CELERATED COURSE IN THE ANCIENT GREEK (ATTIC) LANGUAGE AND INTRODUCTION TO ORIGINAL GREEK LITERATURE. (ALTERNATE YEARS.)

CLS 341-342-343. BASIC HEBREW (3, 3, 3)

designed to give students a working knowledge of classical (biblical) hebrew and to introduce them to the biblical literature in the original language.

CLS 351. CLASSICAL MYTHOLOGY (4)

study of the more important myths of the greeks and romans as laid down in classical literature and of the impact that classical mythology made on modern western and, in particular, english literature.

CLS 359. CLASSICAL WORD ROOTS IN SCIENCE (2)

da course in the greek and latin word stock used in all sciences (including medicine), technology, and law. students' needs determine specific content of the course.

CLS 371. FOUNDATIONS OF LANGUAGE (4)

introduction to synchronic linguistics, basic concepts, general features of language. dialects, kinship groups, language types, writing systems. methods or structural analysis with emphasis on the trubetzkoy-jacobson approach. (alternate years.)

CLS 383. SELECTED TOPICS (2-5)

course contents depend on student demand and instructor's interest and may range over the field of latin language, literature, or civilization.

CLS 401-402-403. ADVANCED GRAMMAR AND COMPOSITION (3, 3, 3)

pr: cls 201 plus any two of cls 202, 203, 301, 302, 303, or 4 years high school latin. difficult parts of morphological and syntactic structure. exercises in advanced translation and composition. theory of literature: genres, styles, figures of speech, principles of oratory and versification. (alternate years.)

CLS 411-412-413. LATIN LITERATURE AND BACKGROUNDS (3, 3, 3)

pr: same as for cls 401. fast survey of greek literature, discussion of roman dependence on greek literary topics, concepts and forms. survey of latin literature from ennius to augustine. study and interpretation of sample texts by authors not read earlier. (alternate years.)

CLS 483. SELECTED TOPICS (2-5)

course contents depend on student demand and instructor's interest and may range over the whole field of ancient languages, literatures, and civilizations, in particular latin, greek, and hebrew. enrollment can be repeated for different topics.

CLS 485. DIRECTED READING (2-5)

readings in special topics chosen by the student in cooperation with the instructor. reading of literature also possible in english translation. arrangement with department chairman before registration necessary.

FOR UPPER LEVEL AND GRADUATE STUDENTS

CLS 517. LATINO-ROMANCE LINGUISTICS (4)

pr: background in latin or a romance language. case study of linguistic development of 4,000 years from proto-arian through latin to modern romance languages.

CLS 527. GREEK CIVILIZATION (4)

pr: cls 321 or a course in greek history or ci. detailed study of the aegean and hellenic civilizations from their beginnings in crete to the roman period. greek discoveries, explorations, and colonization. (alternate years.)

CLS 529. ROMAN CIVILIZATION (4)

pr: cls 321 or 527 or a course in roman history; or latin major; or ci. pre-historic italy and the etruscan civilization. history of the civilization of rome
DANCE

Faculty: Chifra Holt

DAN 201. MODERN DANCE I (3)
Study of basic principles of modern dance technique, for those without previous

and the Empire with emphasis on the Greek, Carthaginian, and Oriental influences. (Alternate years.)

CLS 571. LANGUAGE IN CHANGE (4)
Principles of diachronic (historical) and comparative linguistics. Causes and documentation of change, research methods. History of writing. Genealogy of languages, glottogetic theories. Ethnolinguistics. (Alternate years.)

CLS 573. SELECTED TOPICS (2-5)
For description see CLS 483.

CLS 583. INDIVIDUAL RESEARCH (2-5)
PR: CI. Specialized individual work in particular areas of student's interests.

CLS 585. DIRECTED READING (2-5).
For description see CLS 485.

COOPERATIVE EDUCATION


COE 071. COOPERATIVE EDUCATION ORIENTATION (0)
Course content covers career planning via the Cooperative Education Program and explores values of cooperative education, blending of theory and practice.

COE 171. COOPERATIVE EDUCATION, 1ST TRAINING PERIOD (0)
PR: 24 hours of academic credit, acceptance in Cooperative Education Program.

COE 172. COOPERATIVE EDUCATION, 2ND TRAINING PERIOD (0)
PR: COE 171.

COE 271. COOPERATIVE EDUCATION, 3RD TRAINING PERIOD (0)
PR: COE 172.

COE 272. COOPERATIVE EDUCATION, 4TH TRAINING PERIOD (0)
PR: COE 271.

COE 371. COOPERATIVE EDUCATION, 5TH TRAINING PERIOD (0)
PR: COE 272.

COE 372. COOPERATIVE EDUCATION, 6TH TRAINING PERIOD (0)
PR: COE 371.

COE 400. COOPERATIVE EDUCATION RESEARCH REPORT (1-5)
PR: COE 071.

COE 471. COOPERATIVE EDUCATION, 7TH TRAINING PERIOD (0)
PR: COE 372.

COE 472. COOPERATIVE EDUCATION, 8TH TRAINING PERIOD (0)
PR: COE 471.

COE 571. COOPERATIVE EDUCATION, 9TH TRAINING PERIOD (0)
PR: COE 472.

COE 572. COOPERATIVE EDUCATION, 10TH TRAINING PERIOD (0)
PR: COE 571.

COE 671. COOPERATIVE EDUCATION, TRAINING PERIOD (0)

COE 672. COOPERATIVE EDUCATION, TRAINING PERIOD (0)

COE 771. COOPERATIVE EDUCATION, TRAINING PERIOD (0)

COE 772. COOPERATIVE EDUCATION, TRAINING PERIOD (0)

COE 871. COOPERATIVE EDUCATION, TRAINING PERIOD (0)

COE 872. COOPERATIVE EDUCATION, TRAINING PERIOD (0)
training. Practical work in beginning exercises and movement phrases utilizing changing rhythms and dynamics.

DAN 202. BALLETT I (3)
Study of basic positions, barre and fundamental steps using the ballet vocabulary. For those without previous ballet training. Practical work in class.

DAN 301. MODERN DANCE II (3)
PR: DAN 201 or CI. Continuation of DAN 201. Further emphasis on style and phrasing. Work in projecting mood and quality by dancing and rehearsing in more advanced student choreography, leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 302. BALLETT II (3)
PR: DAN 202 or CI. Continuation of DAN 202, progressing into adagio and allegro. Application of phrasing and style. May be repeated.

DAN 303. CHOREOGRAPHY I (3)
An introduction to shaping the materials of dance. Preparation of studies in rhythm, dynamics, form and motivation, culminating in a solo. Successful dance compositions will be given a full production and performed with accompaniment, light and costuming to be arranged by the student. Reading, lecture, