May be repeated up to 4 semester hours. (S/U only.)

**GEO 6930, 6931, 6933 SEMINAR IN SOCIAL GERONTOLOGY**  
(1,1,1)  
PR: CI. Designed to give the graduate student an opportunity to in-
tegrate concepts within the field of gerontology, and relate these to other fields of study. Guest lecturers from a variety of disciplines par-
ticipate in the seminar. (S/U only.)

**GEO 6934 SPECIAL TOPICS IN GERONTOLOGY**  
(2)  
PR: CI. Courses on topics such as pre-retirement, mental health, human services organization and senior center administration. May be repeated for credit with different subject matter up to 6 credit hours.

**GEO 6940 FIELD PLACEMENT**  
(6)  
PR: CI. Internship in an agency or setting. An assignment to an agen-
cy or organization engaged in planning or administering programs for older people or in providing direct services to older people. (S/U only.)

**GEO 6971 THESIS: MASTER'S**  
(var.)  
PR: CI: Thesis: Master's (var.) Repeatable. (S/U only.)

**HISTORY**


**AHF 3100 INTRODUCTION TO AFRICAN HISTORY**  
(3)  
An outline survey of pre-colonial African history including a pre-
atory introduction to the use of primary sources (such as ar-
chaeology, oral tradition, cultural anthropology, comparative linguistics, documents) in reconstructing the African past.  
(Also offered under Afro-American Studies.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMH 3200</td>
<td>AFRICAN HISTORY SINCE 1850</td>
<td>A survey of the Colonial and post-colonial history of Africa. Focus 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 offered under Afro-American Studies.)</td>
</tr>
<tr>
<td>AMH 2010, 2020</td>
<td>AMERICAN HISTORY I, II</td>
<td>A history of the United States with attention given to relevant developments in the Western Hemisphere, AMH 2010: European origins to 1877; AMH 2020: 1877 to present.</td>
</tr>
<tr>
<td>AMH 3110</td>
<td>AMERICAN COLONIAL HISTORY TO 1750</td>
<td>A study of the evolution of American society from the Age of Revolution to 1750. Attention is given to the transformation from colonies to privates with emphasis on ethnocultural conflict, religion, labor systems, and political culture.</td>
</tr>
<tr>
<td>AMH 3130</td>
<td>THE AMERICAN REVOLUTIONARY ERA</td>
<td>Emphasis on causes of the American revolution, the nature of Constitution-making, and the establishment of the federal system. Also examines the significance of loyalism, violence, and slavery in American society from 1750-1789.</td>
</tr>
<tr>
<td>AMH 3140</td>
<td>THE AGE OF JEFFERSON</td>
<td>A comprehensive study of American society and political culture from 1789-1828. Focuses on demographic trends, party systems, expansionism, Indian policy, labor, and ethnic-cultural conflicts.</td>
</tr>
<tr>
<td>AMH 3160</td>
<td>THE AGE OF JACKSON</td>
<td>Through 1828-1850, with emphasis on social and political conflict. Consideration of evangelicalism, reform, labor movements, urbanization, and political activity in the antebellum era.</td>
</tr>
<tr>
<td>AMH 3170</td>
<td>THE CIVIL WAR AND RECONSTRUCTION</td>
<td>An examination of political, social, and economic climate of the 1850's that led to the American Civil War. The course does focus upon the war itself in its military, diplomatic, and political consequences through the end of the Reconstruction (1877).</td>
</tr>
<tr>
<td>AMH 3201</td>
<td>THE UNITED STATES, 1877-1929</td>
<td>A study of America from the end of Reconstruction to the stock market crash. Ranging over political, social, and diplomatic developments, the course covers industrialization, reform, imperialism, feminism, race relations and World War I.</td>
</tr>
<tr>
<td>AMH 3252</td>
<td>THE UNITED STATES SINCE 1929</td>
<td>The United States from the Great Depression to the present. Covering political, social and diplomatic developments, the New Deal, World War II, the Cold War, Viet Nam, civil rights, feminism and Watergate.</td>
</tr>
<tr>
<td>AMH 3402</td>
<td>THE SOUTH AND SOUTH</td>
<td>A study of the American South from its colonial origins to the fall of the Confederacy in 1865. Emphasis on slavery and race, the Southern frontier, the development of sectional consciousness, and the coming of the Civil War.</td>
</tr>
<tr>
<td>AMH 3403</td>
<td>THE SOUTH SINCE 1865</td>
<td>Southern history since the surrender at Appomattox. Topics covered include Reconstruction, the Populist revolt, race relations, demonogopy and disfranchisement, Southern women, and the Civil Rights Movement.</td>
</tr>
<tr>
<td>AMH 3420</td>
<td>FLORIDA HISTORY</td>
<td>A history of Florida from Spanish discovery to the present. Examines Florida as an area of European conflict, the emergence of Florida within its regional setting, acquisition by the U.S. and subsequent political, economic and cultural growth.</td>
</tr>
<tr>
<td>AMH 3428</td>
<td>TAMPA HISTORY</td>
<td>Emphasizing the post-Civil War period, examines the origins of Tampa and the factors which made Tampa the center of a growing metropolitan area. The Tampa past will be studied against the state, national, and international developments.</td>
</tr>
<tr>
<td>AMH 3460</td>
<td>AMERICAN URBAN HISTORY</td>
<td>A study of American cities from the colonial period to the present. Through an examination of economic, political, social and physical developments, the course traces both the opportunities and problems presented by urban life.</td>
</tr>
<tr>
<td>AMH 3500</td>
<td>AMERICAN LABOR HISTORY</td>
<td>A study of American workers from the colonial period to the present. Examines the changing nature of work, its effects on workers (including minorities and women), and their responses as expressed in strikes, unions, and political action.</td>
</tr>
<tr>
<td>AMH 3510</td>
<td>U.S. DIPLOMATIC HISTORY TO 1898</td>
<td>The development of American Foreign Relations in the Agricultural era.</td>
</tr>
<tr>
<td>AMH 3530</td>
<td>IMMIGRATION HISTORY</td>
<td>A study of the composition and character of the &quot;American&quot; people with emphasis on the period from 1840s to the 1920s. Examines old-world backgrounds of immigrants and their responses to the new world's social, economic and political conditions.</td>
</tr>
<tr>
<td>AMH 3540</td>
<td>UNITED STATES MILITARY HISTORY</td>
<td>A study of American military policy and practices from colonial days to the present. Attention is given both to tactics and to strategy in the unfolding formulation and development of American armed might.</td>
</tr>
<tr>
<td>AMH 3545</td>
<td>WAR AND AMERICAN EMPIRE</td>
<td>The U.S. evolved in 200 years from 13 colonies to the number one power in the world. To achieve this goal we utilize war to achieve empire. This course will examine the link between American war and empire from the Revolution through Vietnam.</td>
</tr>
<tr>
<td>AMH 3800</td>
<td>HISTORY OF CANADA</td>
<td>A study of Canadian experience from its French origins through the British conquest to its present multi-racial character. Attention will also be given to the forces of nationalism, separatism, and regionalism.</td>
</tr>
<tr>
<td>ASH 3403</td>
<td>ANCIENT AND IMPERIAL CHINA</td>
<td>An historical survey of the foundation and flowering of Chinese civilization with primary emphasis on cultural, intellectual, and institutional elements, from the paleolithic period to the early Manchu Dynasty (17th century).</td>
</tr>
<tr>
<td>ASH 3404</td>
<td>MODERN CHINA</td>
<td>Political, economic, and social history of China from the time of the first major Western contacts (17th-18th Centuries) through the consolidation of socialism in the late 1950's, and the Great Leap Forward.</td>
</tr>
<tr>
<td>ASH 3501</td>
<td>HISTORY OF INDIA</td>
<td>A study of the major themes of Indian history from the Indus culture to the present. Emphasis will be given to the Classical, Mogul and British periods as well as the modern independent sub-continent.</td>
</tr>
<tr>
<td>EUH 2101, 2102</td>
<td>ANCIENT HISTORY I, II</td>
<td>An introductory survey of ancient history. EUH 2101 treats the ancient Near East and Greece from the origins of civilization to the full development of the Hellenistic kingdoms prior to conflict with Rome. EUH 2102 deals with Rome through the Regal, Republican, and Imperial periods, from the beginnings of civilization in Italy to the division of the Roman Empire, A.D. 395.</td>
</tr>
<tr>
<td>EUH 2112, 2122</td>
<td>MEDIEVAL HISTORY I, II</td>
<td>A thematic survey of the Middle Ages. EUH 2121 deals with the nascent, Christian civilization of Europe, circa 300-1050 A.D.; EUH 2122 treats the mature medieval civilization of Europe, circa 1050-1500.</td>
</tr>
<tr>
<td>EUH 2200, 2201</td>
<td>MODERN EUROPEAN HISTORY I, II</td>
<td>A thematic survey of Europe in the modern age. EUH 2200 treats the period from the Renaissance to the French Revolution; EUH 2201, from the French Revolution to the present.</td>
</tr>
<tr>
<td>EUH 3142</td>
<td>RENAISSANCE AND REFORMATION</td>
<td>A history of Europe from the Renaissance to the Thirty Years' War (1400-1618). The cultural, social, and economic characteristics will provide the framework for artistic, philosophical, religious, and political developments.</td>
</tr>
<tr>
<td>EUH 3181</td>
<td>MEDIEVAL CULTURE</td>
<td>A survey of thought, culture, and art in the Middle Ages. Medieval attitudes as manifested in literature, art, philosophy, education, and religion; with emphasis upon Medieval man's changing perception of himself and his world.</td>
</tr>
<tr>
<td>EUH 3185</td>
<td>VIKING HISTORY</td>
<td>A study of the daily life and attitudes of the medieval nobleman, peasant, townswomen, and the agrarian-urban economy and society which affected their lives.</td>
</tr>
<tr>
<td>EUH 3189</td>
<td>MEDIEVAL POLITICS</td>
<td>An inquiry into the nature, distribution, and use of political power during the Middle Ages, in such institutions as feudalism, monarchy, cities, and the church.</td>
</tr>
<tr>
<td>EUH 3502</td>
<td>ABSOLUTISM AND ENLIGHTENMENT</td>
<td>A history of Europe from the beginning of the Thirty Years' War to the outbreak of the French Revolution. Political and intellectual developments will be assessed in the light of society and the economy.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Title</td>
<td>Description</td>
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<tr>
<td>EUH 3205</td>
<td>HISTORY OF NINETEENTH CENTURY EUROPE</td>
<td>A comparative study of economic, political, social, and intellectual developments in nineteenth century Europe.</td>
</tr>
<tr>
<td>EUH 3222</td>
<td>HISTORY OF TWENTIETH CENTURY EUROPE</td>
<td>A comparative study of economic, political, social, and intellectual developments in twentieth century Europe.</td>
</tr>
<tr>
<td>EUH 3300</td>
<td>BYZANTINE HISTORY</td>
<td>A survey of the Byzantine (Eastern Roman) Empire from its foundation in A.D. 330 to its collapse in 1453. Emphasis on the relationship between the Byzantine Empire and the course of European history and on the cultural heritage of this Empire.</td>
</tr>
<tr>
<td>EUH 3401</td>
<td>CLASSICAL GREECE</td>
<td>A study of ancient Greece focusing on the brilliant period following the Persian Wars, but embracing as well the formative Bronze, Middle, and Archaic ages, and the decline culminating in the conquest of Greece by Philip II of Macedon in 338 B.C.</td>
</tr>
<tr>
<td>EUH 3402</td>
<td>HELLENISTIC GREECE</td>
<td>A study focusing on the career of Alexander the Great and on the Greek and Macedonian conquest of Imperial Persia. Also treated are the great Hellenistic kings prior to Rome's conquest of the eastern Mediterranean.</td>
</tr>
<tr>
<td>EUH 3412</td>
<td>ROMAN REPUBLIC</td>
<td>A study of the Roman Republic from 509 B.C. to the assassination of Julius Caesar in 44 B.C., with a prelude treating Rome's early development under royal rule. Political growth and change provide the framework for the treatment.</td>
</tr>
<tr>
<td>EUH 3413</td>
<td>ROMAN EMPIRE</td>
<td>A study of Imperial Rome from the assassination of Julius Caesar in 44 B.C. to the death of the emperor Constantine in A.D. 337. Emphasized is Rome's government of a vast Mediterranean empire including much of the Near East and Europe.</td>
</tr>
<tr>
<td>EUH 3461</td>
<td>GERMAN HISTORY TO 1870</td>
<td>A political, social, and cultural approach to the history of the Germanies from 1500 through 1870, with emphasis on the Protestant Reformation, the rise of Brandenburg-Prussian, and the unification under Bismarck.</td>
</tr>
<tr>
<td>EUH 3462</td>
<td>GERMAN HISTORY 1870 TO PRESENT</td>
<td>A political, social and cultural approach to the history of the German Empire from 1870 through the 1970's. The nation's two attempts to try for world power status are highlighted, as well as the Weimar Republic, prototype of the embattled democracy.</td>
</tr>
<tr>
<td>EUH 3501</td>
<td>BRITISH HISTORY TO 1688</td>
<td>A study of major developments in British history from the 15th century to 1688.</td>
</tr>
<tr>
<td>EUH 3502</td>
<td>BRITISH HISTORY 1688 TO PRESENT</td>
<td>A study of the major themes of British history since the Glorious Revolution including social, political, and economic developments leading to the creation of the modern democratic welfare state.</td>
</tr>
<tr>
<td>EUH 3530</td>
<td>BRITISH EMPIRE AND COMMONWEALTH</td>
<td>A study of the development of the British Empire from the age of initial expansion overseas to the creation of the multinational Commonwealth. Included are examinations of theory and myth of colonialism as well as the literature of imperialism.</td>
</tr>
<tr>
<td>EUH 3571</td>
<td>RUSSIAN HISTORY TO 1865</td>
<td>A survey of the social, political, economic, and cultural development of Russia from the year 800 to 1865. Topics include the personality of Russian rulers, the origins of Russian Socialism, and Russia's relationship to the West.</td>
</tr>
<tr>
<td>EUH 3572</td>
<td>RUSSIAN HISTORY 1865 TO PRESENT</td>
<td>An analysis of the tradition from late imperial society to the contemporary Soviet system. Emphasis will be placed on continuity and change in the economic, political, and cultural aspects of Russia from 1865 to present.</td>
</tr>
<tr>
<td>HIS 3461</td>
<td>SCIENCE AND CIVILIZATION</td>
<td>A thematic study of the interrelationship of science and society in modern history emphasizing the institutional forms, value structures, and social relations in science as they have developed from the scientific revolution to the present.</td>
</tr>
<tr>
<td>HIS 3930</td>
<td>SPECIAL TOPICS</td>
<td>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 semester.</td>
</tr>
<tr>
<td>HIS 4152</td>
<td>THEORY OF HISTORY</td>
<td>Recommended to be taken during the senior year. Required of all history majors. An analysis of the foundations of historical knowledge and historical methodology. Includes a survey of historical thinking and writing from ancient times to the present.</td>
</tr>
<tr>
<td>HIS 4901</td>
<td>ORAL HISTORY</td>
<td>A study of the craft and technique of Oral History. The course focuses on a number of historical studies which have utilized interviews as an instrument of historical research. Students will be expected to complete original field research.</td>
</tr>
<tr>
<td>HIS 4900</td>
<td>DIRECTED READING</td>
<td>PR: CI. Arrangement with instructor prior to registration. Readings in special topics.</td>
</tr>
<tr>
<td>HIS 4920</td>
<td>COLLOQUIUM IN HISTORY</td>
<td>Reading and discussion of selected topics in the various fields of history. The subject and scope of inquiry will be determined by the instructor for each section. May be repeated for credit.</td>
</tr>
<tr>
<td>HIS 4936</td>
<td>PRO-SEMINAR IN HISTORY</td>
<td>PR: CI. Advanced topics in the various fields of History. Emphasis on discussion of assigned readings and on research and writing of a major paper. Required of all history majors. May be repeated up to 12 credit hours.</td>
</tr>
<tr>
<td>LAH 3021</td>
<td>SPAIN, PORTUGAL, AND IBERIAN EMPIRES</td>
<td>A study of peoples of the Iberian peninsula from the late medieval period to 1898. Emphasis falls on the emergence of the Iberian states and the rise of the Spanish-Portuguese empires in the Western Hemisphere from 1492 to 1898.</td>
</tr>
<tr>
<td>LAH 3022</td>
<td>MODERN LATIN AMERICA</td>
<td>A study of the emergence of the Latin American states. The course will examine developments in Latin America during the nineteenth and twentieth centuries. Special attention is given to the Third World character of the region.</td>
</tr>
<tr>
<td>LAH 3430</td>
<td>HISTORY OF MEXICO</td>
<td>Mexican history from pre-Columbian cultures to the twentieth century. Emphasis falls on the colonial political economy, social development, the wars of independence, development of the 19th century Mexican state and the Mexican revolution.</td>
</tr>
<tr>
<td>LAH 3470</td>
<td>HISTORY OF THE CARIBBEAN</td>
<td>A thematic study of the circum-Caribbean from pre-Columbian cultures to the twentieth century, emphasizing the development of the Caribbean political economy with emphasis on monoculture, plantation society, and colonial/neocolonial relationships.</td>
</tr>
<tr>
<td>LAH 3480</td>
<td>HISTORY OF CUBA</td>
<td>Cuban history from pre-Columbian cultures to the Cuban Revolution. Emphasis on colonization, the sugar economy, the struggles for independence, the political economy of the Republic, and the 20th century revolutionary process.</td>
</tr>
<tr>
<td>LAH 3506</td>
<td>HISTORY OF BRAZIL</td>
<td>Brazil from the 16th century to the present. Emphasis on the Portuguese conquest and settlement, emergence of the Empire and republic, the 20th century quest for modernity and leadership in Latin America.</td>
</tr>
<tr>
<td>WOH 3270</td>
<td>REVOLUTIONS IN THE MODERN WORLD</td>
<td>A comparative study of the major revolutions in world history. Emphasis is placed on the testing of various theories and models of the revolutionary process in the context of concrete historical examples.</td>
</tr>
<tr>
<td>WST 3210</td>
<td>WOMEN IN WESTERN CIVILIZATION</td>
<td>Survey of women in the ancient Near East, ancient Greece, ancient Rome, early Middle Ages. Origins of Western attitudes toward sex roles, female sexuality, relation of power to gender. (May also be taken for credit in Women's Studies.)</td>
</tr>
<tr>
<td>WST 3220</td>
<td>WOMEN IN WESTERN CIVILIZATION II</td>
<td>Survey of European women from the late Middle Ages to the twentieth century: differing consequences of historical change for women and men. (May also be taken for credit in Women's Studies.)</td>
</tr>
<tr>
<td>WST 4309</td>
<td>THE FEMALE EXPERIENCE IN AMERICA</td>
<td>PR: WST 2010, or WST 2011, or CI. The female experience in America, in historical context, viewed through the writings of various cultures, ethnic groups. Current research on American women by feminist historians. (May also be taken for credit in Women's Studies.)</td>
</tr>
</tbody>
</table>
| WST 4310   | FEMINISM IN AMERICA                                                 | PR: WST 2010, or WST 2011, or CI. Emergence of the women's movement in 19th century America: origins, theoretical and practical issues, relation to European feminism. Sources, issues, implications of
20th century feminism. (May also be taken for credit in Women's Studies.)

GRADUATE COURSES

HIS 6085 INTERNSHIP IN HISTORY (1-4)
PR: CI. Supervised field placement in a local agency involved in historical planning and preservation. Students will receive practical experience in the fields of archival management, architectural preservation, and state and local research. (S/U only.)

HIS 6112 ANALYSIS OF HISTORIC KNOWLEDGE (4)
PR: Graduate standing. A study of History as a form of knowledge with emphasis on explanatory models and the relationships of social science theory to the problems of historical analysis.

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

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

HIS 6920 COLLOQUIUM IN HISTORY (4)
A readings and discussion course organized around an in-depth examination of selected topics within the fields. Emphasis of the course is on the review of the historiographical, methodological, and interpretative advances as they affect the topics under study. Repeatable as topics vary.

HIS 6939 SEMINAR IN HISTORY (4)
Research in selected topics within the fields selected by the instructor. Repeatable as topics vary.

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

HUMAN SERVICES


UNDERGRADUATE COURSES

HUS 3001 INTRODUCTION TO HUMAN SERVICES (3)
An introduction to the field of human services. Study of the professions and agencies involved in providing human services. Analysis of the values and ethics of various professional associations.

HUS 3502 (Formerly HUS 3300) SOCIAL POLICY IN THE UNITED STATES (3)
PR: HUS 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, nation and current issues.

HUS 4020 THE LIFE CYCLE (4)
An examination of individuals and the physiological and psychosocial changes which occur during infancy, childhood, adolescence, young adulthood, middle age and old age.

HUS 4100 (Formerly MHT 4302) INTERVIEWING (3)
PR: HUS 3001 or CI. The principles and techniques of interviewing. Use of interviewing in information gathering, research and helping relationships and developing skills in communication across cultural social and age barriers.

HUS 4700 PLANNING AND EVALUATION OF HUMAN SERVICES PROGRAMS (3)
PR: HUS 3001 or CI. Review of approaches to planning, coordination, and evaluation of human services programs in health, rehabilitation, welfare and community action programs. Applications of planning and evaluation techniques.

SOW 4332 COMMUNITY ORGANIZATION AND DEVELOPMENT (3)
PR: HUS 3001 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.

GRADUATE COURSES

HUS 5325 INTERVENTION TECHNIQUES (Formerly HUS 5224) (3)
PR: HUS 3001 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.

HUS 5505 MINORITY AGING (3)
This course treats the general issues, concerns and problems relevant to researchers and practitioners in the field of minority aging. Available to both majors and non-majors.

INTERNATIONAL STUDIES

Director: M.T. Orr; Professors: C.W. Arnade, F.J. Ohaegbulam, M.T. Orr; Professors Emeritus: J.W. Palm, R.A. Warner; Associate Professors: A. Hechiche, H.W. Nelsen, S.M. Stoudinger; Assistant Professor: D. Slider; Assistant Professor Emeritus: J.W. Palm; Lecturer: J.O. Bell

UNDERGRADUATE COURSES

AREA STUDIES
These multidisciplinary area study courses (AFS 3930, ASN 3000, ASN 3030, EUS 3000 and LAS 3001) deal with one or more countries of a region and will selectively emphasize their anthropological, economic, geographic, historical, relations, political and sociological aspects, and current problems. Each course may be repeated when countries of concentration vary.

AFS 3930 AFRICA (3)
ASN 3000 ASIA (3)
ASN 3030 THE MIDDLE EAST (3)
EUS 3000 EUROPE (3)
LAS 3001 LATIN AMERICA (3)

AFS 4150 AFRICA AND THE UNITED STATES (3)
An examination of the historical and current political, economic, and cultural relations between the United States and Africa. (Also offered under African and Afro-American Studies.)

ASN 3015 JAPAN TODAY (3)
An introduction to modern Japan and its world role, drawing upon insights provided by the social and behavioral sciences. Emphasis is placed upon Japan's foreign relations.

ASN 3014 CHINA TODAY (3)
A multidisciplinary study of contemporary (1949-present) China's political and economic development, foreign affairs, social system and culture.

EUS 3022 SOVIET UNION TODAY (3)
A multidisciplinary study of Soviet life and the Soviet citizen today and their impact on the role of the Soviet Union in the world.

INR 2085 WORLD TENSIONS (2)
A study of the major causes and consequences of critical tensions which lead to serious social disturbances between and within the independent states of the world.

INR 3141 INTERNATIONAL NUCLEAR POLICY (3)
A study of nuclear issues (such as system development, proliferation, control, strategic policy and war) as they relate to contemporary international politics.

INR 3336 INTELLIGENCE AND U.S. FOREIGN POLICY (3)
An examination of the role of intelligence and the intelligence community in U.S. foreign policy, with emphasis on the period since World War II.

INR 3503 THE UNITED NATIONS AND PEACE (3)
Study and analysis of the continuing development of the United Nations, using current major issues to understand its role as a harmonizing forum for conflicting political systems and ideologies.

INR 4083 READINGS SEMINAR IN SINO-SOVIET RELATIONS (3)
A readings seminar on the origin, development, present status, and future possibilities of Sino-Soviet relations, focusing on the period since 1956, and broader international ramifications.

SSI 1211 WORLD PERSPECTIVE (3)
An interdisciplinary study of the international system, major world regions and problems.

SSI 2261 WORLD IDEOLOGIES (3)
A course which details and examines the ideologies of today's independent countries; analyzing them in their political, social, cultural and historical context.

SSI 3128 ENERGY AND FOREIGN POLICY (3)
A multidisciplinary study of the interrelationship of energy policy and foreign policy.
SSI 3221 AMERICA'S ROLE IN THE WORLD (3)
A multidisciplinary study of America's role in world affairs, emphasizing current problems and issues in the formulation and implementation of foreign policy.

SSI 3242 INTERNATIONAL TERRORISM (3)
A study of contemporary international terrorism and its causes, ranging from national liberation movements to networks of philosophical anarchists.

SSI 3260 COMMUNISM IN THE MODERN WORLD (3)
An interdisciplinary study of the theory and practice of Communism in the world today.

SSI 3770 COMPARATIVE MILITARY SYSTEMS (3)
A comparative study of ways in which the military institutions of various nations are organized and interact with politics, societies and economies.

SSI 3930 SELECTED TOPICS (1-4)
Interdisciplinary studies with course content dependent on student demand and instructor's interest. May be repeated as topics vary.

SSI 3955 OVERSEAS STUDY (1-6)
A program of individual or group research in a foreign country.

SSI 4250 THE EMERGING NATIONS (3)
A multidisciplinary study of the efforts of third world nations to improve their status through economic development.

SSI 4900 DIRECTED READINGS (1-3)
PR: Cl. A supervised program of intensive reading of interdisciplinary materials in areas of specific interest. May be repeated.

SSI 4910 DIRECTED RESEARCH (1-3)
PR: Cl. A supervised program of interdisciplinary research in areas of specific interest. May be repeated.

SSI 4936 SENIOR SEMINAR (3)
PR: Senior standing and Cl. To provide an integrating experience for majors in International Studies.

WST 3275 WOMEN IN THE DEVELOPING WORLD (3)
A comparative study of women's status in various developing nations with that in various industrialized states. (Also offered under Women's Studies Program.)

OFF-CAMPUS TERM

Director: D.K. Lupton

UNDERGRADUATE COURSES

IDS 4900 DIRECTED READINGS (1-4)
PR: OCT Program approval. Open to all students approved for OCT Program. Provides students with community related readings. May be repeated up to 8 credit hours.

IDS 4910 DIRECTED RESEARCH (1-4)
PR: OCT Program approval. To provide students with community related research experience in areas of specific interest. May be repeated up to 8 credit hours.

IDS 4942 OFF-CAMPUS TERMINAL SOCIAL ACTION PROJECT (1-4)
PR: OCT Program approval. May be repeated up to 4 credit hours. (S/U only.)

IDS 4943 OFF-CAMPUS TERM SPECIAL PROJECT (1-2)
PR: OCT Program approval. (S/U only.)

IDS 4955 OFF-CAMPUS TERMINAL INTERNATIONAL PROJECT (1-2)
PR: OCT Program approval. (S/U only.)

POLITICAL SCIENCE


UNDERGRADUATE COURSES

CPO 3002 INTRODUCTION TO COMPARATIVE POLITICS (4)
Comparison and analysis of representative European and non-Western political systems.

CPO 4034 POLITICS OF THE DEVELOPING AREAS (4)
An analysis of the ideologies, governmental structures, and political precesses of selected nations of the non-Western world.

CPO 4936 COMPARATIVE GOVERNMENT AND POLITICS OF SELECTED COUNTRIES OR AREAS (4)
Studies political systems with common elements. Structure, process, domestic and foreign politics, and regional roles are considered. May be repeated up to 12 credit hours as topics vary.

INR 3002 INTRODUCTION TO INTERNATIONAL RELATIONS (4)
Concepts and analytical tools applied to events such as politics among nations, control of foreign policies, types of actors, war and peace.

INR 3102 AMERICAN FOREIGN POLICY (4)
Analysis of the development and scope of United States foreign policy, emphasizing goals and objectives, policy formulation and implementation, themes and issues.

INR 4334 DEFENSE POLICY (4)
Analytic institutional factors contributing to formulation of defense policy and the impact of such policy on international relations.

INR 4403 INTERNATIONAL LAW (4)
Examines essential components of the international legal system; recognition; succession; sea, air and space law, treaties, diplomatcs, International Court of Justice; laws of war, etc. Introduces the student to legal reasoning as employed in the international context.

INR 4950 INTERNATIONAL ORGANIZATIONS (4)
Study of the operations and structure of international organizations and effects on world politics; background and achievement of the UN; regional organizations and multi-national corporations.

PAD 3003 INTRODUCTION TO PUBLIC ADMINISTRATION (4)
Examination of organizational behavior and change, policy process, public management, financial administration, and personnel management from the perspective of public and social delivery.

PAD 4202 PUBLIC FINANCIAL ADMINISTRATION (4)
Analysis of problems in the growth and development of public budgetary theory and Federal budgetary innovations.

POS 2041 AMERICAN NATIONAL GOVERNMENT (3)
Analysis of basic principles and procedures of the American governmental system with emphasis on current issues and trends.

POS 2112 STATE AND LOCAL GOVERNMENT AND POLITICS (3)
Analysis of the structure and function of state and local governments, of the social and political influences that shape them, and of the dynamics of their administrative processes.

POS 3142 INTRODUCTION TO URBAN POLITICS AND GOVERNMENT (4)
Governmental and political structures and processes as they function in urban areas, with special focus on municipalities and locally based public services.

POS 3145 GOVERNING METROPOLITAN AREAS (4)
Examines governmental units and interactions in metropolitan areas, proposals for changes in governance, and policy areas of area-wide concern, such as housing services.

POS 3173 SOUTHERN POLITICS (4)
Examines changes in electoral politics in the South, and the role of interest groups and the state and federal government in facilitating change.

POS 3182 FLORIDA POLITICS AND GOVERNMENT (4)
A study of Florida political culture, political parties and elections, the legislative, executive, and judicial systems, and policy patterns. Open to majors and non-majors.

POS 3273 PRACTICAL POLITICS (4)
PR: POS 2041 or POS 3453 or CI. Coordinated scholarly and practical activity through class lecture and supervised field work in local political parties and election campaigns.

POS 3283 JUDICIAL PROCESS AND POLITICS (4)
The organization, development, and mechanical functioning of American court systems and the causes and consequences of judicial behavior from an empirical perspective.

POS 3453 POLITICAL PARTIES AND INTEREST GROUPS (4)
Analysis and understanding of role, functions, structure, and composition of such, and their impact on American governmental institutions.

POS 3491 INTRODUCTION TO LAW AND POLITICS (4)
Nature of law, legal process, relationship to political life of constitutional law, administrative law, the judicial process, and private law.
POLITICAL SCIENCE 261

URP 4050 CITY PLANNING AND COMMUNITY DEVELOPMENT
An introduction to the development, role, and components of city planning, and the political and actual policies of government in attempting to regulate or control urbanization.

GRADUATE COURSES

CPO 5934 SELECTED TOPICS IN COMPARATIVE POLITICS
Studies specific subnational areas in comparative politics such as political economy or the politics of specific countries or regions. May be repeated for credit as topics vary.

CPO 6007 SEMINAR IN COMPARATIVE POLITICS
Extensive examination of the major theories and approaches used in the study of comparative politics. Seminar format.

CPO 6036 POLITICS OF DEVELOPING AREAS
Advanced study of ideologies, politics, political institutions, and the socio-economic conditions that influence them in developing nations.

INR 5086 ISSUES IN INTERNATIONAL RELATIONS
Advanced study of international relations, including survey of basic literatures, analysis of various theoretical and methodological approaches, and analysis of major issues.

INR 6107 AMERICAN FOREIGN POLICY
Objectives, formulation, and execution of foreign policy; critical issues and problems confronting the United States. Study of various conceptual, methodological, and theoretical approaches.

PAD 5035 ISSUES IN PUBLIC ADMINISTRATION AND PUBLIC POLICY
Selected issues and topics in Public Administration and Public Policy. May be repeated for credit as topics vary.

PAD 5333 CONCEPTS AND ISSUES IN PUBLIC PLANNING
PR: UR 4050 or UR 6056. Analysis of basic concepts, issues, and strategies of planning; policy determination, collection of information, and decision-making.

PAD 5417 PUBLIC PERSONNEL ADMINISTRATION
A study of the major functions in public personnel, including recruiting, selection, testing, training, and development, and employee and human relations in the public service.

PAD 5605 ADMINISTRATIVE LAW
An examination of the constitutional and statutory bases and limitations of the administrative process, administrative adjudication, rule making, and the judicial review of such actions.

PAD 5612 ADMINISTRATIVE REGULATION
Analysis of the regulatory functions and processes in the American political system: regulatory commissions, their functions, powers, management, reforms, and relationship with other branches of government.

PAD 5807 ADMINISTRATION OF URBAN AFFAIRS
Analysis of the role of the administrator at the municipal level; the division of functions; policy formation; alternative governmental structures; effects on the administrative process.

PAD 5836 COMPARATIVE PUBLIC ADMINISTRATION
How organizations and managers perform within a particular environment, potential impact of innovation, and how service is accomplished in a variety of socio-economic environments.

PAD 6037 BUREAUCRACY AND PUBLIC POLICY
Analysis of the formal, informal, and societal characteristics of public bureaucracies. A study of the implementation of public policy by bureaucratic agencies.

PAD 6060 SEMINAR IN PUBLIC ADMINISTRATION
Examination of major theoretical and practical developments in public administration with focus on organization theory and current research trends in the field.

PAD 6105 SEMINAR IN PUBLIC ORGANIZATIONAL CHANGE
Introduction to problems, diagnosis, strategies, and methodology of changing public organizations.

PAD 6207 PUBLIC FINANCIAL ADMINISTRATION
An examination of the fiscal organization of federal, state and local
The image contains a page of text from a course catalog, listing various courses and their descriptions. Here is a structured representation of the content:

### POS 6228 STATE AND LOCAL BUDGETING (4)
An examination of the budgetary systems and practices of state and local governments with emphasis on preparation, authorization, and execution.

### POS 6306 URBAN POLICY ANALYSIS (4)
Examination of the organizational and administrative aspects of planning, program development, reporting and evaluation at local levels by state, regional, and other agencies.

### POS 6277 SEMINAR IN PROGRAM EVALUATION (4)
Focus on program cycle-planning, development, implementation and evaluation, needs assessment, goal setting, designing alternative program structures, and grant writing.

### POS 5994 ISSUES IN AMERICAN NATIONAL AND STATE GOVERNMENT (4)
Selected topics of study in American government. May be repeated for credit as topics vary.

### POS 5155 ISSUES IN URBAN GOVERNMENT AND POLITICS (4)
Selected issues and topics in urban government and politics. May be repeated for credit as topics vary.

### POS 5734 POLITICAL RESEARCH METHODS (4)
A survey of methods, problems, and issues in political research and analysis for the advanced student.

### POS 5764 COMPUTER APPLICATIONS IN POLITICAL SCIENCE (4)
The student will be introduced to the use of modern computers as a research tool. Computer lab component.

### POS 6045 SEMINAR IN AMERICAN GOVERNMENT AND POLITICS (4)
Advanced study of the institutions and processes of American national government and politics.

### POS 6095 SEMINAR IN INTERGOVERNMENTAL RELATIONS (4)
Advanced study of the interaction between the various levels of government. Interlocal processes, state and federal grants-in-aid, and their use for policy coordination will also be emphasized.

### POS 6127 ISSUES IN STATE GOVERNMENT AND POLITICS (4)
Advance study of selected topics in institutions, processes, and behavior of American state governments and Florida government. May be repeated as topics vary.

### POS 6157 SEMINAR IN URBAN GOVERNMENT AND POLITICS (4)
Analysis of literature with emphasis on urban political behavior, development of various theories, and propositions regarding government structure and the formation and implementation of public policy.

### POS 6247 ISSUES IN POLITICAL BEHAVIOR AND SOCIALIZATION (4)
Advanced study of selected topics in political behavior and socialization, including participation and activism, voting, public opinion, and leadership. May be repeated as topics vary.

### POS 6415 THE AMERICAN PRESIDENCY (4)
Analysis of problems and powers of the modern Presidency with emphasis on crisis management, staffing, legislative leadership, and decision making.

### POS 6427 THE LEGISLATIVE PROCESS (4)
Analysis of formal and informal decision-making processes in legislative bodies, with emphasis on U.S. House of Representatives and U.S. Senate. Executive-legislative conflict and cooperation; input/output analysis.

### POS 6455 POLITICAL PARTIES AND INTEREST GROUPS (4)
Analysis of status, functions, and characteristics of political parties and interest groups as well as their interactions with political processes, actors, and institutions.

### POS 6697 CONSTITUTIONAL LAW (4)
PR: Graduate standing or consent of instructor. Advanced study of legal, political, philosophic and methodological problems in constitutional law.

### POS 6698 SEMINAR IN LAW AND POLITICS (4)
PR: Graduate standing. Advanced study of institutions and processes in the field of law and politics. May be repeated as instructor and content vary.

### PSYCHOLOGY

**Acting Chairperson:** D.L. Nelson  
**Assistant Professors:** J.A. Becker, M.A. Finkelstein, G.H. Ironson, W.T. Neill, W.P. Sander, S. Shiffman;  
**Visiting Faculty:** R.B. Fowler, D. Schultz, P. Smith;  
**Other Faculty:** W.R. Biersdorf, E.B. Kimmel, G.M. St. L. O’Brien, T.A. Rich, H.J. Vetter, J.H. Williams;  

---

**Governing**

Current problems in budgeting, revenue and indebtedness are considered.

**Legal**

Introduction to advanced study; the major approaches and methodologies for acquiring political knowledge, intellectual foundations, and applications in various subfields.

**Public Administration**

PR: Graduate Master’s level. Repeatable. (S/U only.)

**Independent Study**

PR: 3.0 average in Political Science. Specialized independent study determined by the student’s needs and interests and with the consent of the instructor. (S/U only.)

**Selected Topics in Political Science**

Selected topics, issues, and problems in political science for advanced graduate students. May be repeated for credit as topics vary.

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**POL 5626 ISSUES IN POLITICAL PHILOSOPHY AND LAW**

PR: Graduate or senior standing and consent of instructor. Selected topics in political philosophy and law. May be repeated as topics vary.

**POL 5727 SEMINAR IN PUBLIC POLICY**

PR: Graduate standing or consent of instructor. Provides students who are capable of independent work with the opportunity to explore advanced problems of political theory.

**PUP 5607 PUBLIC POLICY AND HEALTH CARE**

The study of health care policy as it relates to the policy process in the American setting.

**PUP 5658 GOVERNMENTAL HOUSING POLICY**

This course examines government involvement in housing, with special emphasis on the development and analysis of certain housing programs.

**URP 5313 IMPLEMENTATION MEASURES IN URBAN/REGIONAL PLANNING I**

PR: URP 4050 or 6056. Basic legal concepts of land-use planning and implementation with the use of legal reference materials and academic works; zoning, subdivision regulation, public uses, and environmental issues.

**URP 5312 IMPLEMENTATION MEASURES IN URBAN/REGIONAL PLANNING II**

PR: URP 5313. Basic contemporary and innovative concepts in land-use planning: taxation, value compensation, public facility programming, growth management policies, development rights.

**URP 6056 CITY AND REGIONAL PLANNING**

A review of goals, objectives, and interrelationships between regional and city planning; intergovernmental and policy issues.
# Psychology

## Undergraduate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBH 4004</td>
<td>Comparative Psychology</td>
<td>3</td>
<td>The study of the evolution of behavior, similarities, and differences in capacities for environmental adjustment and for behavioral organization among important types of living beings.</td>
</tr>
<tr>
<td>CLP 414C</td>
<td>Abnormal Psychology</td>
<td>3</td>
<td>Descriptions, theoretical explanations, research evidence, and treatment of maladaptive behavior.</td>
</tr>
<tr>
<td>CLP 3003</td>
<td>Psychology of Adjustment</td>
<td>3</td>
<td>Genetic, organic, and learned factors involved in the processes of personal adjustment: applications of mental health principles to everyday living. Not for major credit.</td>
</tr>
<tr>
<td>CLP 414C</td>
<td>Abnormal Psychology</td>
<td>3</td>
<td>Descriptions, theoretical explanations, research evidence, and treatment of maladaptive behavior.</td>
</tr>
<tr>
<td>CLP 4414</td>
<td>Behavior Modification</td>
<td>3</td>
<td>Introduction to behavior analysis, and application of learning principles, behavioral measurement, research designs, and interventions in treatment settings.</td>
</tr>
<tr>
<td>CLP 4433</td>
<td>Psychological Assessment</td>
<td>3</td>
<td>A consideration of the instruments for intellectual and personality assessment including their applications, development, and potential abuses. Students may not receive credit for both CLP 4433, and EDF 3430.</td>
</tr>
<tr>
<td>CLP 3103</td>
<td>Child Psychology</td>
<td>3</td>
<td>Developmental and psychosocial aspects of childhood, including hereditary, maturational, psychological, and social determinants of child behavior. Not for major credit.</td>
</tr>
<tr>
<td>CLP 4005</td>
<td>Developmental Psychology</td>
<td>3</td>
<td>Survey of methods, empirical findings, and theoretical interpretations in the study of human and animal development.</td>
</tr>
<tr>
<td>EXP 4204C</td>
<td>Perception</td>
<td>3</td>
<td>How man perceives his environment. Topics include sensory basis of perception, physical correlates of perceptual phenomena, and the effects of individual and social factors on perception.</td>
</tr>
<tr>
<td>EXP 4304</td>
<td>Motivation</td>
<td>3</td>
<td>An examination of human and animal motivations from both physiological and psychological viewpoints.</td>
</tr>
<tr>
<td>EXP 4404</td>
<td>Psychology of Learning</td>
<td>3</td>
<td>Survey of methods, empirical findings, and theoretical interpretations in conditioning and instrumental learning.</td>
</tr>
<tr>
<td>EXP 4523C</td>
<td>Human Memory</td>
<td>3</td>
<td>Survey of methods, empirical finding, and theoretical interpretations of human learning, information processing, and verbal learning.</td>
</tr>
<tr>
<td>INP 3101</td>
<td>Applied Psychology</td>
<td>3</td>
<td>The application of psychological principles and the functions of psychologist in education, government, industry, and clinical practice.</td>
</tr>
<tr>
<td>INP 4004</td>
<td>Industrial Psychology</td>
<td>3</td>
<td>Applications of psychological principles to industry. Topics include: selection, training, motivation, job satisfaction, supervision, decision-making.</td>
</tr>
<tr>
<td>PPE 4004</td>
<td>Personality</td>
<td>3</td>
<td>Methods and findings of personality theories and an evaluation of constitutional, biosocial, and psychological determinants of personality.</td>
</tr>
<tr>
<td>PSB 4013C</td>
<td>Neuropsychology</td>
<td>3</td>
<td>Gross neural and physiological components of behavior. Structure and function of the central nervous system as related to emotion, motivation, learning, and theory of brain functions.</td>
</tr>
<tr>
<td>PSY 206A</td>
<td>An Introduction to Contemporary Psychology</td>
<td>3</td>
<td>A broad survey of psychology for both majors and non-majors with special emphasis on the more applied areas of psychology (e.g., social psychology, abnormal psychology, personality, and developmental psychology).</td>
</tr>
</tbody>
</table>

## PSY 3013 General Psychology

PR: PSY 2012 or CI. Designed as an in-depth examination of the basic principles and concepts of psychology. Extensive coverage will be given to the areas of learning, perception, and neuropsychology. Two lectures, one discussion/lab.

## PSY 3022 Contemporary Problems in Psychology

PR: CI. M.A. program in psychology or CI. Not for major credit. Course is affected by others. Designations covered are special problems in the area of psychological research in psychology. Emphasis is on theory from analysis of variance.

## External Resources

- **Clive**
- **Clayton**
- **Coe**
- **Coles**

## Graduate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLP 6166</td>
<td>Psychopathology</td>
<td>3</td>
<td>Admission to M.A. program in psychology or CI. Exploration of current approaches to the understanding of pathological behavior and implications for theories of personality. A survey of treatment methods is included. M.A. core course.</td>
</tr>
<tr>
<td>CLP 6438</td>
<td>Psychological Assessment</td>
<td>3</td>
<td>Courses cover theory, research, and applications of psychological assessment in areas such as interviewing, intellectual and cognitive functioning, neuropsychiatric diagnostics, and personality testing. May be repeated for credit with different subject matter.</td>
</tr>
<tr>
<td>CLP 6477</td>
<td>Behavioral Disorders of Children</td>
<td>3</td>
<td>CI. Causative factors in behavior deviations common to children and adolescents. Thorough study of selected childhood mental disorders and a survey of ameliorative techniques for treating childhood behavior difficulties.</td>
</tr>
</tbody>
</table>
CLP 6937 TOPICS IN CLINICAL-COMMUNITY PSYCHOLOGY (3)
PR: CI. Courses on topics such as humanistic psychology, community psychology, and clinical neuropsychology. May be repeated for credit with different subject matter.

CLP 7188 PSYCHOTHERAPY AND BEHAVIOR CHANGE (3)
PR: CI. Study of the theoretical, empirical, and applied foundations of the major systems of therapeutic intervention. May be repeated for credit with different subject matter.

CLP 7379 GRADUATE SEMINAR IN CLINICAL-COMMUNITY PSYCHOLOGY (1-3)
PR: CI. Seminars on topics such as psychopathology, community psychology, clinical issues, personality, and developmental psychology. May be repeated for credit with different subject matter.

DEP 6058 DEVELOPMENTAL PSYCHOLOGY (3)
PR: Admission to M.A. program in psychology or CI. Detailed study of the development of human behavior aimed toward an understanding of early contributions to later behaviors. Effects of early experience on later behavior. M.A. core course.

EXP 6208 PERCEPTION (3)
PR: Admission to M.A. program in psychology or CI. Current data and theory of perceptual processes. Consideration of physiological and psychological variables in perception, and applications of information theory and signal detection theory. M.A. core course.

EXP 6526 HUMAN MEMORY (3)
PR: Admission to M.A. program in psychology or CI. Review of methods, findings, and theoretical interpretations associated with the study of acquisition and retention of information. M.A. core course.

EXP 6930 TOPICS IN EXPERIMENTAL PSYCHOLOGY (3)
PR: CI. Courses on topics such as operant behavior, electrophysiological methods, psychophysiology, and memory. May be repeated for credit with different subject matter.

EXP 7099 GRADUATE SEMINAR IN EXPERIMENTAL PSYCHOLOGY (1-3)
PR: CI. Seminars on topics such as learning, perception, physiological psychology, cognitive processes, and quantitative methods. May be repeated for credit with different subject matter.

INP 6056 INDUSTRIAL PSYCHOLOGY (3)
PR: Admission to M.A. program in psychology or CI. An introduction to the major areas of Industrial-Organizational Psychology including the topics of selection and placement, training, criterion development and performance appraisal, job satisfaction and motivation, and organizational theory and structure. M.A. core course.

INP 6935 TOPICS IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (3)
PR: CI. Courses on topics such as industrial psychology, testing in industry, human factors psychology, and training in industry. May be repeated for credit with different subject matter.

INP 7097 GRADUATE SEMINAR IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (1-3)
PR: CI. Seminars on topics such as industrial psychology, evaluation of performance in industry, and human factors. May be repeated for credit with different subject matter.

PPE 6058 PERSONALITY (3)
PR: Admission to M.A. program in psychology or CI. Traditional and current theory and research in the area of personality. M.A. core course.

PSB 6056 PHYSIOLOGICAL PSYCHOLOGY (3)
PR: Admission to M.A. program in psychology or CI. Neural and physiological foundations of behavior. Structure and function of the central nervous system. Physiological basis of learning, motivation in subhumans and humans. M.A. core course.

PSY 6217 RESEARCH METHODS AND MEASUREMENT (4)
PR: CI. Courses in research strategies, design and analysis, and measurement theory in psychological experimentation. Inferential statistics, correlational methods, and interpretation. May be repeated for credit with different subject matter.

PSY 6218 GRADUATE RESEARCH METHODS (1-3)
Special course to be used primarily for the training of graduate research assistants. Variable credit, repeatable. Limited to a cumulative total of five credits per student. (S/U only.)

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

PSY 6946 PRACTICUM AND INTERNSHIP IN CLINICAL PSYCHOLOGY (1-5)
PR: CI. Supervised training in community and university settings in the application of psychology. May be repeated for credit.

PSY 6947 GRADUATE INSTRUCTION METHODS (1-3)
Special course to be used primarily for the training of graduate teaching assistants. Variable credit, repeatable. Limited to a cumulative total of five credits per student. (S/U only.)

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

PSY 7780 PROGRAM EVALUATION (3)
PR: PSY 6217 A & B or CI. CLP 6348, SOP 6669 desirable. An overview of principles and practices of program evaluation, including historical background, purposes and methods, planning and implementation, political context, ethics, and utilization.

PSY 7908 DIRECTED READINGS IN PSYCHOLOGY (1-15)
PR: CI. An advanced reading program of selected topics in Psychology under the supervision of a psychology faculty member. The reading program is designed to meet the individual requirements and interest of graduate students in Psychology, with selected topics chosen by the student in close collaboration with a faculty member. May be repeated for credit.

PSY 7918 DIRECTED RESEARCH (var.)
PR: GR. Ph.D. level. Repeatable. (S/U only.)

PSY 7931 SEMINAR IN ETHICS AND PROFESSIONAL PROBLEMS (3)
PR: Second year in Ph.D. program in psychology or CI. Ethical issues and professional problems in the practice of psychology.

PSY 7940 PRACTICUM IN PROGRAM EVALUATION (3)
PR: PSY 7800 or CI. Supervised training in program evaluation within community agencies.

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

SOP 6059 SOCIAL PSYCHOLOGY (3)
PR: Admission to M.A. program in psychology or CI. Overview of theory and research in social psychology. Attitudes, values, group processes, leadership, conformity, social learning and motivation, M.A. core course.

SOP 6669 TOPICS IN SOCIAL-ORGANIZATIONAL PSYCHOLOGY (3)
PR: CI. Courses on topics such as experimental social psychology, organizational psychology, attitudes, and group process. May be repeated for credit with different subject matter.

SOP 7609 GRADUATE SEMINAR IN SOCIAL-ORGANIZATIONAL PSYCHOLOGY (1-3)
PR: CI. Seminars on topics such as social psychology, scientific communication, and decision making. May be repeated for credit with different subject matter.

REHABILITATION COUNSELING

Chairperson: C.M. Pinkard; Professor: W.G. Emener; Associate Professors: F.J. Dickman, P. Gross, M.J. Landsman, C.M. Pinkard; Assistant Professor: J.D. Rasch

GRADUATE COURSES

EGC 5065 REHABILITATION: CONCEPTS AND THEORETICAL ISSUES (4)
An introduction to the rehabilitation process in the public and private sector. An integration of concepts and procedures from the medical, socio-psychological, and human service disciplines.

EGC 5376 MEDICAL ASPECTS OF DISABILITY (4)
A survey of medical conditions and disabilities encountered by
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite(s)</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGC 5493</td>
<td>Seminar in Principles and Practices of Rehabilitation Counseling I</td>
<td>CI</td>
<td>3</td>
</tr>
<tr>
<td>EGC 5496</td>
<td>Theoretical Issues in Applied Alcohol Abuse in Rehabilitation Counseling</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 5725</td>
<td>Interpersonal Aspects of Rehabilitation Counseling I</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 5850</td>
<td>Practicum I</td>
<td>CI</td>
<td>1</td>
</tr>
<tr>
<td>EGC 6205</td>
<td>Evaluation in the Rehabilitation Process</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6374</td>
<td>Vocational Evaluation and Adjustment Services of the Handicapped and Disadvantaged</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6417</td>
<td>Applications of Learning Principles</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6468</td>
<td>Psychosocial Aspects of Disability in Rehabilitation Counseling</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6470</td>
<td>Practicum in Applied Alcohol Abuse in Rehabilitation Counseling</td>
<td>EGC 5496</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6476</td>
<td>Rehabilitation of the Deaf and Hearing Impaired: Assessment and Evaluation</td>
<td>SPA 2001, SPA 4333, SPA 4363, SPA 4050, EGC 6205, EGC 6374 or CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6477</td>
<td>Rehabilitation of the Deaf and Hearing Impaired: Counseling and Case Management</td>
<td>EGC 6476, EGC 6727, SPA 6335, or CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6494</td>
<td>Seminar in Principles and Practices of Rehabilitation Counseling II</td>
<td>EGC 5493, EGC 5850</td>
<td>3</td>
</tr>
<tr>
<td>EGC 6498</td>
<td>Theoretical and Experiential Approaches to Counseling the Alcohol Abuser</td>
<td>EGC 5496 and CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6556</td>
<td>Group Work in Rehabilitation Counseling</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6567</td>
<td>Advanced Group Work in Rehabilitation Counseling</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6727</td>
<td>Interpersonal Aspects of Rehabilitation Counseling II</td>
<td>EGC 5725</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6767</td>
<td>Research in Rehabilitation</td>
<td>CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6851</td>
<td>Practicum II</td>
<td>EGC 5493, EGC 5850</td>
<td>1</td>
</tr>
<tr>
<td>EGC 6885</td>
<td>Internship in Rehabilitation</td>
<td>CI</td>
<td>8</td>
</tr>
<tr>
<td>EGC 6906</td>
<td>Independent Study</td>
<td>CI</td>
<td>var.</td>
</tr>
<tr>
<td>EGC 6915</td>
<td>Directed Research</td>
<td>GR: Master's level</td>
<td>var.</td>
</tr>
<tr>
<td>EGC 6934</td>
<td>Seminar in Rehabilitation Counseling</td>
<td>CI</td>
<td>1-4</td>
</tr>
<tr>
<td>EGC 6947</td>
<td>Rehabilitation of the Deaf and Hearing Impaired: Assessment and Evaluation</td>
<td>SPA 2001, SPA 4333, SPA 4363, SPA 4050, EGC 6205, EGC 6374 or CI</td>
<td>4</td>
</tr>
<tr>
<td>EGC 6971</td>
<td>Thesis: Master's</td>
<td>CI</td>
<td>var.</td>
</tr>
<tr>
<td>SOC 4162</td>
<td>The City and Man</td>
<td>CI</td>
<td>3</td>
</tr>
<tr>
<td>SOC 4164</td>
<td>Social Issues of Our Time</td>
<td>CI</td>
<td>3</td>
</tr>
<tr>
<td>SOC 3122</td>
<td>Social Science Statistics</td>
<td>CI</td>
<td>3</td>
</tr>
<tr>
<td>SOC 5934</td>
<td>Selected Topics</td>
<td>CI</td>
<td>1-3</td>
</tr>
<tr>
<td>SOC 6900</td>
<td>Directed Readings</td>
<td>CI</td>
<td>1-3</td>
</tr>
<tr>
<td>SOC 6910</td>
<td>Directed Research</td>
<td>CI</td>
<td>var.</td>
</tr>
</tbody>
</table>

**Social Sciences (Interdisciplinary)**


**Undergraduate Courses**

- SSI 4162 The City and Man
- SSI 4164 Social Issues of Our Time
- STA 3122 Social Science Statistics

**Graduate Courses**

- SSI 5934 Selected Topics
- SSI 6900 Directed Readings
- SSI 6910 Directed Research

**Social Work**

Chairperson: P. L. Smith; Professor: G. St. L. O'Brien; Associate Professors: W. S. Hutchison, Jr., F. C. Johnson, J. C. Rennick, P. L. Smith; Assistant Professors: R. Martin, R. Willetts, B. L. Yegidis; Visiting Faculty: Professor: W. Vassey; Instructor: A. J. Floyd; Courtesy Faculty: Professor: J. Kosberg; Instructor: L. Middleton
### UNDERGRADUATE COURSES

**SOW 3101 HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT I**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 3101</td>
<td>Human Behavior and the Social Environment I</td>
<td>3</td>
</tr>
</tbody>
</table>

**PR:** All pre-core courses and SOW 3203. Restricted to Social Work majors; others by Department permission. An integrating human behavior-social environment course emphasizing dynamics of behavior and environment factors as they relate to social work practice with individuals, and families and groups.

**SOW 3102 HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT II**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 3102</td>
<td>Human Behavior and the Social Environment II</td>
<td>3</td>
</tr>
</tbody>
</table>

**PR:** SOW 3101. Restricted to Social Work majors; others by Department permission. An integrating course emphasizing dynamics of behavior and environmental factors as they relate to social work practice with organizations and communities.

**SOW 3203 INTRODUCTION TO SOCIAL WELFARE AND SOCIAL WORK**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 3203</td>
<td>Introduction to Social Welfare and Social Work</td>
<td>4</td>
</tr>
</tbody>
</table>

An introductory course tracing the development of the American social welfare system and the development of social work as a major profession within that system.

**SOW 3403 RESEARCH AND STATISTICS FOR SOCIAL WORK**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 3403</td>
<td>Research and Statistics for Social Work</td>
<td>4</td>
</tr>
</tbody>
</table>

**PR:** All pre-core courses and SOW 3203. Restricted to Social Work majors; others by Department permission. An advanced policy course taking an analytical approach to contemporary social welfare policy issues and current social welfare programs.

**SOW 4341 MULTI-METHODS OF SOCIAL WORK PRACTICE I: MICRO-SYSTEM INTERVENTION**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 4341</td>
<td>Multi-Methods of Social Work Practice I: Micro-System Intervention</td>
<td>5</td>
</tr>
</tbody>
</table>

**PR or CR:** SOW 3101; SOW 3403. Restricted to Social Work majors; others by Department permission. Practice course emphasizing development of skills from practicum knowledge. Intervenive methods with individuals, families and small groups. Some agency field work required.

**SOW 4343 MULTI-METHODS OF SOCIAL WORK PRACTICE II: MACRO-SYSTEM INTERVENTION**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 4343</td>
<td>Multi-Methods of Social Work Practice II: Macro-System Intervention</td>
<td>5</td>
</tr>
</tbody>
</table>

**PR:** All pre-core courses, SOW 4341, SOW 4233, and SOW 3102 may be taken as PR or CR. Restricted to Social Work majors; others by Department permission. Second practice course emphasizing intervention at the community and organizational level. Builds upon theoretical and practical content of SOW 4341. Some agency field work required.

**SOW 4361 SENIOR SEMINAR**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 4361</td>
<td>Senior Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

**PR:** All pre-core courses all core Social Work courses, except that SOW 4510 may be taken as CR. This course is the final course taken in the BSW curriculum. It is restricted to Social Work majors in their final stages of the senior year. The course serves as a means for assisting the student in synthesizing and integrating his/her learning experiences in the BSW program.

**SOW 4510 FIELD PLACEMENT**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOW 4510</td>
<td>Field Placement</td>
<td>10</td>
</tr>
</tbody>
</table>

**PR:** Completion of all Social Work core courses except SOW 4361. Restricted to Social Work majors in Senior year. Supervised field placement in a social welfare organization consisting of 35 hours per week in the field and 3 hours per week in an integrated practice seminar which constitutes the third and final course in the practice sequence.

**SOW 4900 DIRECTED READINGS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>SOW 4900</td>
<td>Directed Readings</td>
<td>1-6</td>
</tr>
</tbody>
</table>

**PR:** Completion of four social work courses including SOW 3403, upper division standing, and Department permission. Content dependent upon student interest and ability. A contract will be jointly developed by student and instructor specifying nature of work to be completed and approved by Program Chairperson. May be repeated up to 6 credit hours.

**SOW 4930 VARIABLE TOPICS IN SOCIAL WORK**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>SOW 4930</td>
<td>Variable Topics in Social Work</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Restricted to Social Work majors; others by Department permission. Variable title courses to expand on the four sequence areas in the Social Work core curriculum. Allows focus on areas relevant to students' educational interest.

### UNDERGRADUATE COURSES

**SOW 6105 NORMATIVE DEVELOPMENT AND THE SOCIAL ENVIRONMENT**

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>SOW 6105</td>
<td>Normative Development and the Social Environment</td>
<td>4</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Interaction of biological, psychological, social, and cultural environments on growth and adaptation.

**SOW 6121 THEORETICAL PERSPECTIVES ON DYSFUNCTIONING**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>SOW 6121</td>
<td>Theoretical Perspectives on Dysfunctioning</td>
<td>3</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Addresses the spectrum of psychosocial responses to disease, injury, developmental disabilities and streses of both chronic and acute states; identifies major forms of psychopathology and central modes of adaptation.

**SOW 6126 DYNAMICS OF DYSFUNCTIONING IN CHILDREN AND YOUTH**

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>SOW 6126</td>
<td>Dynamics of Dysfunctioning in Children and Youth</td>
<td>2</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Specific disease, injury and stress states; etiology and typical response patterns. Parallels dysfunctional states addressed concurrently in treatment course.

**SOW 6129 DYNAMICS OF DYSFUNCTIONING IN THE ADULT AND ELDERLY**

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>SOW 6129</td>
<td>Dynamics of Dysfunctioning in the Adult and Elderly</td>
<td>2</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Study of specific dysfunctional states; etiology and typical response patterns. Parallels dysfunctional states addressed concurrently in treatment course.

**SOW 6235 TRENDS AND ISSUES IN SOCIAL POLICY AND SERVICES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>SOW 6235</td>
<td>Trends and Issues in Social Policy and Services</td>
<td>4</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Examines historical themes and analyzes programmatic development of present American social welfare system. Attention given to policy-clinical practice interaction.

**SOW 6356 TREATMENT METHODS WITH CHILDREN AND YOUTH**

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>SOW 6356</td>
<td>Treatment Methods with Children and Youth</td>
<td>2</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Differential psychosocial treatment related to various dysfunctional states with children and youth. Parallels dysfunctional states addressed concurrently in treatment course.

**SOW 6359 TREATMENT METHODS WITH ADULTS AND THE ELDERLY**

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<th>Code</th>
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<tbody>
<tr>
<td>SOW 6359</td>
<td>Treatment Methods with Adults and the Elderly</td>
<td>2</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Differential psychosocial treatment related to various dysfunctional states encountered in field with adults and the elderly. Parallels dysfunctional states addressed concurrently in treatment course.

**SOW 6360 SOCIAL WORK PRACTICE: THE PSYCHOSOCIAL PERSPECTIVE**

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<tr>
<td>SOW 6360</td>
<td>Social Work Practice: The Psychosocial Perspective</td>
<td>5</td>
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</table>

**PR:** Consent of chairperson. Historical development of knowledge, skills and ethics of the profession. Psychosocial model of clinical practice is emphasized. Primary focus on individual modality.

**SOW 6362 INDIVIDUAL, FAMILY AND GROUP TREATMENT I**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>SOW 6362</td>
<td>Individual, Family and Group Treatment I</td>
<td>3</td>
</tr>
</tbody>
</table>

**PR:** Consent of chairperson. Continuation of SOW 6362. Primary focus on psychosocial model of group treatment. Comparison with individual and family modality.

**SOW 6404 SOCIAL WORK MEASUREMENT AND DESIGN**

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<tr>
<td>SOW 6404</td>
<td>Social Work Measurement and Design</td>
<td>3</td>
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**PR:** Consent of chairperson. Assumes competence in fundamental techniques of descriptive and inferential statistics. Organized around modules and structured exercises designed to stimulate research issues and processes found in social work settings.

**SOW 6432 MICRO AND MACRO RESEARCH EVALUATION**

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<th>Code</th>
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<tbody>
<tr>
<td>SOW 6432</td>
<td>Micro and Macro Research Evaluation</td>
<td>3</td>
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</table>

**PR:** Consent of chairperson. Projects and exercises designed to simulate typical practice problems are coordinated. Prepares student for the field research project.

**SOW 6435 FIELD RESEARCH**

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>SOW 6435</td>
<td>Field Research</td>
<td>3</td>
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</tbody>
</table>

**PR:** Consent of chairperson. Formal mechanism, under Departmental supervision, for conducting required agency-based research on some aspect of the agency's target population or service delivery system. (S/U only.)

**SOW 6534 FIELD INSTRUCTION I**

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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>SOW 6534</td>
<td>Field Instruction I</td>
<td>4</td>
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</table>

**PR:** Consent of chairperson. Supervised field instruction in a social service agency consisting of approximately 20 hours per week plus a 2 hour practice seminar.
SOW 6535 FIELD INSTRUCTION II (6)
PR: Consent of chairperson. Supervised field instruction in a social service agency consisting of approximately 32 hours per week plus a 2 hour practice seminar.

SOW 6536 FIELD INSTRUCTION III (4)
PR: Consent of chairperson. Supervised field instruction in a social service agency consisting of approximately 20 hours per week plus a 2 hour practice seminar.

SOW 6931 SELECTED TOPICS IN SOCIAL WORK (1-4)
PR: CI. Restricted to MSW students; others by Department permission. Variable topic courses will selectively expand on the four sequence areas in the social work curriculum.

SOCIOLOGY


UNDERGRADUATE COURSES

DHE 4101 POPULATION (3)
PR: SOC 2000 or CI; upper division standing. Sociological determinants of fertility, mortality and migration; theories of population change.

LEI 4163 LEISURE IN SOCIETY (3)
Facts and trends of changing leisure-time patterns in the USA and other countries; various conceptualizations of leisure; relationships on non-work time to work attitudes, personality, family, community, sub-cultures, religion, value systems, social class, and the functions of government.

LEI 4167 SPORT IN SOCIETY (3)
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.

MAE 3011 MARRIAGE (3)
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.

MAF 3501 THE FAMILY (3)
PR: SOC 2000 or CI. Principles of family organization, social adjustment, and control. Maturation, socialization, and stability of the family.

SOC 2090 CONTEMPORARY SOCIAL PROBLEMS (3)
Application of sociological concepts and principles to the description and analysis of major social problems of modern societies. Does not count for sociology major credit.

SOC 2000 INTRODUCTION TO SOCIOLOGY (3)
Nature and application of sociological concepts, theories, and methods; analysis of societies, associations and groups; social processes and social change.

SOC 2484 CAREERS IN SOCIOLOGY (1)
PR: One course in sociology. An examination of sociology as a career base and 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 sub-fields of specialization and a brief introduction to the courses taught in the department will lead to the student's making a tentative program schedule for his major. The value of sociology to the individual as a self-actualizing person of unique worth will be stressed. (S/U only.)

SOC 3211 SOCIOLOGY OF RELIGION (3)
PR: SOC 2000 or CI. Types, sources, and functions of religious behavior. Religious behavior in relation to other aspects of personality and culture.

SOC 3410 SOCIAL STRATIFICATION (3)
PR: SOC 2000 or CI. Social status and social stratification, social class as a factor in behavior, social mobility.

SOC 3422 SOCIAL ORGANIZATION (3)
PR: SOC 2000 or CI. Social organization in the broadest sense, including institutions and associations, as well as variations in role and status.

SOC 3500 SOCIAL INVESTIGATION (3)
PR: SOC 2000, STA 3122. Methods and techniques of social research. Design of sociological studies, collection of data, and interpretation and results.

SOC 3612 FOUNDATIONS OF THEORY (3)
PR: SOC 2000 or CI. Consideration of selected theories in sociology and procedures of systematic theory construction.

SOC 3695 COMMENTARY FILM MAKING IN THE SOCIAL SCIENCES (3)
PR: Major in the College of Social and Behavioral Sciences and CI 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 in film. Film planning, camera techniques, editing silent film, and the utilization of the independent sound (tape cassettes) in the commentary film. Ethics of film making.

SOC 3696 LABORATORY WORK IN COMMENTARY FILM MAKING IN THE SOCIAL SCIENCES (1)
PR: SOC 3695, CR in a course in the social and behavioral sciences with instructor's approval to enable student to make a film in lieu of some other course requirement. A continuation of lab and field work in the making of commentary films. Camera, editorial and problems of independent sound solved in the context of making a film in one of the social sciences. Does not count for sociology major credit. May be repeated for a maximum of three credits. (S/U only.)

SOC 3745 RACIAL AND ETHNIC RELATIONS (3)
PR: SOC 2000 or CI. Comparative study of interracial relations, social tensions, attitudes, and modes of adjustment in various areas of the world.

SOC 3800 SOCIAL PSYCHOLOGY (3)
PR: PSY 2012 or SOC 2000. Behavior of the individual human being as affected by social and cultural influences of modern society.

SOC 4130 JUVENILE DELIQUENCY (3)
PR: SOC 2000 or CI; upper division standing. Theories of delinquency, patterns of delinquent behavior, methods of control and treatment.

SOC 4500 CRIMINOLOGY (3)
PR: SOC 2000 or CI; upper division standing. Etiology of criminal behavior; law enforcement, crime in the United States; penology and prevention.

SOC 4221 POLITICAL SOCIOLOGY (3)
PR: SOC 2000 or CI. An examination of the social factors that affect government, politics, and political behavior.

SOC 4230 SOCIOLOGY OF MEDICINE (3)
PR: SOC 2000 or CI. An examination of the major theoretical and methodological tools used by sociologists in studying medical care. A representative sampling of medical sociological studies will be reviewed and discussed.

SOC 4261 SOCIOLOGICAL IMPLICATIONS OF INDUSTRIALIZATION (3)
PR: SOC 2000 or CI. Socio-cultural elements which define and accompany the process of industrialization as observed in modern industrial nations.

SOC 4262 OCCUPATIONS AND PROFESSIONS (3)
PR: Upper division standing or CI. A comparative analysis of professions, particularly medicine, law, teaching, allied health professions, engineering. Focus on process professionalizing service occupations like police work, business management, public administration and social work.

SOC 4316 URBAN SOCIOLOGY (3)
PR: SOC 2000 or CI; upper division standing. The social structure of the community in modern industrial societies. Analysis of community change.

SOC 4320 COMPARATIVE RURAL SOCIOLOGY (3)
PR: SOC 2000 or CI. The study of rural life in the United States; compares the situation in the United States with that of other societies as well as other times in history; some aspects of rural peasant societies and experiments in rural community formation.

SOC 4402 SOCIETY IN TRANSITION (3)
PR: Introduction to Sociology and upper level standing. An analysis of the forces for change in contemporary society, utilizing a sociological perspective.
SOC 4531 COMPUTERS IN SOCIOLOGICAL RESEARCH (2)
PR: COC 3500 and STA 3122 or equivalent. Introduction to the uses of computers in sociological research. Major emphasis is upon the use of statistical packages (principally SPSS) in data analysis.

SOC 4651 SOCIOLOGY OF THE ARTS (3)
PR: SOC 2000 or CI; upper division standing. The creation, distribution and use of arts from a sociological perspective; the social roles involved.

SOC 4850 COLLECTIVE BEHAVIOR (3)
PR: SOC 2000 or CI; upper division standing. Study of the development of group and mass behavior—crowds, social movements.

SOC 4910 INDIVIDUAL RESEARCH (1-3)
PR: Four courses in sociology, including SOC 3500, upper division standing, at least 3.0 overall GPA, or CI. Content dependent upon interest and competence of student. A contract specifying the work to be done must be completed and signed by both the student and the chairperson of the department before registration for this course will be permitted. May be repeated for credit. Up to 3 credits may be counted towards meeting major electives requirement.

SOC 4930 TOPICS IN SOCIOLOGY (3)
PR: 12 semester hours in Sociology and prior CI. May be repeated for credit. See class schedule for content.

SOC 4935 SENIOR SEMINAR (3)
For majors in sociology or other social sciences. Major issues in sociology, stressing theory and research.

GRADUATE COURSES

MAF 6621 FAMILY ANALYSIS (3)
PR: Course in Family or CI. Theory of interpersonal relations and interaction in the nuclear family. Analysis of functions and roles.

SOC 5265 INDUSTRIAL SOCIOLOGY (3)
PR: SOC 2000 or CI; upper division standing. Interaction, communication and authority in economic organizations; the factory as a social system.

SOC 5405 SOCIAL CHANGE (3)
PR: SOC 2000 or CI; upper division standing. Major theories of social and cultural change, and mechanisms of change in various societies.

SOC 5804 SOCIAL INTERACTION (3)
PR: SOC 3800 or CI; upper division standing. Interpersonal influence, complex behavior, role, conflict, and social situational factors.

SOC 5825 SOCIOLOGY OF SMALL GROUPS (3)
PR: SOC 2000 or CI; upper division standing. Theory of small group structures, mechanics of interaction, observation of small groups.

SOC 5949 SOCIOLOGICAL INTERNSHIP (1-6)
PR: Senior or graduate standing in Sociology plus CI. Supervised placement in a community organization or agency for a minimum of 10 hours of volunteer work per week, and a weekly seminar on applying sociological skills and methods in the placement setting. May be repeated up to 6 credit hours. (S/U only.)

SOC 6106 DEVIANCE & CONTROL (3)
PR: Course in criminology or juvenile delinquency or CI. Theories of control and deviance with research application in problem areas.

SOC 6302 COMMUNITY ANALYSIS (3)
PR: Course in Urban Sociology or CI. Theories of community and community organization. Methods of community study; problems of urban areas.

SOC 6426 COMPLEX ORGANIZATIONS (3)
PR: Course in Social Organizations or CI. Organizational Theory, bureaucratic models, authority, power legitimation, and types of formal organization.

SOC 6502 METHODS OF RESEARCH (3)
PR: Course in Social Investigation or CI. Logic and practice of research; problems of observation and data collection, data processing, and evaluation.

SOC 6531 STATISTICAL TECHNIQUES (4)
PR: STA 3122 or CI. Logic and application of parametric and non-parametric statistical analysis for sociological data.

SOC 6606 CONTEMPORARY SOCIOLOGICAL THEORY (3)
PR: Undergraduate course in sociological theory or CI. Emphasizes logical and conceptual dimensions of theory and theory construction.

SOC 6699 THE COMMUNICATION OF SOCIOLOGY (1)
PR: SOC 6502, SOC 6526, SOC 6606, or CI. Designed to help student define and formalize more effective efforts at communicating sociology. Majors only.

SOC 6805 SOCIAL PSYCHOLOGY SEMINAR (3)
PR: Course in Social Psychology or CI. Stresses contemporary applications of social psychological theory and empirical research.

SOC 6909 INDEPENDENT STUDY (var.)
Independent study in which student must have a contract with an instructor. Repeatable; (S/U only.)

SOC 6912 DIRECTED RESEARCH (var.)
PR: GR. Master's level. Repeatable. (S/U only.)

SOC 6933 SPECIAL TOPICS-SOCIOLOGY (3)
PR: CI. Content varies according to interests of students and instructor. May be repeated for credit.

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

WOMEN'S STUDIES PROGRAM

Director: J. Ochshorn; Professor: J.H. Williams; Associate Professors: M. Myerson, J. Ochshorn, J.B. Snook

UNDERGRADUATE COURSES

ANT 4302 WOMEN IN CROSS-CULTURAL PERSPECTIVE (3)
PR: ANT 3410 or CI. Focuses on various theories, models and beliefs about male-female behaviors and interactions in human cultures throughout history and in various societies in the world today. (Also offered under Anthropology.)

LIT 3383 IMAGE OF WOMEN IN LITERATURE (4)
An historical literary analysis of stereotyped and liberated female images from Sappho through the emergence of the women's movement. (May also be taken for credit in English.)

POS 4693 WOMEN AND LAW (4)
Issues concerning the legal aspects of sex and sex-based discrimination as embodied in statutory and case law. Open to majors and non-majors. (May also be taken for credit in Political Science.)

REL 3145 WOMEN AND RELIGION (4)
Status and roles of women as compared to men in the Judeo-Christian tradition. Contemporary issues of feminist theology, and the controversies surrounding them. (May also be taken for credit in Religious Studies.)

SOP 3742 PSYCHOLOGY OF WOMEN (3)
Theories of female personality. Current research on socialization, sexuality, reproduction. Emerging lifestyles and developmental tasks of the life cycle. (May also be taken for credit in Psychology.)

WST 2010 INTRODUCTION TO WOMEN'S STUDIES I (3)
Survey of major issues relevant to the female experience. The women's movement: historical, psychological, sociological, anthropological perspectives.

WST 2011 INTRODUCTION TO WOMEN'S STUDIES II (3)
Survey of major issues relevant to the female experience: marriage and the family, sexuality, work, creativity.

WST 3210 WOMEN IN WESTERN CIVILIZATION I (4)
Survey of women in the ancient Near East, ancient Greece, ancient Rome, early Middle Ages. Origins of Western attitudes toward sex roles, female sexuality, relation of power to gender. (May also be taken for credit in History.)

WST 3220 WOMEN IN WESTERN CIVILIZATION II (4)
Survey of European women from the late Middle Ages to the twentieth century: differing consequences of historical change for women and men. (May also be taken for credit in History.)

WST 3275 WOMEN IN THE DEVELOPING WORLD (3)
Survey of status of women in Asia, Africa, Latin and Caribbean America, compared to that in USA, Canada, West Europe, Marxist-Leninist countries. (May also be taken for credit in International Studies.)

WST 3360 MEN AND SEXISM (4)
Women in which sex role conditioning affects the lives of men. Factors in this conditioning, and alternatives to masculine sex role models.

WST 4309 THE FEMALE EXPERIENCE IN AMERICA (4)
PR: WST 2010, or WST 2011, or CI. The female experience in America, in historical context, viewed through the writings of women of various classes, races, ethnic groups. Current research on American women by feminist historians. (May also be taken for credit in History.)
WST 4310 FEMINISM IN AMERICA (4)
PR: WST 2010, or WST 2011, or CI. Emergence of the women's movement in 19th century America: origins, theoretical and practical issues, relation to European feminism. Sources, issues, implications of 20th century feminism. (May also be taken for credit in History.)

WST 4320 WOMAN'S BODY/WOMAN'S MIND (4)
PR: WST 2010, or WST 2011, or CI. The influence of the health care system on the process which socializes people to traditional sex roles.

WST 4380 HUMAN SEXUAL BEHAVIOR (4)
The dynamics of human sexuality: biological, constitutional, cultural, and psychological aspects. The range of sexual behavior across groups. Sources of beliefs and attitudes about sex, including sex roles and sexuality.

WST 4900 DIRECTED READINGS (1-3)
PR: Registration requires instructor's written consent and signed contracts from instructor of choice. To provide advanced students with interdisciplinary research experience in areas of specific interest. May be repeated up to 6 credit hours.

WST 4930 SELECTED TOPICS (1-4)
PR: WST 2010 or CI. Study in special areas such as Women Writers, Southern Women, Black Women in America, Group Communications.

WST 4935 SEMINAR IN WOMEN'S STUDIES (3)
PR: WST 2010 or CI. In-depth study of research in one or more areas of topical interest to students and staff. Research involvement by students required.
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Associate Dean .................................... TBA
Assistant Dean ..................................... TBA

Chairpersons:
Chemical and Mechanical ........................ LINUS A. SCOTT
Civil Engineering and Mechanics ............... MELVIN W. ANDERSON
Coordinator of Advising ........................ GEORGE R. CARD
Electrical Engineering ........................... MERLE R. DONALDSON
Industrial and Management Systems Engineering ...................... G. KEMBLE BENNETT

Directors:
Technology (Acting) ............................. G. KEMBLE BENNETT
CEDAR ................................................ MICHAEL KOVC
STAC ............................................... ROBERT LANDRY
Industrial Programs .............................. TBA

College of Fine Arts

Dean .................................................. HARRISON COVOVINGTON
Assistant Dean ..................................... JOHN COKER
Assistant Dean/Coordinator of Advising ........ JOHN SMITH

Chairpersons:
Art ................................................... GEORGE PAPPAS
Dance ................................................ LARRY BERGER
Music ................................................ LARRY CULLISON
Theatre ............................................ NANCY COLE

Director:
Fine Arts Events (Associate Director) ........ LLOYD BRAY
College of Medicine

Dean and Director of the Medical Center ................................ ANDOR SZENTIVANYI
Assistant Director of the Medical Center/Deputy Dean for the College of Medicine ............. JAMES A. HALLOCK
Assistant Director, Medical Center .................. WILLIAM A. SODeman, JR.
Deputy Dean, Graduate Studies and Research .................. CARLETON H. BAKER
Deputy Dean, Faculty Relations .................. JACK W. HICKMAN
Associate Dean, Continuing Medical Education .......... FRANK J. COZZETTO
Associate Dean, Extramural Affairs .................. JANIFER JUDISCH
Associate Dean for Admissions .................. JULIAN J. DWORNIK
Associate Dean for VA Affairs .................. JOHN T. RIGGIN, JR.
Associate Dean for Fiscal Management and Planning ........ GREGORY NICOLOSI
Associate Dean for Special Projects .................. WILLIAM E. RUSH
Assistant Dean Student Affairs .................. ALLAN I. LEIBOWITZ

Chairpersons:

Anatomy ......................................... JOHANNES A.G. RHODIN
Biochemistry ........................................... JOSEPH G. CORY
Comprehensive Medicine .................. WILLIAM A. SODeman, JR.
Family Medicine .................. CHARLES E. AUCREMANN
Internal Medicine .................. ROY H. BEHNE
Medical Microbiology .................. HERMAN FRIEDMAN
Obstetrics and Gynecology ........... WILLIAM E. LAYDEN
Ophthalmology .................. PHILIP SPIEGEL
Orthopedic Surgery (Acting) ........... JOHN U. BALIS
Pathology (Acting) .................. LEWIS A. BARNES
Pharmacology .................. ANDOR SZENTIVANYI
Pediatrics .................. CARLETON H. BAKER
Psychiatry .................. ANTHONY READING
Radiotherapy .................. ARTHUR D. GRAHAM
Surgery .................. ROGER T. SHERMAN

Directors:

Laboratory Animal Medicine ............ LOUIS R. NELson
Medical Library .................. FRED BRYANT

College of Natural Sciences

Dean ..................................... JAMES D. RAY JR.
Assistant Dean for Undergraduate Affairs. ROSEMARY M. MORLEY

Chairpersons:

Biology ................................................. STEWART L. SWIHART
Chemistry .................................................. JEFFERSON C. DAVIS, JR.
Geology ............................................ RICHARD A. DAVIS, JR.
Marine Science .................. WILLIAM M. SACKETT
Mathematics .................. MANOUG N. MANOULIAN
Physics (Acting) .................. ROBERT W. FLynn

Directors:

Botanical Gardens .................. FREDERICK B. ESSIG
Herbarium .................. RICHARD P. WUNDERLIN
Medical Technology ........... EUGENE D. OLSen
Planetarium .................. JOE A. CARR
Pre-Medical Advising Committee .................. ROSEMARY M. MORLEY

College of Nursing

Dean .............................................. GWENDOLINE R. MAC DONALD
Assistant Dean for Undergraduate Program ........ CANDACE M. BURNS
Assistant Dean for Student Personnel .................. S. JOAN GREGORY
Assistant Dean for Graduate Education and Research .................. ONA Z. RIGGIN

College of Social and Behavioral Sciences

Dean .................................................. TRAVIS J. NORTHCUTT, JR.
Associate Dean .................................. SUSAN STOUDINGER
Assistant Dean .................. EDWARD SILBERT
Coordinator of Advising .................. EDWARD SILBERT

Chairpersons:

Anthropology .................. GILBERT KUSHNER
Communicology ........... STEWART KINDE
Criminal Justice .................. HAROLD VETTER
Economics .................. JOHN ROWE
Geography .................. ROBERT FUSON
Gerontology .................. THOMAS RICH
History .................. RICHARD N. TAYLOR
Interdisciplinary Social Science ........... ROBERT CATLIN
Political Science .................. CALVIN PINKARD
Psychology (Acting) .................. DOUGLAS NELSON
Rehabilitation Counseling .................. PHILIP SMITH
Social Work .................. ROY FRANCIS
Sociology .................. ROY FRANCIS

Directors:

Afro-American Studies Program .................. FESTUS OHAEGBULAM
Human Resources Institute .................. HARVEY MOORE
International Studies Program .................. MARK ORR
Off-Campus Term Program .................. KEITH LUPTON
Women's Studies Program .................. JUDITH OCHSHORN

School of Continuing Education

Dean .................................................. JERRY W. KOEHLER

Directors:

Administrative Services .................. LARRY ROMIG
English Language Center .................. CAROL CARGILL-POWER
Weekend College Program .................. RICHARD N. TAYLOR
Division of Conferences and Institutes .................. TBA
Division of Lifelong Learning .................. TBA
Division of Professional Development .................. TBA
Division of Special Degree Programs .................. KEVIN E. KEARNEY

Graduate School

Dean of the Graduate School and Coordinator of University Research ........ CARL D. RIGGS
Director, Sponsored Research .................. A. RILEY MACON

Undergraduate Studies

Dean ............................................... WILLIAM H. SCHEUERLE
Director, Academic Services .................. THELMA D. BENTON
Coordinator, Evaluation and Testing .................. JANE REED
Coordinator, Academic Advising .................. HARRIET SELIGSOHN
Coordinator, Handicapped Services .................. RUSS CAMPBELL
Coordinator, Project Thrust .................. MACK DAVIS
Coordinator, Special Services .................. MARY LINDSEY
Director, Community College Relations .................. FRANK H. SPAIN
Director, Cooperative Education and Placement .................. GLENDA F. LENTZ
Director, Honors Program (Acting) .................. DAVID P. SCHENCK
Registrar .................. DOUGLAS B. MAC CULLOUGH
Director, Records and Registration .................. STEVEN MAUSERT
Military Science/ROTC ..........................................
Army ROTC .................. MAJ. MILTON CORLEY
Air Force ROTC ..........................................
TBA
Regional Campus Affairs

Dean/Associate Vice President for Academic Affairs .................................. JAMES B. HECK
Associate Dean .................................................................................................. BERNARD A. MACKY

USF at Fort Myers

Associate Dean/Director, Administration and Finance .................................. DONALD J. ANDERSON
Associate Director, Student Affairs .................................................................... DAVID C. JORDAN
Librarian ............................................................................................................... JEAN R. ANDERSON

USF at Sarasota

Campus Dean ........................................................................................................ ROBERT V. BABYLSKI
Director, Administrative Affairs .......................................................................... CHARLES C. HARRA
Director, Student Affairs ...................................................................................... WILLIAM KLINE
Director, Records and Registration .................................................................... NANCY E. FERRARO
Director, Public Affairs ....................................................................................... FURMAN C. ARTHUR
Librarian ............................................................................................................... ALTHEA JENKINS
Coordinator, Academic Affairs ........................................................................... SARA M. HOWELL

New College of USF

Provost ..................................................................................................................... EUGENE LEWIS
Assistant Provost .................................................................................................... JEAN MATHIER
Director, New College Admissions ..................................................................... CARLOS NOYA

Chairpersons:

Humanities .............................................................................................................. JAMES G. MOSELEY, JR.
Natural Sciences ..................................................................................................... PETER A. KAZAKS
Social Sciences ...................................................................................................... LASZLO DEmE

USF at St. Petersburg

Campus Dean .......................................................................................................... JOHN HINZ
Deputy, Academic Affairs ...................................................................................... WILLIAM GARRETT
Director, Administration and Finance .................................................................. HERMAN J. BRAMES
Director, Student Affairs ....................................................................................... DONALD A. HANEY
Librarian ................................................................................................................. SAM FUSTUKJIAN

ADMINISTRATION AND FINANCE

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Associate Vice President ....................................................................................... GLENNDON E. CLAYTON
Assistant Vice President ......................................................................................... RICKARD C. FENDER
Director, Facilities Planning ................................................................................... MICHAEL H. PATTERSON
Director, Space Utilization and Analysis .............................................................. LILLIAN C. HOLTMAN
Director, University Budgets ................................................................................ CLAIRE S. ROBINSON
Director, Institutional Research ............................................................................. TBA
Director, Computer Research Center ................................................................. CHARLES E. FISHER
University Comptroller .......................................................................................... ERIC L. WALDEN
Director, Environmental Health and Safety ......................................................... JOSEPH S. WARNER
Director, Physical Plant ......................................................................................... CHARLES E. BUTLER
Director, Procurement ......................................................................................... KEITH SIMMONS
Director, University Police ................................................................................... PAUL A. URAVICH
Director, Regional Data Center ............................................................................. TBA

EMPLOYEE RELATIONS AND LEGAL AFFAIRS

Vice President ................................................................. STEVEN G. WENZEL
Associate General Counsel .................................................................................. CARLA JIMENEZ
Associate General Counsel .................................................................................. BRYAN S. BURGESS
Assistant General Counsel .................................................................................... TBA
Director, Equal Opportunity Affairs .................................................................. ROSALIE A. HILL
Director, Human Resource Development (Acting) ............................................... CYNTHIA A. BOLLINGER
Director, Labor/Management Relations ............................................................. ROLAND E. CARRINGTON
Director, University Personnel Relations ........................................................... PAULA N. KNAUS

STUDENT AFFAIRS

Vice President ............................................................... DANIEL R. WALBOLT
Associate Vice President ...................................................................................... CHARLES F. HEWITT
Assistants to the Vice President ............................................................................. GORDON BIBB
Director, Admissions ............................................................................................. LINDA ERICKSON
Director, Counseling Center for Human Development ..................................... WILLIAM ANTON
Director, Financial Aids ......................................................................................... GEORGE H. GOLDSMITH
Coordinator, Veterans Affairs ............................................................................... MEREDITH DUBE
Director, Auxiliary Services ................................................................................ RAYMOND C. KING
Director, Recreational Sports ................................................................................. ANDREW HONKER
Director, Student Health Services ....................................................................... MARIA ANDERSON
Director, Student Publications ............................................................................... LEO STALNAKER
Director, Sun Dome .............................................................................................. MICHAEL BARBER
Director, University Center (Acting) ..................................................................... JAMES CROUCH

UNIVERSITY RELATIONS

Vice President ................................................................. JOSEPH F. BUSTA, JR.
Director, Alumni Affairs ......................................................................................... JOSEPH M. TOMAINO
Director, Community Relations ............................................................................ ANN M. ROSS
Director, Development ......................................................................................... DONALD B. SWEGAN
Director, Governmental Relations ...................................................................... BETTY B. CASTOR
Director, Media Relations and Publications ....................................................... MICHAEL K. SIMMONS
Special Assistant to the Vice President .............................................................. GORDON GIBBNS
FACULTY AND ADMINISTRATIVE STAFF

All members of the University of South Florida faculty and administrative staff, including teaching, research, administrative and professional personnel are listed below in alphabetical order. The listing includes name, current rank and field, first year of continuous appointment to any position in the institution, degrees, and institution and year of terminal degree, as of August 14, 1981. (A semicolon between degrees indicates different institutions.)

ABRAM, JACQUES ........................................... Professor (Music), 1963
 Diploma with Distinction, Juilliard School of Music, 1938

ACHENBACH, KARLE ....................................... Assistant Professor (Psychiatry), 1979
 B.A.; Ph.D., University of Florida, 1966

ACKERMAN, DORIS J. ......................... University Librarian (Libraries), 1969

ADAIR, W. LEE, JR. .................................... Associate Professor (Biochemistry), 1975
 B.S.; B., Ph.D., Georgetown University, 1972

ADAMS, PATRICIA B. ......................... Assistant Professor
 B.S.N., M.N., University of Florida, 1974

ADAMS, PATRICIA W. ......................... Counselor and Adviser (Academic Services, Undergraduate Studies), 1965

AGGETT, JOHN A. .......................... Student Affairs Coordinator
 (Financial Aids, Student Affairs), 1980
 B.A.; M.S., State University of New York at Albany, 1967

AGRESTI, DAVID L. ......................... Assistant Professor (Criminal Justice), 1973
 B.A.; M.S.W.; Ed. D., Nova University, 1980

AHMED, NASIM .................................. Assistant Professor (Surgery), 1975 (part-time)
 B.A.; M.D., University of Karachi, Pakistan, 1965

AHRENS, JEAN R. ........................... Department Head and
 (Sociology), 1972

ALBERS, BRADLEY G. ..................... Assistant Professor (Music-SYCOM), 1978

ALEXANDER, LUELLA K. .................. Lecturer (Sociology), 1972
 B.A.; M.S., Ohio State University, 1966

ALEXANDER, MICHAEI D. ................. Clinical Psychologist (Counseling), 1975
 Sarasota Campus (Part time)
 B.S., M.A., Ph.D., Ohio State University, 1972

ALEXIOU, NICHOLAS G. ................ Assistant Professor (Comprehensive Medicine), 1979
 A.B.; M.P.H.; M.D., University of Vermont, 1955

ALLEFSON, FEITH M. ........................ Assistant Professor (Civil Engineering and Mechanics), 1981
 B.S.C.; M.S.C.E., Ph.D., Ohio State University, 1979

ALIX, CLETA M. ........................ Assistant University Librarian (Libraries), 1981
 B.A.; M.L.S., Louisiana State University, 1978

ALJIRE, JULIO .................................... Assistant Professor (Surgery), 1981
 B.A.; M.D., Premedical and Medical School at National University of Bogota, Columbia, S.A., 1962

ALLEN, MOL A. .................................. Associate Professor (Criminal Justice), 1979
 B.A.; L.L.B., J.D.; M.A.; Ph.D., University of Notre Dame, 1979

ALLEN, HAROLD C. ......................... Assistant Professor (Management), 1967
 B.A.; M.B.A.; Ph.D., University of Florida, 1969

ALLEN, JAMES L. ........................ Professor (Engineering), 1972
 B.E.E., M.S.E.E., Ph.D., Georgia Institute of Technology, 1966

ALLEN, LOIS P. ........................ Assistant in Research (Diabetes Center), 1980
 B.S., M.S., Florida State University, 1975

ALLEN, NOLA A. .......................... Associate Professor (Criminal Justice), 1979

ALTUS, PHILIP ................................ Associate Professor (Internal Medicine), 1976
 A.B.; M.D., State University of New York, Upstate Medical Center, 1971

AMBADE, VINEETA .......................... Visiting Assistant Professor (Mathematics), New College of USF, 1981 Sarasota Campus
 B.Sc., M.Sc.; Ph.D., Indian Institute of Technology, Delhi, India, 1975

AMMONS, J. MICHAEL .................. Assistant Research Scholar/Scientist (Electrical Engineering), 1980
 B.A., M.S., Ph.D., University of South Florida, 1980

ANDERSON, DAVID E. ................ Visiting Associate Professor (Psychiatry), 1981
 B.A.; M.A., Ph.D., University of Oregon, 1966

ANDERSON, DONALD J. ........ Continuing Education Center Administrator
 (Regional Campus Affairs), 1967 Ft. Myers Campus
 B.S.; M.A., University of South Florida, 1971

ANDERSON, E. CHRISTIAN .................. Professor (Psychological and Social Foundations Education), 1964
 B.S., M.A., Ph.D., University of Michigan, 1964

ANDERSON, EVERETT S. ................. Professor (Music), 1963
 B.M., M.M., Illinois Wesleyan University, 1937

ANDERSON, JEAN R. ................... Department Head and University Librarian (Libraries), 1975 Ft. Myers Campus
 B.A.; M.S.L.S., Columbia University, 1961

ANDERSON, MARIA J. .................. Acting Director (Student Health Services, Student Affairs), 1978
 M.D., University of Havana School of Medicine, 1961

ANDERSON, MELVIN W. ................. Professor-Chairperson (Civil Engineering and Mechanics), 1972
 B.S., M.S., Ph.D., Carnegie-Mellon University, 1967, P.E.

ANDERSON, ROBERT L. .................. Associate Professor (Marketing), 1971
 B.S., M.S.; Ph.D., North Texas State University, 1971

ANDREWS, ANTHONY P. ................ Assistant Professor (Anthropology), New College of USF, 1981 Sarasota Campus

ANDREYKA, ROBERT E. .......... Visiting Professor (Adult and Vocational Education), 1979
 B.S., M.S., Ph.D., Kent State University, 1969

ANGROSINO, MICHAEL V. ............. Associate Professor (Anthropology), 1972
 B.A.; Ph.D., University of North Carolina, 1972

ANKER, JAMES M. ........................ Acting Associate Vice President (Academic Affairs), Professor (Psychology), 1974
 A.B., M.A., Ph.D., Catholic University of America, 1957

ANTON, WILLIAM D. .................. Director (Counseling Center, Student Affairs), 1972
 B.A., M.A., Ph.D., University of South Florida, 1975

APPLEGATE, MINERVIA I. ............. Associate Professor (Nursing), 1976
 B.S.N.; M.Ed., Ed. D., Columbia University Teachers College, 1980

ARENDASH, GARY W. .................. Assistant Professor (Biology), 1981
 B.S.; Ph.D., University of California, San Francisco, 1972

ARNADE, CHARLES W. ................. Professor (Interdisciplinary Social Science), 1961
 A.B., M.A., Ph.D., University of Florida, 1955

ARSENault, RAYMOND O. .......... Assistant Professor (History), 1980
 St. Petersburg Campus
 B.A.; M.A., Ph.D., Brandeis University, 1980

ARTHUR, FURMAN C. .................. Director (Public Affairs), Sarasota Campus, 1975
 B.A., Bethany College, 1948

AUBEL, JOSEPH H. .................. Associate Professor (Physics), 1964
 B.S., Ph.D., Michigan State University 1964

AUCREMAAN, CHARLES E. .......... Associate Professor-Chairperson (Family Medicine), 1975
 A.B., M.S., M.D., Emory University School of Medicine, 1943

AZAR, HENRY A. .......................... Professor (Pathology), 1972
 B.A., M.D., American University of Beirut, Lebanon, 1952

BAGLEY, DANIEL S. III .......... Assistant Professor (Mass Communications), 1979
 B.S.; M.B.A.; Ph.D., University of Tennessee, 1977

BAILEY, OSCAR W. .................. Professor (Visual Arts), 1969
 B.A., M.F.A., Ohio University, 1958

BAKER, CARLTON H. .................. Associate Dean-Professor-Chairperson (Physiology), 1971
 B.A.; M.A., Ph.D., Princeton University, 1955

BALFOUR, G. ALAN .................. Associate Professor (Management), 1980
 B.A.; M.L.I.R.; J.D.; Ph.D., Michigan State University, 1975
DAVIS, RICHARD A., JR. ... Professor-Chairperson (Geology), and Affiliate Professor (Marine Science), 1973
B.S.; M.A.; Ph.D., University of Illinois, 1964

DAVIS, WESLEY F. ... Professor (English), 1960
A.B.; M.A.; Ph.D., Stanford University, 1970

DAVIS, CLINTON J. ... Professor (Biological Chemistry), 1968
B.S.; M.A.; Ph.D., University of California, Los Angeles, 1961

DEANS, STANLEY R. ... Professor (Physics), 1967
B.S.; M.S.; Ph.D., Vanderbilt University, 1967

DEATS, SARA M. ... Associate Professor (Arts & letters), 1970
B.A., M.A., Ph.D., University of California, Los Angeles, 1970

DEBORD, WARREN A. ... Associate Professor (Marketing), 1969
B.S.; M.A.; Ph.D., University of Illinois, 1969

DEER, HARRIETT H. ... Professor (English), 1966 St. Petersburg Campus
M.A., University of Minnesota, 1964

DEER, IRVING ... Professor (English), 1966
B.S.; M.A., Ph.D., University of Minnesota, 1955

DEESE, HILDERED ... Athletic Coach (Intercollegiate Athletics), 1979
B.S.; M.S., University of Tennessee, 1972

DEMBERGER, RICHARD ... Associate Professor (Criminal Justice), 1981
B.A.; M.A.; Ph.D., New York University, 1970

DEMELASZLE ... Professor (History), New College of USF, 1975 Sarasota Campus
M.A., Ph.D., Columbia University, 1969

DENKER, MARTIN W. ... Associate Professor (Psychiatry), 1972
B.A., M.D., Johns Hopkins University, 1967

DERR, DAVID M. ... Associate Professor (Internal Medicine), 1980
B.S., M.D., University of Michigan, 1972, C.P.A.

DE QUESSADA, ALEJANDRO M. ... Associate Professor (Internal Medicine), 1973
B.S.; M.D., University of Havana School of Medicine, 1960

DE RCTHE, MAX C. ... Associate Professor (Criminal Justice), 1977
Director (University Studies, Student Affairs), 1967
B.A., Ph.D., University of Miami, 1968

DESEAL USHA ... Assistant Professor (Pathology), 1980
M.B.B.S., Calcutta University, 1971

DEVINE, JAMES F. ... Assistant Professor (Civil Engineering and Mechanics), 1965
B.S., M.S., University of Illinois, 1960

DEVORE, PHILLIP W. ... Assistant Professor (Pediatrics), 1977
B.S.; M.D., Indiana University School of Medicine, 1972

DI CARLO, VINCENZO ... Professor (Neurology), 1978
B.A.; M.D., University of Naples School of Medicine, Italy, 1952

DICKERSON, DONNA L. ... Assistant Professor (Mass Communications), 1977
B.S.; M.A., Southern Illinois University, 1977

DICKERSON, LINNIA S. ... Associate Professor-Acating Program
Director (Visual Arts), 1968
B.A.; M.A., Ph.D., University of Delaware, 1972

DIETRICH, RICHARD F. ... Professor (English), 1968
A.B.; M.A.; Ph.D., Florida State University, 1965

DIETZ, JOHN J. ... Instructor (English), 1971
A.B., M.A., Temple University, 1963

DILLES, THOMAS P. ... Associate Professor (History), 1969
B.A.; M.A., Ph.D., University of Iowa, 1964

DILLIBEECK, DAVID G. ... Assistant Professor (Neurology), 1980
M.D.; State University of New York Upstate Medical Center, 1968

DINWOODIE, WILLIAM R. ... Assistant Professor (Internal Medicine), 1978
A.B., M.D., Indiana University School of Medicine, 1972

DORFMAN, JOSEPH ... Department Head-University Librarian (Libraries), 1974
B.A.; B.A.; M.L.S., Rutgers University, 1966

DODD, RICHARD W. ... Assistant Professor-Program Director
(Family Medicine), 1977 (Part time)
M.D., State University of New York, Upstate Medical Center, 1960

DOEYNECE, JUSTUS ... Professor (Social Sciences), New College of USF, 1975 Sarasota Campus

A.B.; M.A., Ph.D., Princeton University, 1965

DONALDSON, MERLE R. ... Professor-Chairperson (Electrical
and Electronic Systems), 1964
B.B.E.E., M.S.E.E., Ph.D., Georgia Institute of Technology, 1959

DOTY, LOUIS F. ... Professor (Industrial and Management
Systems Engineering), 1970
B.S., M.S., Ph.D., University of Cincinnati, 1951

DOUGLASS, EDWIN C. ... Visiting Assistant Professor (Pediatrics), 1980
B.A., M.D., University of Chicago, 1974

DOWD, A. GERALDINE ... Professor (Nursing), 1978
B.S., M.S., Ed. D., Boston University, 1971

DOWN, BERNARD F. ... Associate Professor (Communication), 1970

DOYLE, LARRY J. ... Professor (Marine Science), 1972
St. Petersburg Campus
B.A., M.A.; Ph.D., University of Southern California, 1973

DOYLE, MARSHA V. ... Instructor (Communication), 1981
B.A.; M.A., University of Minnesota, 1978

DRAPELA, VICTOR J. ... Professor-Chairperson
(Guidance Education), 1968
Ph.D.; M.A., Ph.D., University of North Dakota, 1968

DUBE, MERIDITH A. ... Student Affairs Coordinator (Veterans
Affairs, Student Affairs), 1980
B.S.; M.Ed., Worcester State College, 1974

DUDLEY, JULIUS W. ... Assistant Professor (Afro-American Studies), 1970
B.A., M.A., Ph.D., University of Cincinnati, 1979

DUNCAN, JOHN A. ... Assistant in Research (Diabetes Center), 1980
B.A.; M.D., University of South Florida, 1977

DUNN, MARGARET A. ... Visiting Assistant Professor (Nursing), 1980
B.S.; M.A., Ed., University of Maryland, 1969

DURSO, MARY W. ... Associate Professor (Adult and
Vocational Education), 1969
B.A., M.A.; Ph.D., Georgia State University, 1973

DUTTON, RICHARD E. ... Professor (Management), 1963
A.B.; M.B.A.; Ph.D., Louisiana State University, 1963

DWORNIK, JULIAN J. ... Associate Dean (College of
Medicine-Admissions), Associate Professor (Anatomy), 1970
B.A.; M.Sc., Ph.D., University of Manitoba, Canada, 1969

DZYKSTRA, DAVID E. ... Professor (Humanities), New College of
USF, 1975 Sarasota Campus
B.A.; M.A., Ph.D., University of Iowa, 1957

EAKER, ALAN B., JR. ... Professor (Visual Arts), 1969
B.A., M.A., University of California, Berkeley, 1969

EDGAR, JAMES R. ... Assistant Professor (Psychiatry), 1979 (Part time)
B.S., M.D., Louisiana State University, 1971

EDWARDS, STERLING J., JR. ... Director of Development
(Medical Center), 1981
B.A.; B.D.; Ph.D., University of Edinburgh, 1960

EDWARDS, WILLIAM M. ... Professor (Ophthalmology), 1972
A.B.; M.D., Yale Medical School, 1959

EICHLER, DUANE C. ... Assistant Professor (Biochemistry), 1977
B.A.; Ph.D., University of California at Los Angeles, 1972

EILERS, FREDERICK I. ... Associate Professor-Assistant
Chairperson (Biolog), 1967
B.S., M.S., Ph.D., Department of Vegetable Science, 1968

ELDER, WAYNE T. ... Instructor (Accounting), 1978
B.A.; B.A., M.A.C., University of South Florida, 1978

ELLIS, CAROLYN S. ... Assistant Professor (Guidance Education), 1969
B.A.; M.A., Ph.D., University of Kentucky, 1969

ELOREN, WILLIAM G., JR. ... Professor (Rehabilitation
Counseling Programs), 1980
B.A.; M.A.; Ph.D., University of Georgia, 1971

ENDICOTT, JAMES N. ... Associate Professor (Surgery), 1975
A.B.; M.D., Indiana University School of Medicine, 1967

ENGEL, CHARLES W. ... Professor (Math Education), 1966
B.S., M.S., Ed. D., Wayne State University, 1966

ENTREKIN, NINA M. ... Associate Professor (Nursing), 1973
B.S.N., M.N., Emory University School of Nursing, 1969

ERICKSON, LINDA E. ... Director (Admissions, Student Affairs), 1964
B.A., M.A., M.M., University of South Florida, 1970

ERVIN, DONALD W. ... Instructor-Assistant Director
(Sponsored Research), 1973
B.S., Athens College, 1964
ESPINOZA, CARMEN G. Assistant Professor (Pathology), 1978
M.D., San Marcos University, Lima, Peru, 1969
ESPINOZA, LUIS R. Associate Professor (Internal Medicine), 1978
M.D., Peruvian University of Medical and Biological Sciences, Lima, Peru, 1969
ESSIG, FREDERICK B. Associate Professor (Biology), Director
(Botanical Gardens), 1975
A.B.; Ph.D., Cornell University, 1975
ESSIG, YAO PING HU. Assistant in Research (Pediatrics), 1977
B.S.; M.S., Cornell University, 1975
ESSIK, IRVING M. Associate Dean-Professor (Medicine), 1981 (Part time)
F.D.P.I.A.
FABRY, DONNA P. Continuing Education Coordinator
(Continuing Education), 1977
B.S., University of Miami, Florida, 1959
FABRY, FRANCIS J. Professor (English), 1964
A.B., M.A., Ph.D., University of Texas, 1964
FACTOR, REGIS A. Associate 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
FAIRRIE, FIONA J. Assistant Professor (Dance), 1980
FANNING, KENT A. Associate 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
FARRELL, FRANCES Associate Professor (Nursing), 1977 (Part time)
B.S.; M.S., University of California, San Francisco Medical Center, 1968
Fazio, PETER J. Area Administrator (Housing), 1979 Sarasota Campus
B.A., Fordham University, 1970
FENDER, RICKARD C. Assistant Vice President (Administration and Finance), 1968
B.A., University of South Florida, 1969
FENSKE, NEAL A. Associate Professor (Internal Medicine), 1977
B.A.; M.D., St. Louis University School of Medicine, 1973
FERGUSON, DONALD G. Professor (Guidance Education), 1970
B.S., M.A.; Ed.D., Western Reserve University, 1956
FERNANDEZ, JACK E. Professor (Chemistry), 1960
B.S., Ch., M.A., Ph.D., University of Florida, 1954
FERNANDEZ, RAYMOND J. Assistant Professor (Pediatrics), 1977
B.A.; M.D., Tulane University School of Medicine, 1968
FERNANDEZ, ROBERT C. Associate Professor-Associate Chairperson (Psychiatry), 1977
B.S.; M.D., University of Tennessee, 1969
FERNANDEZ, SUSAN J. Counselor/Adviser (Academic Advising, Student Affairs), 1974
B.A., M.A., University of South Florida, 1975
FERRARO, NANCY E. Director (Records and Registration), 1975 Sarasota Campus
B.S., B.A., University of Florida, 1959
FETZER, JAMES H. Visiting Associate Professor (Humanities), New College of USF, 1981 Sarasota Campus
A.B.; M.A., Ph.D., Indiana University, 1970
FIGG, ROBERT M., III. Associate Professor (English), 1965
B.S., M.A., Ph.D., University of North Carolina, 1963
FILSKOV, SUSAN B. Associate Professor (Psychology), 1975
B.A.; Ph.D., University of Vermont, 1972
FINELLI, PATRICK M. Coordinator (Fine Arts Events), 1976
B.A., M.A., University of California at Berkeley, 1975
FINKELEIN, MARCIA A. Assistant Professor (Psychology), 1981
B.A.; M.A., M. Phil., Ph.D., Columbia University, 1981
FINN, ROY P. Professor (Surgery), 1974
M.D., University of South Carolina 1952
FINSTER, JOSEPH L. Associate Professor (Internal Medicine), 1977
A.B.; M.D., Georgetown School of Medicine, 1964
FIORE, SILVIA R. Professor (English), 1969
B.Ed., M.A.; Ph.D., University of Pittsburgh, 1970
B.S.; M.A., Ph.D., University of South Florida, 1979 (Part time)
B.S.; M.A., University of South Florida, 1979
FISHER, ARTHUR W., JR. Lecturer (Accounting and Law), 1970
FISHER, CHARLES E. Director, University Computer Systems
(Computer Research Center), 1978
B.S., M.S., Southern Illinois University, 1969
FITZPATRICK, DAVID F. Associate Professor (Pharmacology), 1972
B.S., M.A.; Ph.D., Vanderbil University, 1969
FLEMMING, ALLEN W. Student Affairs Coordinator
(Student Publications, Student Affairs), 1979
A.B.J., University of Georgia, 1950
FLOWERS, FRANKLIN P. Assistant Professor (Internal Medicine), 1981
B.S.; M.D., University of Florida, 1971
FLOYD, JANE B. Visiting Lecturer (Nursing), 1981
B.S., M.N., Emory University, 1975
FLYNN, ROBERT W. Professor-Acting Chairperson (Physics), 1968
B.S., S.M., Sc.D., Massachusetts Institute of Technology, 1968
FOLLMAN, JOHN C. Professor-Chairperson (Psychological and Social Foundations Education), 1966
B.A.; M.A.; Ph.D., University of North Carolina, 1969
FORD, EDWARD J., JR. Associate Professor (Economics), 1971
B.A.; M.A.; Ph.D., Boston College, 1971
FORSETH, SONIA D. Associate Professor (Art and Music Education), 1971
St. Petersburg Campus
B.A.; M.A., Ph.D., University of Minnesota, 1976
FORTSON, FRANCIS G. Systems Coordinator (Computer Research Center), 1965
FOWLER, ROBERT L., JR. Associate Professor (Psychology), 1969 St. Petersburg Campus
B.A., B.Ed., M.A., Ph.D., University of Tennessee, 1963
FOX, ROGER W. Visiting Assistant Professor (Internal Medicine), 1980 (Part time)
B.S.; M.D., St. Louis University School of Medicine, 1975
FRANCIS, ROY G. Professor-Chairperson (Sociology), 1973
B.A.; M.A.; Ph.D., University of Wisconsin, 1950
FRANK, BARRY A. Assistant Professor (Internal Medicine), 1980
B.S.; M.D., Tulane University School of Medicine, 1979
FRENSCH, DIANA G. Assistant Professor (Nursing), 1978
B.S.; M.S.N., Medical College of Georgia, 1976
FRICEL, JOHN T. Assistant Professor (Civil Engineering and Mechanics), 1971
B.S., M.S., Ph.D., Louisiana State University, 1971, P.E.
FRAZE, HENRY S. Visiting Lecturer (Engineering), 1978 (Part time)
B.S.E.; M.S.E., Pennsylvania State University, 1965
FREEMAN, KITTY S. Instructor (Electrical Engineering), 1979
B.S.E.E., M.S.E., University of South Florida, 1980
FRENCH, DIANA G. Assistant Professor (Nursing), 1978
B.S.; M.S.N., Medical College of Georgia, 1976
FRENCHMAN, STUART M. Assistant Professor (Radiology), 1977
B.A.; M.D., Temple University School of Medicine, 1967
FRESNOU, FRANK W. Associate Professor (Reading Education), 1969
B.S.; M.Ed.; Ed.D., University of Florida, 1970
FRIEDBERG, H. DAVID. Professor (Internal Medicine), 1981 (Part time)
M.B., B.Ch., University of Witwatersrand, Johannesburg, 1949
FRIEDL, FRANK E. Professor (Biology), 1960
B.A.; Ph.D., University of Minnesota, 1958
FRIEDMAN, HERMAN Professor-Chairperson (Medical Microbiology), 1978
A.B., M.A.; Ph.D., Hahnemann Medical College, 1957
FRIEDMAN, ROBERT W. Instructor (Mass Communications), 1981
A.B., M.A., University of Georgia, 1976
FROELICH, RALPH L. Associate Professor (Music Arts), 1974
B.S., Juilliard School of Music, 1958
FRY, EDWARD F. Professor (Visual Arts), 1981
A.B.; A.M., Harvard University, 1958
FULBRE, WILLIAM G., JR. Associate Professor (Mass Communications), 1971
B.A.; M.S.; Ph.D., Florida State University, 1975
FUSON, ROBERT H. Professor-Chairperson (Geography), 1960
A.B.; M.A.; Ph.D., Louisiana State University, 1958
FACULTY AND ADMINISTRATIVE STAFF

HENNING, RUDOLF E. ....... Professor (Electrical Engineering), 1971
B.S.E.E., M.S.E.E., Sc.D., Columbia University, 1954, P.E.
HENSEL, JAMES S. ....... Associate Professor (Marketing), 1976
St. Petersburg Campus
B.A.; M.B.A.; Ph.D., Ohio State University, 1970
HERANDER, MARK G. ....... Assistant Professor (Economics), 1979
A.B., Rutgers University, 1975
HERB, BARRY A. ....... Coordinator (Medicine Learning Resource Center), 1980
B.S., M.A., Ohio State University, 1975
HERMAN, WALTER J. ....... Professor (Economics), 1960
B.S., M.B.A., Ph.D., University of Florida, 1965
HERN, MICHAEL G. ....... Student Affairs Coordinator (Intercollegiate Athletics), 1980
B.S., M.Ed., Ohio University, 1974
HERPOK, FRANZ J. ....... Director (Medical Clinics), 1980
B.S., M.D., Cornell University, 1974
HERTZ, GILMAN W. ....... Professor (Elective Physical Education, Education), 1960
B.S., M.S., P.E.D., University of Indiana, 1956
HES, EDWARD V., III ....... Student Affairs Coordinator (Cooperative Education and Placement, Student Affairs), 1976
B.S.; M.Ed., Trenton State College, 1972
HES, JEFFREY B. Assistant Professor (Ophthalmology), 1979 (Part time)
B.A.; M.D., Baylor College of Medicine, 1971
HEWITT, CHARLES F. ....... Associate Vice President (Student Affairs), 1972
B.A.; M.A.; Ed., Western Michigan University, 1972
HEWITT, TRAY B. ....... Visiting Instructor (Economics), 1979
B.A., M.S., Florida Atlantic University, 1978
HEWITT, NANCY A. ....... Assistant Professor (History), 1981
B.A.; Ph.D., University of Pennsylvania, 1981
HICKKEY-WEBER, EILEEN D. ....... Assistant Research Scholar/Scientist (Biology), 1977
B.S.; M.S., Ph.D., University of Berne, Switzerland, 1970
HICKMAN, JACK W. ....... Associate Dean-Professor (Medical Center Faculty Relations), 1970
B.S., M.D., Indiana University, 1955
HICKS, DALE A. ....... Counselor/Adviser (Counseling Center, Student Affairs), 1977
B.S.; M.A., Ph.D., Bowling Green State University, 1977
HIGBE, RICHARD H. ....... Assistant Research Scholar/Scientist (Human Resources Institute), 1980
B.A., M.A., Ph.D., University of South Florida, 1980
HILBEINK, DON R. ....... Assistant Professor (Anatomy), 1980
B.S.; M.D., The Medical College of Wisconsin, 1977
HILL, LYNDA B. ....... Director (Operations Analysis, Administration and Finance), 1977
B.S.B.A., The American University, 1971
HILL, RAYMOND ....... Associate Professor-Chairperson (Adult and Vocational Education), 1971
B.A.; M.A., Ed.D., University of Alabama, 1975
HILL, ROSALIE A. ....... Director for Equal Opportunity Affairs (Employee Relations and Legal Affairs), 1975
B.S., M.Ed., Florida A&M University, 1971
HINDLE, WILL M. ....... Associate Professor (Visual Arts), 1972
HINE, ALBERT C. ....... Assistant Professor (Marine Science), 1979
St. Petersburg Campus
A.B.; M.S.; Ph.D., University of South Carolina, 1975
HINSCH, GERTRUDE W. ....... Professor (Biology), 1974
B.S.; M.S., Ph.D., Iowa State University, 1957
HINZ, JOHN ....... Dean-Professor (St. Petersburg Campus), 1979
B.A.; M.A., Ph.D., Columbia University, 1959
HIRSCH, LEONARD P. ....... Assistant Professor (Political Science), 1981
B.A.; M.A., Ph.D., Northwestern University, 1980
HIRSBerg, EDGAR W. ....... Professor (English), 1960
B.A., M.A., Ph.D., Yale University, 1951
HODGSON, JOHN S. ....... Professor (Economics), 1980
B.A.; M.B.A.; Ph.D., University of Virginia, 1971
HOFFMAN, OWEN B. ....... Assistant Trainer (Intercollegiate Athletics), 1980
B.S.; M.S., Indiana State University, 1966
HOFFMAN, HUBERT A. ....... Professor (Professional Physical Education), 1966
B.S., M.Ed., P.E.D., Indiana University, 1969
HOFFMAN, THEODORE B. ....... Professor-Chairperson (Humanities), 1962
A.B., M.A., Ph.D., University of the Pacific, 1959
HOLCOMB, DAN L. ....... Athletic Coach (Intercollegiate Athletics), 1965
B.Ed., M.S., Florida State University, 1962
HOLLAND, MARGARET S. ....... Associate Professor (Social Science and Letters Education), 1966
B.A., M.A.T.; Ph.D., Union Graduate School, 1977
HOLM, KATHRYN C. Assistant Professor (Music Arts), 1977 (Part time)
B.A.; M.M., Cleveland Institute of Music, 1975
HOLMS, ROLAND C. ....... Assistant Professor (Geography), 1974
St. Petersburg Campus
A.B., M.S.; Ph.D., University of Chicago, 1979
HOLTZMAN, LILLIAN C. ....... Director (Space Utilization and Analysis), 1964
B.A., University of South Florida, 1977
HOMAN, SUSAN P. ....... Visiting Assistant Professor (Reading Education), 1978
B.A.E.; M.A.E.; Ph.D., University of Florida, 1978
HONG, SUNGDO D. ....... Visiting Assistant Professor (Psychiatry), 1980 (Part time)
M.D., Seoul National University, 1970
HONKER, H. ANDREW ....... Associate Professor-Assistant Director (Physical Education, Student Affairs), 1969
B.S., M.S., University of Illinois, 1965
HOOKS, KAREN L. ....... Assistant Professor (Accounting), 1979
B.A., University of South Florida, 1976
HOPKINS, THOMAS J. ....... Professor (Marine Science), 1967
St. Petersburg Campus
B.A., M.A., Ph.D., Florida State University, 1964
HORACEK, MARGARET B. ....... Associate University Librarian (Medical Library), 1974
B.A.; M.S.L.S., Kansas State Teachers College, 1974
HORRIGAN, FREDERICK J. Associate Professor (Political Science), 1968
B.A.; M.A., Ph.D., Indiana University, 1959
HOUGHTON, LEA M. ....... Academic Administrator (Graduate Studies, Academic Affairs), 1968
HOUK, C. WESLEY ....... Assistant Professor (Visual Arts, 1961
B.A.; M.F.A., University of Iowa, 1950
HOWARD, THOMAS P. ....... Assistant Professor (Internal Medicine), 1981
B.S.; M.D., University of South Florida, 1977
HUDSON, MICHAEL C. ....... Systems Coordinator (Fiscal Services and Budget, Medicine), 1976
B.S., University of Florida, 1976
HUG, WILLIAM G. ....... Professor (Dance), 1969
B.S., M.A., University of Illinois, 1960
HUBLEY, WILLIAM E. ....... Associate Professor (Political Science), 1976
B.A.; M.A., Ph.D., University of Iowa, 1972
HUMM, HAROLD J. ....... Professor (Marine Science), 1966
St. Petersburg Campus
B.S.; M.S., Ph.D., Duke University, 1945
HUSTING, EDWARD L. ....... Visiting Professor (Comprehensive Medicine), 1981
B.S., M.P.H.; Ph.D., University of London, 1968
HUTCHEN, GILBERT R. ....... Associate Professor (Education), 1977
St. Myers Campus
A.B., M.S., Ed.D., Indiana University, 1970
HUTCHISON, WILLIAM S., JR. Associate Professor (Social Work), 1977
B.A.; M.S.W., University of Georgia, 1968
HVIZDALA, EVA V. ....... Associate Professor (Pediatrics), 1978
M.D., Charles University School of Medicine, Prague, Czechoslovakia, 1969
IERARDO, DOMINICK ....... Associate Professor (Foreign Languages), 1970
B.A.; M.A., Ph.D., New York University, 1974
INGALLS, ROBERT P. ....... Associate Professor-Chairperson (History), 1974
B.A.; M.A., Ph.D., Columbia University, 1973
INGRAM, JAMES M. ....... Professor-Chairperson (Obstetrics and Gynecology), 1971
M.D., Duke University, 1943
IORIO, JOHN J. ....... Professor (English), 1963
B.A., M.A., Columbia University, 1951
IRONSON, GAIL H. ....... Assistant Professor (Psychology), 1979
B.S.; M.S., Ph.D., University of Wisconsin-Madison, 1977
ISAACK, SAMUEL M. ....... Associate Professor (Mathematics), 1968
B.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, JOE A. ....... Assistant Professor (Neurology), 1981
B.A., M.D., Tulane University, 1974
JACKSON, JOHN A. ....... Associate Director (Regional Data Center), 1967
B.S., A.M., Ph.D., Stanford University, 1966
LAWSON, STEVEN F. Associate Professor (History), 1972
B.A.; M.A., Ph.D., Columbia University, 1974
LAX, BERNARD. Professor (Exceptional Child Education), 1979
B.A., M.A., Ph.D., University of Texas, 1970
LAYDEN, WILLIAM E. Professor-Chairperson (Ophthalmology), 1972
B.A., M.D., University of Vermont, 1963
LAYMAN, JAY S. Associate Business Manager (Medical Center), 1971
B.S., Florida State University, 1968
LEATH, ARVA W. Counselor/Adviser (Educational Leadership and Higher Education), 1980
B.A., University of South Florida, 1979
LEAVENGOOD, LEE B. Director (Lifelong Learning), 1973
B.S.; M.A., University of South Florida, 1973
LEBEAU, REBECCA N. Visiting Instructor (Economics), 1977
B.A.; M.S., Purdue University, 1974
LEE, SUNG JAE Associate Professor (Mathematics), 1981
B.Sc.; M.A.; Ph.D., McMaster University, Canada, 1972
LEES, NANCY J. Visiting Instructor (Nursing), 1980
B.S.; M.N., Emory University, 1980
LEFFEW, WILLIAM M. Visiting Professor (Internal Medicine), 1979
B.A.; M.S., Indiana University Medical Center, 1968
LEIBOWITZ, ALAN L. Assistant Dean (Student Affairs), 1979
Assistant Professor (Internal Medicine), 1979
B.A.; M.D., State University of New York at Buffalo, 1970
LENTZ, GLENDRA F. Director (Cooperative Education and Placement, Student Affairs), 1968
B.A., M.A., University of South Florida, 1972
LEONE, DONNA R. Associate University Librarian (Educational Resources), 1979
B.A.; M.A.; M.A.L.S., Rosary College, 1971
LE VAS SEUR, MICHAEL L. Instructor (Geography), 1980
B.A., M.A., University of South Florida, 1973
LEVINE, EDWARD L. Associate Professor (Psychology), 1977
B.S.; M.A., University of Colorado, 1978
LEVY, ARTHUR B. Associate Professor (Political Science), 1970
B.A., M.A., Ph.D., Harvard University, 1969
LEVY, CHARLENE C. Associate Professor (Social Sciences), New College of USF, 1975 Sarasota Campus
B.A., M.A., Ph.D., Michigan State University, 1975
LEVY, JOHN W. Associate Professor (Social Science and Letters, Education), 1972
B.S.; M.A.; Ed.D., University of Georgia, 1970
LEWIS, EUGENE Provost-Professor (New College), 1978
Sarasota Campus
B.A.; M.A.; Ph.D., Syracuse University, 1967
LEWIS, JAMES E. Associate Professor (Music Arts), 1971
B.M., M.M., University of Illinois, 1963
LEWIS, MICHAEL L. Assistant Professor (Communication), 1980
B.A.; M.A.; Ph.D., University of Oklahoma, 1980
LIAN, DIANE F. Assistant Department Head-University Librarian (Libraries), 1972
B.A.; M.A.L.S., George Peabody College, 1964
LIANG, JOSEPH J. Professor (Mathematics), 1970
B.A., M.A., Ph.D., Ohio State University, 1969
LICHTEenberg, BETKY K. Professor (Math Education), 1971
B.A.; M.A., Ph.D., University of Illinois, 1967
LICHTEenberg, DONOVAN R. Professor (Math Education), 1962
B.A.; M.S., Ph.D., University of Wisconsin, 1966
LILLETHUN, ABBY G. Assistant Professor (Theatre), 1981
B.A.; M.F.A., Florida State University, 1980
LILLIBRIDGE, EDMUND M. Counselor/Adviser (Counseling Center, Student Affairs), 1971
B.A., M.A., Ph.D., United States International University, 1972
LIM, DANIEL V. Associate Professor (Biology), 1976
B.A.; Ph.D., Texas A&M University, 1973
LIN, SHUI-YEN T. Associate Professor (Mathematics), 1964
B.S., M.S., Ph.D., University of Florida, 1965
LIN, YOU-FENG Professor (Mathematics), 1964
B.Sc., Ph.D., University of Florida, 1964
LINDEY, RONALD Professor (Childhood and Language Arts Education), 1969
B.S., M.S., Ed.D., University of Florida, 1969
LINDSEY, BRUCE G. Assistant Professor (Physiology), 1977
B.A.; Ph.D., University of Pennsylvania, 1974
LINDSEY, MARY J. Coordinator (Special Services, Undergraduate Studies), 1981
LINTON, JONE R. Associate Professor (Biology), 1963
B.A., M.A., Ph.D., University of Missouri, 1962
LINTON, JOHN P. Budget Analyst (Medical Center), 1978
B.S.B.A., Marquette University, 1970
LIVNAT, SHMUEL Assistant Professor (Medical Microbiology), 1981
B.Sc.; M.S.; Ph.D., Weizmann Institute of Science, Rehoovot, Israel, 1976
LLEWELLYN, JOHN A. Professor (Chemical Engineering), 1971
B.Sc., Ph.D., University College Cardiff, 1958
LOGAN, ROBERT A. Assistant Professor (Mass Communications), 1980
B.A.; M.A., Ph.D., University of Iowa, 1977
LONG, CHARLENE M. Assistant Professor (Nursing), 1978
B.S.; M.S., Ohio State University, 1962
LONG, HARRY M. Associate In (Business Administration), 1979
B.A.; M.A.; M.B.A., University of South Florida, 1979
LONG, JO ANN Professor (Childhood and Language Arts Education), 1969
A.B., M.Ed., Ph.D., Florida State University, 1969
LONSTREET, JAMES R. Professor (Finance), 1967
B.A.; M.B.A., Ph.D., Northwestern University, 1956
LOGAN, WILLIAM A., III Associate Professor (Theatre Arts), 1966
B.S.S., M.F.A., Tulane University, 1966
LOTZ, MICHAEL J. Assistant Professor (Pathology), 1978
A.B., M.D., Columbia University College of Physicians and Surgeons, 1972
LOVELESS, RICHARD L. Professor (Art and Music Education), 1968
B.S.; M.S., Pennsylvania State University, 1964
LOWE, ALVIN J. Professor-Chairperson (Reading Education), 1966
B.A.; M.A.; Ed.D., University of Virginia, 1967, D.A.G.S.
LOWE, THOMAS L. Assistant Professor (Psychiatry), 1980
B.S., M.D., University of Michigan, School of Medicine, 1974
LUCAS, MANNY Professor (Mass Communications), 1963
B.S., M.A.; Ph.D., University of Iowa, 1971
LUDWIG, WILLIAM E. Assistant Professor (Music), 1979
B.M.; M.M., Yale University School of Music, 1977
LUPTON, D. KEITH Program Director (Interdisciplinary Social Science), 1967
B.S.; LL.B.; M.A., Dartmouth College, 1951
LUTHER, ANITA B. Assistant in Research (Medicine), 1975
Lyman, charles p. Associate Professor (Visual Arts), 1972
B.A.; M.S., Institute of Design, Illinois Institute of Technology, 1969
LYMAN, GARY H. Associate Professor (Internal Medicine), 1977
B.A., M.D., State University of New York at Buffalo, 1972
MAC CULLOUGH, DOUGLAS B. University Registrar (Registrar), 1971
B.S., M.A., University of Florida, 1965
MAC DONALD, GWENDOLINE R. Dean-Professor (Nursing), 1973
B.S.; M.A., Ed.D., Columbia University, 1963
MACK JEFFREY Area Administrator (Housing and Food Service, Student Affairs), 1973
A.B.; M.A., University of South Florida, 1976
MACKENZIE, BERNARD Academic Administrator (Office of Regional Campus Affairs), 1972
B.F.A.; M.A.; Ph.D., University of Florida, 1977
MAC MULLEN, JAMES T. Visiting Assistant Professor (Physics), 1980
B.S.; M.S.; Ph.D., University of Arizona, 1979
MACON, A. RILEY Director (Sponsored Research), Professor (Chemistry), 1980
B.S.; M.S.; Ph.D., Northwestern University, 1961
MAC PHAIL, IAN A. ............ Associate Professor (Family Medicine), 1981
M.D., University of Toronto, 1956
MAHONEY, COLLEEN A. .......... Counselor to Students (Housing and Food Service, Student Affairs), 1981
B.A., M.Ed., Stetson University, 1981
MALONE, JOHN I. .................. Professor (Pediatrics), 1972
B.S.; M.D., University of Pennsylvania School of Medicine, 1967
MAMEL, PHILLIP J. .................. Associate Professor (Internal Medicine), 1979
B.A., M.D., University of Wisconsin Medical School, 1974
MANTHORPE, Marjorie I. .......... Visiting Professor (Marketing), 1981
Sarasota Campus
B.S.; M.B.A.; D.B.A., Indiana University, 1953
MAYBURY, W. ENNIS .............. Counselor/Adviser (Business), 1972
B.Ed.; M.A., University of Chicago, 1949
MANGUM, WILEY P. .............. Associate Professor (Gerontology), 1971
B.A., M.A.; Ph.D., University of Southern California, 1971
MANKER, CHARLES C., JR. ........ Professor (Psychological and Social Foundations Education), 1966
B.A., M.R.E., Ph.D., University of Kentucky, 1956
MANN, CHERYL R. .................. University Physician (Student Health Service, Student Affairs), 1981
B.S.; M.S., University of South Florida, 1977
MANN, MARCIA L. ................. Associate Professor-Program Director (Childhood and Language Arts Education), 1970
B.A.; M.Ed., Ph.D., University of Nebraska, 1970
MANN, WILLIAM F. ............... Athletic Coach (Intercollegiate Athletics), 1976
A.B.; M.Ed., University of Florida, 1951
MANOUGIAN, MANOOG N. ....... Professor-Chairperson (Mathematics), 1968
B.A., M.A., Ph.D., University of Texas, 1968
MANSELL, JOYCE A. .............. Counseling Counselor/Adviser (Student Personnel, Education), 1981
B.S.; M.S., Indiana University, 1964
MANSELL, RICHARD L. .......... Professor (Biology), 1967
A.B., M.A., Ph.D., Indiana University, 1964
MARIN, GERALD S. ................ Instructor (Student Personnel Office, Education), 1969
B.S., M.A., University of South Florida, 1970
MARLOW, LARRY C. ............... Assistant In (Educational Leadership and Higher Education), 1979
B.A., University of South Florida, 1974
MARSH, BRUCE L. .................. Professor (Visual Arts), 1969
B.A.; M.A., California State University, 1965
MARSHALL, PHYLLIS P. .......... Acting Assistant Director (Intercollegiate Athletics), 1960
B.A., M.A., Marshall University, 1954
MARTIN, DEAN F. .................. Professor (Chemistry), 1964
A.B., Ph.D., Pennsylvania State University, 1958
MARTIN, ROBERT L. .............. Associate Professor (Pathology), 1978
B.S., M.D., University of Kansas, 1960
MARTIN, RUTH R. .................. Assistant Professor (Social Work Program), 1981
B.S.; M.S.W., Ph.D., University of Connecticut, 1980
MASON, FRANK T. .................. Assistant Professor (English), 1969
B.A.; M.A., Ph.D., Michigan State University, 1974
MASSIE, PAUL A. ................. Associate Professor (Theatre Arts), 1974
MATHENY, ARTHUR R. ............. Visiting Assistant In (Biology), 1979
B.S.; M.S., Purdue University, 1971
MATHER, JEAN ...................... Assistant Provost-Assistant Professor (Provost), New College of USF, 1980 Sarasota Campus
B.A.; M.P.H., Ph.D., Yale University, 1975
MAUKSCH, INGEBORG G. ........ Visiting Professor (Nursing), 1981
B.S.N.; A.M.; Ph.D., University of Chicago, 1969
MAUSER, AUGUST J. .............. Professor-Chairperson (Exceptional Child Education), 1981
B.S., M.S., Ed.D., Indiana University, 1968
MAYBURY, P. CALVIN .............. Professor (Chemistry), 1961
B.S.; M.S., Johns Hopkins University, 1962
MAYEY, GEORGE H. ................ Professor (History), 1969
Sarasota Campus
B.A.; M.A.; Ph.D., University of Minnesota, 1948
MAZUR, JOSEPH L. .............. Professor-Chairperson (Measurement and Research Education), 1970
A.B.; M.A.; Ph.D., Case Western Reserve University, 1968
MC CAIN, HANCE C. .............. Coordinator (Development and Alumni Affairs), 1980
B.S., M.S., University of Tampa, 1978
MC CLELLAN, LESLIE .............. Professor (Childhood and Language Arts Education), 1964
B.S., M.Ed., Ed.D., University of Missouri, 1961
MC CLENDON, PAUL E. .......... Professor (Educational Leadership Education), 1969 Sarasota Campus
B.S.; M.A.; Ed.D., Florida State University, 1963
MC CLOWRY, DANNY P. .......... Assistant Professor (Communication), 1977
B.S.; M.Ed.; Ph.D., Ohio State University, 1978
MC CLUNG, GENE E. .............. Professor (Accounting), 1960 St. Petersburg Campus
B.A., M.A., Hardin-Simmons University, 1957, C.P.A.
MC CLUNG, NORVEL M. ............ Professor (Biology), 1966
A.B.; M.S., Ph.D., University of Michigan, 1949
MC CONNEL, JAMES W. .......... Counselor to Students (Housing and Food Service, Student Affairs), 1979
B.A., M.A., University of South Florida, 1976
MC CORMICK, ROBERT W. .... Associate Professor (Music Arts), 1974
B.A.; M.A., San Jose State University, 1973
MC COY, EARL D. .................. Assistant Professor (Biology), 1978
B.S.; M.S., Florida State University, 1977
MC CROSSAN, JOHN A. .......... Associate Professor-Chairperson (Library, Media, and Information Studies, Education), 1977
B.A.; M.A.; Ph.D., University of Illinois, 1966
MC DONALD, NANCY H. ....... Assistant Professor (Electrical Engineering), 1978
A.B.; M.S.; Ph.D., University of California at Berkeley, 1975
MC DONALD, THOMAS W. ....... Associate Professor (Obstetrics/Gynecology), 1980
A.B.; M.D., University of Louisville, 1971
MC DONGH, GARY W. ............ Assistant Professor (Social Sciences), New College of USF, 1981 Sarasota Campus
B.A.; M.A.; Ph.D., Johns Hopkins University, 1981
MC GINNIS, CHARLES E. .......... Visiting Lecturer (Electrical Engineering), 1978
B.E.E.; M.S.E.E., Massachusetts Institute of Technology, 1954, P.E.
MC INTOSH, CHARLES A., JR. ........ Director (Business Administration), 1976
B.S.; M.B.A., Syracuse University, 1956
MC INTOSH, NANCY J. .......... Visiting Instructor (Management), 1981 St. Petersburg Campus
B.A.; M.A., University of South Florida, 1977
MC LAUGHLIN, THOMAS E. .... Assistant Professor (Visual Arts), 1978
B.A.; M.F.A., Indiana University, 1978
MC LEAN, EDWARD F. .......... Professor (Foreign Languages), 1960
M.A., Ph.D., Duke University, 1961
MC NAIR, A. JEANENE ......... Department Head-University Librarian (Libraries), 1963
B.A.; M.S.L.S., Indiana University, 1965
MC WATERS, MARCUS M., JR. ........... Associate Professor (Mathematics), 1966
B.S., Ph.D., University of Florida, 1966
MEAD, C. GAIL ............. Instructor (Humanities), New College of USF, 1975 Sarasota Campus
MELARANGO, PETER .......... Assistant Professor (Visual Arts), 1978
B.A.; M.A., Boston University, 1976
MELENDI, JOHN C. .............. Assistant Director (Medical Center Administration), 1964
B.S., Florida Southern College, 1959
MELLISH, G. HARTLEY ....... Associate Professor-Acting Director (Management Institute, Business Administration), 1965
B.A.; Ph.D., University of Virginia, 1963
MEDELISBLATT, FRANK .......... Assistant Professor (Ophthalmology), 1979
B.S., M.D., University of Miami, Florida, 1960
MENNINGER, RICHARD P ........ Associate Professor (Physiology), 1971
B.S.; Ph.D., University of Kentucky, 1971
MERCADO, MARYLYN J. ....... Associate University Librarian (Libraries), 1975
B.A.; M.L.S., University of Pittsburgh, 1973
MERICA, JOHN A. .............. Associate Professor (Exceptional Child
B.A., M.A., University of South Florida, 1968
MOORE, STEPHEN B. .. Instructor (Management), 1976
B.A., M.B.A., University of South Florida, 1976
MORLEY, ROSEMARY M. .... Assistant Dean (Undergraduate Affairs, Natural Sciences), 1973
B.A.; M.S., Ed.S.; Ph.D., University of Florida, 1979
MORMINO, GARY R. .... Assistant Professor (History), 1977
B.A.; M.A., Ph.D., University of North Carolina, 1977
MORRILL, JOHN B. .... Professor (Natural Sciences), New College of USF, 1975 Sarasota Campus
B.A.; M.S.; Ph.D., Florida State University, 1938
MORRIS, BEUALAH M. .... Assistant Department Head-Assistant University Librarian (Libraries), 1975 Sarasota Campus
MORRIS, WILLIAM E. .... Professor (English), 1964
B.A., M.A.; Ph.D., University of North Carolina, 1962
MOSELEY, JAMES G., JR. .... Associate Professor-Chairperson (Humanities), New College of USF, 1975 Sarasota Campus
B.A.; M.A., Ph.D., University of Chicago Divinity School, 1973
MOSS, RICHARD L. .... Assistant Professor (Economics), 1974
B.A.; M.A.; Ph.D., Virginia Polytechnic Institute, 1976
MOTTO, ANNA L. .... Professor (Classics), 1973
B.A.; M.A.; Ph.D., Pennsylvania State University, 1953
MOYSE, WILLIAM F. .... Assistant Professor (Mass Communications), 1971
B.A., M.A., University of South Florida, 1976
MUKHERJEA, ARUNAYA .... Professor (Mathematics), 1969
B.S., M.Sc.; Ph.D., Wayne State University, 1967
MULLINS, LARRY C. .... Assistant Professor (Social Science Program of Distinction), 1980
B.A.; M.A.; M.Phil., Yale University, 1978
MUMME, ROY I. .... Assistant Professor-Director (Mt. Myers Center), 1966
MUSKING, HENRY R. ... Instructor (Psychiatry), 1979
B.S.; M.S.; Ph.D., Clemson University, 1973
MUSSON, CARL F. ... Coordinator (Fine Arts Events), 1980
B.S.; M.F.A., University of Texas, 1979
MYERSON, MARILYN .... Associate Professor (Interdisciplinary Social Science), 1973
B.A.; M.A., Ph.D., State University of New York at Buffalo, 1976
NAEHRING, DOUGLAS C. E .... Associate Professor (Systems Engineering), 1970 St. Petersburg Campus
B.E.; M.Sc., Ohio State University, 1949, P.E.
NAGEL, BOBBI J. .... Counselor to Students (Housing and Food Service, Student Affairs), 1981
B.A.; M.A., Memphis State University, 1981
NAGLE, R. KENT ... Associate Professor (Mathematics), 1976
B.S., M.A., Ph.D., University of Michigan, 1975
NAGY, FRANKLIN J. ... Director/Instructor (Educational Leadership and Higher Education), 1980
B.A.; M.S.; Ed.S., Ph.D., University of Florida, 1977
NAZIAN, STANLEY J. JR. .... Assistant Professor (Physiology), 1979
B.S.; Ph.D., Marquette University, 1977
NEILL, W. TRAMMELL .... Assistant Professor (Psychology), 1977
B.A.; M.A., Ph.D., University of Oregon, 1977
NELSEN, HARVEY W. .... Associate Professor (Interdisciplinary Social Science), 1972
B.A.; M.A., Ph.D., George Washington University, 1972
NELSON, CARNOT E. .... Professor (Psychology), 1971
B.S.; Ph.D., Columbia University, 1966
NELSON, DOUGLAS L. Professor-Acting Chairperson (Psychology), 1967
B.A.; M.A., Ph.D., University of Wisconsin, 1967
NELSON, LOUIS R. .... Director (Laboratory Animal Medicine) Associate Professor (Medical Microbiology), 1971
B.S.; M.S.; D.V.M., Auburn University, 1968
NEMAN, EDGAR G. .... Professor (Sociology), 1968
B.S.; M.S.; Ph.D., University of Florida, 1969
NEMSON, MARJORIE P. .... Counselor/Adviser (Student Personnel Office, Education), 1969 (Part time)
B.S., Michigan State University, 1952
NESS, GENE C. .... Associate Professor (Biochemistry), 1974
B.S.; Ph.D., University of North Dakota, 1971
NESS, THOMAS E. .... Associate Professor-Chairperson (Marketing), 1971
B.S., M.S.; Ph.D., Ohio State University, 1969

RAFF, ROBERT W. ... Associate Professor (Mathematics), 1967

B.S., M.S.; Ph.D., Wayne State University, 1966

RAY JAMES, D. J. .... Dean-Professor (Natural Sciences), 1959

B.S., M.S.; Ph.D., University of Illinois, 1951

READER, WILLIE D. ... Professor (English), 1963

A.B., M.A.; Ph.D., University of Florida, 1962

READING, ANTHONY J. ... Professor-Chairperson (Psychiatry), 1975

M.D.; M.P.H., Sc.D., Johns Hopkins University, 1964

REARICK, MARTHA N. ... Professor (Music Arts), 1963

B.M., M.M., University of Michigan, 1961

REDDING, BARBARA A. ... Associate Professor (Nursing), 1975

B.S.; M.S.W., University of Pennsylvania, 1964

REECE, DONA Y. ... Assistant University 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. ... Coordinator (Academic Services), 1969

A.B.; M.A., University of Maryland, 1962

REILLY, J. TIM. ... Associate Professor (Criminal Justice), 1965

St. Petersburg Community College, 1957

B.A., M.A.; Ph.D., University of Texas at Austin, 1977

RENICK, JAMES C. ... Associate Professor (Social Work Program), 1981

B.A.; M.S.W.; Ph.D., Florida State University, 1980

RENNE, ROGER ... Assistant Professor (Natural Sciences), New College of USF, 1975 Sarasota Campus

B.A.; M.A., University of California, Berkeley, 1963

RENSHAW, STEVEN L. ... Visiting Assistant Professor (Communication), 1981

B.A., M.A.; Ph.D., University of Oklahoma, 1975

REYNOLDS, JERALD M. ... Associate Professor (Music Arts), 1966

B.A.; M.M., University of Oregon, 1963

RHODIN, JOHANNES A. G. ... Professor-Chairperson (Anatomy), 1979

B.A.; M.D., Ph.D., Karolinska Institute, Stockholm, Sweden, 1954

RICH, THOMAS A. ... Professor-Chairperson (Gerontology), 1961

B.A., M.A., Ph.D., University of Florida, 1957, S.M. Hig.

RICHARDSON, WILLIAM R. ... Professor (Surgery), 1979

A.B.; M.D., Harvard Medical School, 1944

RICHET, JOICE A. ... Systems Coordinator (Computer Research Center), 1960

B.S., University of Kentucky, 1953

RICHMAN, ALAN V. ... Associate Professor (Pathology), 1978

B.S.; M.D., Jefferson Medical College, 1968

RICKER, LAWRENCE, H. ... Professor (Communication), 1966

B.S., M.A., Ph.D., University of Florida, 1962

RIDDLE, RONALD W. ... Associate Professor (Humanities), New College of USF, 1975 Sarasota Campus

A.B.; M.A.; Ph.D., University of Illinois, 1975

RIEGELS, DONALD A. ... Associate Director (Computer Research Center), 1977

B.A., University of South Florida, 1972

RIGGIN, JOHN T. ... Associate Dean-Professor (Medicine), 1978

B.S., M.D., Johns Hopkins University School of Medicine, 1951

RIGGIN, Ora N. ... Assistant Dean for Graduate Education-Professor (Nursing), 1977

B.S.; M.Ed.; Ed.D., Memphis State University, 1976

RIGGS, CARL D. ... Dean (Graduate Studies), Professor (Biology), 1971

B.S.; M.S., Ph.D., University of Michigan, 1953

RIGGS, PLATON N. ... Assistant Professor (Political Science), 1976

B.A.; M.A.; Ph.D., Michigan State University, 1974

RINKEL, MURICE O. ... Instructor-Assistant Director (Florida Institute of Oceanography), 1973 St. Petersburg Campus

B.S., Florida State University, 1953

RITCHIE, ALEXANDER W. ... Assistant Professor (Geology), 1978

B.S.; M.A., Ph.D., University of Texas, 1974

RITTERMAN, STUART I. ... Professor (Communication), 1969

B.A.; Ph.D., Case Western Reserve University, 1968, C.C.C.

RIVARD, RICHARD J. ... Assistant Professor (Finance), 1977

B.S.; M.S., Ph.D., Texas A&M University, 1978

ROBERTS, LOREN G. ... Coordinator (Student Personnel Office, Education), 1968

B.S., M.S., Emporia State Teachers College, 1963

ROBERTS, ROBIN E. ... Athletic Coach (Intercollegiate Athletics), 1976

B.S., Michigan State University, 1948

ROBERTSON, HENRY M. ... Professor (American Studies), 1961

B.A.; M.A., Ph.D., University of Minnesota, 1966

ROBERTSON, PHYLIS M. ... Counselor/Advisor (Student Personnel Office, Education), 1968 (Part time)

B.A., University of Minnesota, 1941

ROBINSON, BRUCE E. ... Visiting Assistant Professor (Internal Medicine), 1981 (Part time)

B.S.; M.D., University of South Florida, 1975

ROBINSON, CHASE ... Associate Professor (Dance), 1971

B.S., Florida State University, 1949

ROBINSON, CLAIRE S. ... Budget Officer (Administration and Finance), 1966

B.A., University of South Florida, 1978

ROBINSON, GERALD G. ... Professor (Biology), 1960

B.S., Ph.D., University of Minnesota, 1960

ROBINSON, JACK H. ... Professor (Measurement and Research Education), 1963 St. Petersburg Florida State College.

B.S.; M.A.; Ed.D., Harvard University, 1960

ROBINSON, JOHN O. ... Assistant Professor (Music), 1977

B.A.; M.A., D.M.A., Stanford University, 1973

ROCHELLE, DAVID B. ... Director, University TV (Educational Resources), 1979

B.F.A., University of Houston, 1956

RODRIK, GARY E. ... Assistant Professor (Comprehensive Medicine), 1978

B.A., M.S.; Ph.D., University of Oklahoma, 1971

RODRIGUEZ, LAVINIA ... Counselor/Advisor (Counseling Center, Student Affairs), 1981

B.A., M.A., Ph.D., University of South Florida, 1981

RODRIGUEZ, MANUEL, JR. ... Business Manager (Medical Clinics), 1977

B.S., University of Tampa, 1968

ROGERS, DONALD W. ... Visiting Associate Professor (Civil Engineering and Mechanics), 1973 (Part time)

B.A.; M.S., Ph.D., University of North Carolina, 1973, P.E.

ROGERS, JOANNE L. ... Athletic Coach (Intercollegiate Athletics), 1975

B.A., M.A., University of South Florida, 1975

ROZINSKI, JERZY ... Visiting Research Associate (Biochemistry), 1981

Ph.D., Warsaw University, 1973

ROLF, CAROL J. ... Academic Administrator (Academic Affairs), 1974

B.A., University of South Florida, 1976

ROMEO, JOHN T. ... Associate Professor (Biology), 1977

B.A.; M.S., Ph.D., University of Texas at Austin, 1973

ROMIG, LARRY G. ... Director (Lifelong Learning), 1966

B.S.; M.A., University of South Florida, 1970

ROOT, ALLEN W. ... Professor-Associate Chairperson (Pediatrics), 1973

A.B.; M.D., Harvard Medical School, 1938

ROOT, EDWARD R. ... Assistant Professor (Pediatrics), 1978

B.A.; M.D., Albert Einstein College of Medicine, 1973

ROSE, NATALIE E. ... Associate Professor (Social Sciences), 1980

B.A., Transylvania, 1958

ROSE, NELSON A. ... Associate Professor (Mathematics), 1960

B.A.; M.A., University of Kentucky, 1954

ROSE, LEE H. ... Head Athletic Coach (Intercollegiate Athletics), 1980

B.S., M.A., Emporia State Teachers College, 1963
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<th>Name</th>
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<td>SELMAN, James</td>
<td>Professor (Adult and Vocational Education)</td>
<td>1971</td>
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<td>B.S., M.S., Ed.D., Florida State University, 1967</td>
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<td>Seltzer, Ada M.</td>
<td>Assistant Director (Medical Library)</td>
<td>1965</td>
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<td>B.S.; M.S.; M.A., University of South Florida, 1971</td>
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<td>Sepanik, Mary A.</td>
<td>Assistant Director (Libraries)</td>
<td>1969</td>
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<td>B.S.; M.A.L.S., Rosary College, 1963</td>
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<td>Shah, Chunial P.</td>
<td>Assistant Professor (Radiology)</td>
<td>1981</td>
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<td>M.B.B.S., Topiwala National Medical College, 1960</td>
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<td>Shah, Shirel C.</td>
<td>Assistant In Research (Diabetes Center)</td>
<td>1981</td>
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<td>B.A.; M.B.B.S., Medical College Baroda, India, 1975</td>
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<td>Shannon, Robert F.</td>
<td>Associate Professor (Economics)</td>
<td>1966</td>
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<td>B.S.; M.B.A.; Ph.D., University of Illinois, 1966</td>
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<td>Shannon, Roger</td>
<td>Associate Professor (Physiology)</td>
<td>1974</td>
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<td>B.A., Ph.D., University of Kentucky, 1970</td>
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<td>Sherman, Sandra B.</td>
<td>Assistant Professor (Nursing)</td>
<td>1978</td>
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<td>B.S.N.; M.S.N., University of Cincinnati, 1978</td>
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<td>Sharpe, John R.</td>
<td>Assistant Professor (Surgery)</td>
<td>1973</td>
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<td>B.S.; B.S., M.D., Medical College of Virginia, 1967</td>
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<td>Shaw, Kailie R.</td>
<td>Assistant Professor (Psychiatry)</td>
<td>1974</td>
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<td>J.M.B.; M.D., University of Cape Town Medical School, 1966</td>
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<td>Shea, William M.</td>
<td>Associate Professor (Religious Studies)</td>
<td>1980</td>
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<td>B.A.; Ph.D., Columbia University, 1974</td>
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<td>Shelly, Sue A.</td>
<td>Visiting Assistant Professor (Pathology)</td>
<td>1978</td>
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<td>B.A.; M.S., Ph.D., Loyola University of Chicago, 1974</td>
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<td>Shepherd, David C.</td>
<td>Professor (Communicology)</td>
<td>1972</td>
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<td>B.A.; M.A.; Ph.D., Syracuse University, 1962</td>
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<td>Sherman, Barbara R.</td>
<td>Assistant Vice President for Academic Affairs (Planning and Budgeting)</td>
<td>1977</td>
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<td>Sherman, James J.</td>
<td>Professor (Management)</td>
<td>1967</td>
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<td>B.S.; J.D.; Ph.D., State University of New York at Buffalo, 1966</td>
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<td>Sherman, James M., Jr.</td>
<td>Visiting Assistant Professor (Pediatrics)</td>
<td>1981</td>
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<td>B.A., M.D., University of South Florida, 1975</td>
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<td>Sherman, Rogers T.</td>
<td>Professor-Chairperson (Surgery)</td>
<td>1972</td>
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<td>A.B.; M.D., University of Cincinnati, 1948</td>
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<td>Shewmaker, Janeth D.</td>
<td>Assistant University Librarian (Libraries)</td>
<td>1979</td>
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<td>A.B.; M.S.L.S., Case Western Reserve University, 1953</td>
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<td>Shiffman, Saul M.</td>
<td>Assistant Professor (Psychology)</td>
<td>1981</td>
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<td>B.S.; M.A.; Ph.D., University of California, Los Angeles, 1981</td>
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<td>Shilkoh, Alon J.</td>
<td>Professor (Anthropology)</td>
<td>1973</td>
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<td>B.A.; M.A.; Ph.D., Dropsie University, 1959</td>
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<td>Shipp, Pamela S.</td>
<td>Associate University Librarian (Libraries)</td>
<td>1972</td>
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<td>B.A.; M.Ln., Emory University, 1972</td>
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<td>Shires, Dana L., Jr.</td>
<td>Professor (Internal Medicine)</td>
<td>1973</td>
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<td>B.S., M.D., University of Florida, 1961</td>
<td></td>
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<td>Shiver, Robert H.</td>
<td>Assistant Director (Golf Course, Student Affairs)</td>
<td>1969</td>
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<td>B.S., University of Florida, 1961</td>
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<td>Showe, Warren</td>
<td>Professor (Economics)</td>
<td>1964</td>
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<td>B.B.A.; M.B.A.; Ph.D., Georgia State University, 1968</td>
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<td>Sidowski, Joseph B.</td>
<td>Professor (Psychology)</td>
<td>1969</td>
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<td>B.A.; M.S., Ph.D., University of Wisconsin, 1956</td>
<td></td>
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<td>Siebel, Jerry D.</td>
<td>Associate Professor (Accounting)</td>
<td>1976</td>
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<td>B.B.A.; M.S., Ph.D., University of Iowa, 1967, C.P.A.</td>
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<td>Siegel, Richard L.</td>
<td>Assistant Professor (Pediatrics)</td>
<td>1981</td>
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<td>A.B.; M.D., Ph.D., Washington University, 1977</td>
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<td>Silber, Edward M.</td>
<td>Assistant Dean (Social &amp; Behavioral Sciences) (Associate Professor (History), Coordinator (Advising), 1965</td>
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<td>B.S.; M.A.; Ph.D., University of Florida, 1966</td>
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<td>Silbiger, Martin L.</td>
<td>Associate Professor (Radiology)</td>
<td>1973</td>
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<td>Part time</td>
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<td>A.B.; M.D., Western Reserve University, 1962</td>
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<td>Silver, Archie A.</td>
<td>Associate Professor (Psychiatry)</td>
<td>1978</td>
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<td>B.S., M.D., New York University College of Medicine, 1940</td>
<td></td>
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<td>Silver, Bruce S.</td>
<td>Associate Professor (Philosophy)</td>
<td>1971</td>
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<td>B.A., M.A., Ph.D., University of Colorado, 1971</td>
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<td>Silverman, David J.</td>
<td>Associate Professor (Criminal Justice)</td>
<td>1972</td>
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<td>B.A.; M.A., Ph.D., Ohio State University, 1970</td>
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<td>Silverman, Mitchell</td>
<td>Professor (Criminal Justice)</td>
<td>1968</td>
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<td>B.A.; M.S.; Ph.D., Ohio State University, 1968</td>
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<td>Silverman, Stuart H.</td>
<td>Professor (Psychological and Social Foundations Education)</td>
<td>1970</td>
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<td>B.B.A.; M.S., Ph.D., Yeshiva University, 1971</td>
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<td>Simmons, A. Keith</td>
<td>Director (Procurement)</td>
<td>1969</td>
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<td>B.A., University of South Florida, 1968</td>
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<td>Simmons, Michael K.</td>
<td>Director (Media Relations and Publications)</td>
<td>1979</td>
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<td>B.S., University of Florida, 1970</td>
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<td>Simon, Joseph L.</td>
<td>Professor (Biology)</td>
<td>1963</td>
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<td>B.S.; M.S., Ph.D., University of New Hampshire, 1963</td>
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<td>Simon, Sunilendra P.</td>
<td>Professor (Exceptional Child Education)</td>
<td>1971</td>
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<td>B.A., M.A.S.; Ed., University of California, Los Angeles, 1967</td>
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<td>Sischo, John I.</td>
<td>Professor-Coordinator (Communication)</td>
<td>1968</td>
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<td>B.S.; M.A.; Ph.D., University of Minnesota, 1966</td>
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<td>Sisk, Dorothy D.</td>
<td>Professor (Exceptional Child Education)</td>
<td>1969</td>
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<td>B.S.; M.A.; Ed., University of California, Los Angeles, 1965</td>
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<td>Sistrunk, Francis</td>
<td>Professor (Psychology)</td>
<td>1966</td>
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<td>B.A.; M.S., Ph.D., University of Miami, Florida, 1963</td>
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<td>Skelton, William H.</td>
<td>Associate Professor (Civil Engineering and Mechanics)</td>
<td>1971</td>
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<td>B.A.; M.S., Ph.D., University of Iowa, 1971</td>
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<td>Sleeper, David C.</td>
<td>Professor (Marketing)</td>
<td>1964</td>
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<td>B.B.A., M.B.A.; Ph.D., Ohio State University, 1965</td>
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<td>Sluder, Darrell</td>
<td>Assistant Professor (Interdisciplinary Social Sciences)</td>
<td>1981</td>
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<td>B.A.; M.A., M.Phil., Ph.D., Yale University, 1981</td>
<td></td>
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<tr>
<td>Small, Norman C.</td>
<td>Professor (Civil Engineering and Mechanics)</td>
<td>1969</td>
</tr>
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<td>B.M.E.; M.M.E.; Ph.D., Brown University, 1960</td>
<td></td>
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<td>Smillie, David</td>
<td>Professor (Social Sciences), New College of U.S.F., 1975 Sarasota Campus</td>
<td>1975</td>
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<tr>
<td>B.A.; M.A.; Ph.D., Cornell University, 1953</td>
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<tr>
<td>Smith, Alice G.</td>
<td>Professor (Library, Media and Information Studies Education)</td>
<td>1965</td>
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<td>B.A., M.S., Ed.D., Wayne State University, 1965</td>
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<tr>
<td>Smith, Carlos A.</td>
<td>Associate Professor (Chemical Engineering)</td>
<td>1972</td>
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<tr>
<td>B.A.; M.S., Ph.D., Louisiana State University, 1972</td>
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<tr>
<td>Smith, Charles D.</td>
<td>Professor (Professional Physical Education, Education)</td>
<td>1967</td>
</tr>
<tr>
<td>B.S.; M.A.; Ed., Temple University, 1967</td>
<td></td>
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<td>Smith, Charles T.</td>
<td>Associate Professor (Finance)</td>
<td>1968</td>
</tr>
<tr>
<td>B.A., M.B.A.; Ph.D., State University of New York at Buffalo, 1970</td>
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<td>Grad. Cert.</td>
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<tr>
<td>Smith, David H.</td>
<td>Professor (Communication)</td>
<td>1976</td>
</tr>
<tr>
<td>B.S.; M.A.; Ph.D., Ohio State University, 1966</td>
<td></td>
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<td>Smith, Donl L.</td>
<td>Professor (Pharmacology and Comprehensive Medicine)</td>
<td>1969</td>
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<td>B.A., M.S., Ph.D., University of Colorado, 1958</td>
<td></td>
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<tr>
<td>Smith, Elton E.</td>
<td>Professor (English)</td>
<td>1961</td>
</tr>
<tr>
<td>B.S.; M.A.; B.D., Ph.D., Syracuse University, 1961, D.D. (Hon.)</td>
<td></td>
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<tr>
<td>Smith, Jack L.</td>
<td>Professor (Accounting)</td>
<td>1969</td>
</tr>
<tr>
<td>B.B.A.; M.S., Ph.D., University of Mississippi, 1969, C.P.A.</td>
<td></td>
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<tr>
<td>Smith, J. Jerome</td>
<td>Associate Professor (Anthropology)</td>
<td>1972</td>
</tr>
<tr>
<td>B.A.; M.A., Ph.D., University of Arizona, 1972</td>
<td></td>
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<tr>
<td>Smith, John L., Jr.</td>
<td>Assistant Dean-Associate Professor (Fine Arts)</td>
<td>1972</td>
</tr>
<tr>
<td>B.M.E.; M.M.E.; D.M.A., University of Missouri, 1979</td>
<td></td>
<td></td>
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<tr>
<td>Smith, Juel H.</td>
<td>University Counseling Psychologist (Counseling Center, Student Affairs)</td>
<td>1974</td>
</tr>
<tr>
<td>B.S.; M.A., University of South Florida, 1973</td>
<td></td>
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<tr>
<td>Smith, Philip L.</td>
<td>Associate Professor-Chairperson (Social Work)</td>
<td>1975</td>
</tr>
<tr>
<td>B.S.; M.S.W., University of Georgia, 1968</td>
<td></td>
<td></td>
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<tr>
<td>Smith, William A.</td>
<td>Professor (Mechanical Engineering)</td>
<td>1966</td>
</tr>
<tr>
<td>B.S.M.E.; M.S., Ph.D., University of Florida, 1966</td>
<td></td>
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<tr>
<td>Smitz, Melpomeno</td>
<td>Associate Professor (Exceptional Child Education)</td>
<td>1965</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>University/Degree Details</td>
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</tr>
<tr>
<td>VALENTINE, VIRGINIA W.</td>
<td>Lecturer (English)</td>
<td>B.A.; M.A., University of Texas at Austin, 1972</td>
</tr>
<tr>
<td>VAN COTT, MARY LOU</td>
<td>Instructor (Nursing)</td>
<td>B.S., University of South Florida, 1978</td>
</tr>
<tr>
<td>VAN NESTE, ROY J.</td>
<td>Assistant Professor (History)</td>
<td>B.A.; M.A., University of Wisconsin, 1972</td>
</tr>
<tr>
<td>VAN VLEET, EDWARD S.</td>
<td>Assistant Professor (Marine Science)</td>
<td>1979 St. Petersburg Campus</td>
</tr>
<tr>
<td>VARGA, GABRIEL A.</td>
<td>Assistant Professor (Science)</td>
<td>M.D., Universidad Nacional De Colombia School of Medicine, 1972</td>
</tr>
<tr>
<td>VARGAS, A.B.; M.S., M.B.A., D.B.A., Florida State University, 1964</td>
<td></td>
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</tr>
<tr>
<td>VARGAS, M.A.; B.S., M.D., University of Medicine, 1972</td>
<td></td>
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</tr>
<tr>
<td>VARIO, MURALI R.</td>
<td>Associate Professor (Computer Science Engineering)</td>
<td>B.S.; M.I.S., M.S., Ph.D., University of Maryland, 1973</td>
</tr>
<tr>
<td>VEGA, MANUEL</td>
<td>Associate Professor (Criminal Justice)</td>
<td>1965 Sarasota Campus</td>
</tr>
<tr>
<td>VEDER, HARRY E.</td>
<td>Associate Professor (Psychology)</td>
<td>M.S., Ph.D., Indiana University School of Medicine, 1972</td>
</tr>
<tr>
<td>VENERAL, Frank B.</td>
<td>Assistant Professor (Internal Medicine)</td>
<td>1979 St. Petersburg Campus</td>
</tr>
<tr>
<td>VEST, SUSAN E.</td>
<td>Assistant In (Biology)</td>
<td>M.A.; University of South Florida, 1981</td>
</tr>
<tr>
<td>VETER, HAROLD J.</td>
<td>Professor-Chairperson (Criminal Justice)</td>
<td>1974 M.A., Ph.D., State University of New York at Buffalo, 1955</td>
</tr>
<tr>
<td>VICKERY, ANN C.</td>
<td>Visiting Assistant Professor (Comprehensive Medicine)</td>
<td>1980 B.A., Ph.D., University of South Florida, 1980</td>
</tr>
<tr>
<td>VIGO, CARMEN</td>
<td>Visiting Assistant Professor (Biochemistry)</td>
<td>1979 B.Ed.; Ph.D., University of Madrid, 1979</td>
</tr>
<tr>
<td>VILLEMEL, MELVIN G.</td>
<td>Program Director (Student Personnel, Associate Professor (Educational Leadership Education), 1971</td>
<td></td>
</tr>
<tr>
<td>VINCENT, ALBERT L.</td>
<td>Assistant Professor (Comprehensive Medicine)</td>
<td>M.A.; Ed.S.; Ed.D., Nova University, 1975</td>
</tr>
<tr>
<td>VOGEL, DENIS E.</td>
<td>Assistant Professor (Mass Communications)</td>
<td>A.B.; M.A.; M.D., University of California, Los Angeles, 1976</td>
</tr>
<tr>
<td>WALBOLT, DANIEL R.</td>
<td>Vice President (Student Affairs)</td>
<td>B.S., J.D., New York University, 1965</td>
</tr>
<tr>
<td>WALDEN, ERIC L.</td>
<td>University Comptroller (Finance and Accounting)</td>
<td>B.S.; M.B.A., Eastern Michigan University, 1973</td>
</tr>
<tr>
<td>WALSH, RUTH M.</td>
<td>Associate Professor (Management)</td>
<td>A.B.; M.A.; Ph.D., University of South Florida, 1976</td>
</tr>
</tbody>
</table>

**FACULTY AND ADMINISTRATIVE STAFF**

**WALThER, JOHN D.**  Assistant Professor (English), 1965
**WALTZ, ALFRED J.**  Instructor (Management), 1979
**WANG, TING-YEUNG**  Assistant Professor (Pathology), 1978
**WAPFELD, NANCY R.**  Assistant Professor (Music Arts), 1980

**WATERFORD, DORIS L.**  Acting Coordinator (Weekend College, Continuing Education), 1977
**WEISS, AVERY H.**  Assistant Professor (Ophthalmology), 1981
**WELCH, ELIZABETH W.**  Assistant Professor (Biological Science), 1977
**WELKER, ROBERT F.**  Associate Professor (Accounting/Business Law), 1966
**WELL, DANIEL A.**  Professor (English), 1970 St. Petersburg Campus

**WEST, WILLIAM W.**  Professor (Social Science and Letters Education), 1970
**WHEELER, BARBARA A.**  Visiting Associate Professor (Afro-American Studies), 1980
**WILL, JON R.**  Professor (Computer Science Engineering), 1980
**WILLIAMSON, GEORGE H.**  Associate Professor (Chemistry), 1963
**WINSTEIN, HERMAN**  Associate Professor (Professional Physical Education, Education), 1979
**WITZEL, CHARLES I., JR.**  Assistant Professor (Surgery), 1981

**WITZEL, CHARLES J., JR.**  Assistant Professor (History), 1971
WHEELER, RAYMOND H. ............................ Professor (Sociology), 1965
B.S.; M.A.; Ph.D., University of Michigan, 1962
WHEELER, PHYLLIS D. .......................... Systems Programmer (Regional Data Center), 1981
B.A., University of South Florida, 1978
WHITE, ROBERT D. ............................... Professor (Chemistry), 1962
B.S.; Ph.D., University of Florida, 1959
WHITE, MICHAEL J. .............................. Assistant Professor (Management), 1968
B.E.E.; M.B.A.; Ph.D., University of Arizona, 1972
WHITE, ROBERT L. ............................... Visiting Assistant Professor (Social Work), 1978
A.B.; M.S.W.; University of North Carolina, 1963
WHITEFORD, LINDA M. ........................... Assistant Professor (Anthropology), 1981
B.A.; M.A., Ph.D., University of Wisconsin, Milwaukee, 1979
WHITNEY, VERNON W. ........................... Associate Professor (Social Science and Letters Education), 1966
B.A.E.; M.A., Columbia University, 1961
WHITTAKER, GERALD F. .......................... Associate Professor (Accounting), 1978
St. Petersburg Campus
B.A.; M.A.; M.B.A.; Ph.D., Northwestern University, 1974
WIEAND, KENNETH F. ............................. Associate Professor (Finance), 1981
B.S.; M.B.A., University of Wisconsin, 1977
WILLIAMS, JUANITA ............................... Assistant Professor, 1981
B.A.; M.A., University of Minnesota, 1957
WILKERSON, CURTIS W. .......................... Professor (Anthropology), 1972
B.A.; M.A., Ph.D., University of Arizona, 1973
WIGGINS, JAY R. ................................. Associate Professor (Pharmacology), 1976
B.S.; Ph.D., Columbia University, 1975
WILES, JON W. ............................ Professor (Reading Education), 1981
WILK, ROGER E. ................................. Professor (Educational Measurement and Research), 1975
B.S.; M.A., Ph.D., University of Minnesota, 1957
WILKERSON, JURY R. ............................ Grants Development Coordinator (Sponsored Research), 1981
WILETS, RUTH J. ................................. Assistant Professor (Social Work), 1981
B.A., M.S.W., University of Hawaii, 1975
WILLIAMS, CAROL A. ............................. Associate Professor (Mathematics), 1968
B.A.; Ph.D., Yale University, 1967
WILLIAMS, CHARLES C. .......................... Assistant Professor (Internal Medicine), 1980
B.S.; M.D., University of Pittsburgh, 1973
WILLIAMS, DAVID K. ............................. Assistant Professor (Theatre Arts), 1975
B.A., University of South Florida, 1973
WILLIAMS, JAMES R. ............................. Associate Professor (Anthropology), 1969
B.S.; M.A., Ph.D., Missouri University, 1971
WILLIAMS, JOSEPH F. ............................. Associate Professor (Pharmacology-Therapeutics), 1972
B.A.; Ph.D., University of Utah, 1970
WILLIAMS, JUANITA H. ........................... Professor (Interdisciplinary Social Science), 1966
A.B.; M.A., Ph.D., Temple University, 1963
WILLIAMS, MARVIN T. ........................... Assistant Professor (Biochemistry), 1978
B.S.; M.Ed.; M.S., Ph.D., Cornell University, 1976
WILLIAMS, PAUL R. ............................... Associate Professor (Pediatrics), 1979
B.S.; M.D., Washington University School of Medicine, 1969
WILLIAMS, THOMAS A. ............................ Professor (Psychiatry), 1981
A.B.; M.D., Columbia University, 1963
WILLIAMS, WALTER E. ........................... Assistant Professor (Natural Sciences), 1961
B.A., M.A.; Ed.D., Nova University, 1979
WILLIAMSON, G. BRUCE .......................... Assistant Professor (Science), 1975
B.A., B.S.; M.S., Ph.D., Indiana University, 1975
WILMOTH, FRANK R. ............................. Assistant Professor (Physics), 1979
B.S.; Ph.D., University of Missouri, 1979
WILSON, MARYLIN K. ............................ Instructor (Psychiatry), 1970
(Full time)
B.A., M.S., Wayne State University, 1968
WILSON, ROBERT M. ............................. Assistant Professor (Economics), 1978
B.A.; M.A., Ph.D., Northwestern University, 1977
WILSON, THOMAS C. .............................. Associate Professor (Library, Media and Information Science), 1969
B.S., M.A., Ed.D., Wayne State University, 1970
WIMMERT, ROBERT J. ............................. Professor (Industrial and Management Systems Engineering), 1964
B.S.M.E., M.S.I.E., Ph.D., Purdue University, 1957
WINCH, ANNABELLE M. ........................... Assistant to Vice President (Student Health Service, Student Affairs), 1960
B.A., M.A., University of South Florida, 1969, R.N.
WINSOR, WILLIAM J. .............................. Lecturer (Fine Arts Events), 1981
B.A.; M.F.A., Ohio State University, 1981
WOLFE, ALVIN W. ................................. Professor (Anthropology), 1974
A.B.; Ph.D., Northwestern University, 1957
WOODBURY, ARTHUR N. .......................... Associate Professor (Music Arts), 1972
B.S., M.M., University of Idaho, 1955
WOOLFENDEN, GLEN E. ........................... Professor (Biology), 1960
B.S.; M.A.; Ph.D., University of Florida, 1960
WORRELL, JAY H. ................................. Professor (Chemistry), 1967
B.S.; M.S.; Ph.D., Ohio State University, 1966
WRIGHT, D. R. EDWARD ........................... Assistant Professor (Visual Arts), 1980
B.A.; M.F.A., Ph.D., Princeton University, 1976
WRONG, CHARLES J. .............................. Lecturer (History), 1970
WUCIK, THEODORE F. ............................. Associate Professor (Visual Arts), 1970
YEGIDIS, BONNIE L. .............................. Assistant Professor (Social Work), 1977
ZERLA, FREDRIC J. ............................... Associate Professor (Mathematics), 1966
W. S.; M.A.; M.S.; Ph.D., Louisville University, 1973
ZARCO, CAROL W. ............................... Lecturer (English), 1965
B.A., M.A.; Ph.D., Ohio State University, 1964
WAGNER, DAVID ................................. Associate Professor (Administrative Law), 1984
B.S.; M.A.; M.P.H.; M.D., Far Eastern University, 1970
YANGCO, WILLIAM J. ............................. Associate Professor (Engineering), 1981
B.S.; M.A., M.F.A., Florida State University, 1976
YING, SHU-HING ................................. Associate Professor (Mechanical Engineering), 1978
B.S.; M.S.; Ph.D., Harvard University, 1965, P.E.
YODER, CHRIS ............................. Assistant Professor (Art and Music Education), 1978
B.S.; M.Ed., University of Illinois, 1978
YODER, MYRA S. ................................. Associate University Librarian (Extension Library), 1979, St. Petersburg Campus
B.S., M.S., Florida State University, 1972
YOUNG, JANE F. ................................. Assistant Professor (Professional Physical Education, Education), 1970
B.S., M.S., Florida State University, 1967
YOUNG, JOANNE E. .............................. Associate Professor (Elective Physical Education, Education), 1961
B.S.; M.Ed., University of North Carolina, 1955
YOUNG, JOHN E. ................................. Director (Radio Stations), 1975
B.S.; M.A., Illinois State University, 1967
ZBAR, FLORA J. ................................. Assistant Professor (English), 1965
B.A.; M.A., Florida State University, 1962
ZERLA, FREDRIC J. .............................. Associate Professor (Mathematics), 1963
B.A.; M.S., Ph.D., Florida State University, 1967
ZIEBURTZ, ROBERT H. ............................ Assistant Professor (Neurology), 1980
B.S.; M.D., University of Basel Medical School, Switzerland, 1967
ZINOFER, JOAN W. .............................. Visiting Assistant Professor (Psychiatry), 1980
B.A.; M.A., Ph.D., University of Connecticut, 1970
ZUREICH, RAYMOND ............................. Director (Internal Auditing), 1981
B.S.; M.A., M.B.A., University of South Florida, 1972
ZYLSTRA, SAPE A. ............................... Associate Professor (Humanities), 1969
B.A.; B.S.; Ph.D., Emory University, 1969
ABBEY, WALTER R. .......... Lecturer (Engineering), 1966-1980
AGENS, FREDERIC F. (Deceased) .......... Lecturer (Physical Science), 1960-1971
AGENS, JEANETTE F. .......... Assistant Professor (Education), 1963-1972
ALLEN, EDMUND E. ...... Associate Professor (Interdisciplinary Social Science), 1964-1981
ALLEN, JOHN S. ........... President Emeritus, 1957-1970
ANDERSON, CELIA L. ...... Assistant Professor (Education), 1967-1976
ANDERSON, LOUIS V. ....... Associate Professor (Psychological and Social Foundations Education), 1963-1980
ASHFORD, THEODORE ........ Professor Emeritus (Chemistry), Dean Emeritus (Natural Sciences), 1960-1981
AULETA, MICHAEL S. .... Professor (Education), 1967-1973
AUSTIN, MARTHA L. ...... Professor Emeritus (Reading Education), 1963-1980
BEAUCHAMP, GEORGE E. .... Associate Professor (English), 1960-1971
BILLINGSLEY, EDWARD B. .. Associate Professor (History), 1967-1977
BOULWARE, JOE W. .......... Lecturer (Geology), 1961-1973
BRITTON, JACK R. ....... Professor Emeritus (Mathematics), 1967-1976
BRUSCA, DONALD J. ....... University Physician (Student Health Center), 1965-1973
CARR, ROBERT S. .......... Visiting Lecturer (Mass Communications), 1968-1974
CHEN, CHUNG HNAN .... Professor Emeritus (Philosophy), 1965-1975
CLARK, CLARENCE C. .... Professor Emeritus (Physical Science), 1960-1969
CLEARY, FLORENCE D. . ....... Lecturer (Education), 1964-1969
CLOSE, JAMES A. ....... Professor Emeritus (Finance), 1971-1975
CLOUGH, W. LYNNON .......... Professor Emeritus (Humanities), New College of USF, 1975-1980 Sarason Campus
COOK, DORIS ........... Department Head and University Librarian (Libraries), 1968-1979 St. Petersburg Campus
COPPER, RUSSELL M. (Deceased) ....... Dean Emeritus (Liberal Arts), Professor (Interdisciplinary Social Science), 1959-1975
COWELL, GEORGE J. ....... Professor Emeritus (Engineering), 1960-1973
CRAIG, CALVERT J. .. Associate Professor (Educational Leadership Education), 1967-1981
CRICKENBERGER, MARGARET E. .. Professor Emeritus (Physical Education, Education), 1961-1979
DAUGHERTY, GEORGE G. .......... Lecturer (Mass Communications), 1972-1980
DEAN, HARRIS W. .......... Vice President Emeritus (Academic Affairs), 1961-1971
DEYO, WILLIAM A., JR. .... Associate Professor (Accounting), 1960-1973
DOWNEY, PAUL M. .......... Professor Emeritus (Industrial Systems Engineering), 1966-1977
DUBOIS, LEADORE D. ....... Associate Professor (Childhood and Language Arts Education), 1964-1980
DUNN, EDGAR H. .......... Lecturer (Accounting), 1970-1981 St. Petersburg Campus
Dwyer, ROY E. ......... Lecturer (Childhood and Language Arts Education), 1967-1978
FERNNELIUS, W. CONARD ...... Distinguished Professor Emeritus (Chemistry), 1970-1975
FERRIS, MARY W. .......... Associate University Librarian (Libraries), 1971-1981 St. Petersburg Campus
FORMAN, GUY .......... Professor Emeritus (Physics), 1962-1972
FOURT, LUCILLE C. (Deceased) .......... Lecturer (Counseling Center), 1963-1973
FRENCH, SIDNEY J. (Deceased) .......... Dean Emeritus Academic Affairs and Professor (Education), 1958-1969
GLENISSON, EMILE G. .... Associate Professor Emeritus (Foreign Languages), 1967-1977
HARTLEY, JACQUETTA W. .... Instructor (English), 1960-1972
HAVEN, JULIA M. (Deceased) .... Professor Emeritus (Education), 1969-1974
HEARN, THOMAS K. ....... Assistant Professor (Education), 1967-1977
HICKMAN, WILLIAM .......... Assistant Professor (English), 1963-1969
HUNNICUTT, CLARENCE W. (Deceased) .. Professor (Education), 1967-1977
JAESCHKE, DONALD J. .... Associate Professor (Adult and Vocational Education), 1963-1979
JAMES, ROSELLA ....... Assistant Professor (Economics), 1967-1979
JOHNSON, GORDON A. .... Professor (Music Arts), 1963-1981
JURGENSEN, LOUIS C. .... Professor (Accounting), 1966-1981
KAPLAN, MAX ....... Professor (Sociology), 1967-1978
KAUDER, EMIL ....... Distinguished Lecturer Emeritus (Economics), 1968-1973
KELLER, WALTER D. ....... Professor (Geology), 1970-1973
LAKELA, OLGA (Deceased) .... Research Associate (Botany), 1960-1970
LEVITT, ROBERT ...... Director (Admissions, Student Affairs), 1968-1981
LOW, EDMON ....... Librarian Emeritus (Sarasota Library), 1975-1980
LUCKENBACH, LEON R. .... Associate Professor (Mathematics), 1960-1974
MACKAY, E. MAXINE ....... Professor Emeritus (Humanities), 1961-1980
MERRIAM, HARLAND C. .... Professor (Childhood and Language Arts Education), 1969-1981
MILLER, GEORGE H. ....... Program Director (Southeast Center Cooperative Education Grant), 1960-1980
NELSON, GID E., JR. ....... Professor Emeritus (Biology), 1960-1981
NEUBERGER, HANS H. .... Professor Emeritus (Geography), 1971-1974
NOER, RUDOLF J. ....... Professor Emeritus (Surgery), 1970-1977
OBERMEYER, CHARLES (Deceased) .......... Lecturer (American Idea), 1964-1970
O'HARE, LEO H. .......... Lecturer (English), 1960-1969
PALM, JOHN W. ....... Assistant Professor Emeritus (Interdisciplinary Social Science), 1970-1981
PEPE, JAMES S. ....... Lecturer (Education), 1969-1976
PREScott, GERALD R. .... Associate Professor (Music Education), 1967-1972
RIMBEY, DONALD H. ....... Professor (Energy Conversion Engineering), 1963-1980
ROBERSON, BRUCE W. ...... Lecturer (Accounting), 1966-1976 St. Petersburg Campus
ROTHWELL, STUART C. .... Professor Emeritus (Geography), 1965-1979
SANDERSON, ARTHUR M. .... Professor Emeritus (Mass Communications), 1965-1981
SALIN, CHARMAEL J. ....... Professor Emeritus (Speech), 1960-1970
SEXTON, IRENE ....... Associate Professor (Childhood and Language Arts Education), 1969-1979
SHACKNASS, L. LEE ....... Professor Emeritus (Humanities), 1964-1974
SHANNON, ROBERT L. ....... Professor (Childhood and Language Arts Education), 1960-1981
SILVER, JAMES W. ....... Professor Emeritus (History), 1969-1979
SMITH, B. OTHANEL ....... Professor Emeritus (Education), 1969-1975
SMITH, NORMAN V. ....... Lecturer (Engineering), 1968-1975
SOKOLSKY, ANATOLE ....... Associate Professor (Modern Languages), 1961-1972
STANTON, EDGAR E., JR. .... Professor (American Studies), 1960-1977
STONE, LEO D. ........ Lecturer (Finance), 1974-1981 St. Petersburg Campus
STUBBLEBINE, ALBERT N., JR. .... Assistant Professor (Engineering), Coordinator (Cooperative Education Program), 1964-1968
SULLIVAN, MARY S. .... University Librarian (Educational Resources), 1968-1979
TIPTON, HENRY C. ....... Assistant Professor (Psychology), 1965-1980
TOOTHMAN, REX C. ....... Associate Professor (Adult and Vocational Education), 1970-1980
TWIGG, JOHN F. ....... Associate Professor (Engineering), 1964-1981
UBERANEK, RAYMOND A. (Deceased) .... Professor (Measurement and Research Education), 1961-1981
WARD, ANNIE ....... Professor (Measurement and Research Education), 1972-1980
WARNER, ROBERT A. ....... Professor Emeritus (Interdisciplinary Social Science), 1960-1975
WILEY, RUSSELL W. Professor-Coordinator (Education), 1966-1975
WINTHROP, HENRY (Deceased) Professor Emeritus (Interdisciplinary Social Science), 1960-1978

WUNDERLICH, HERBERT J. Vice-President For Student Affairs Emeritus (Student Affairs), 1962-1972
WURSTER, MARGUERITE S. Associate Librarian (SUS Extension Library), 1965-1978 St. Petersburg Campus
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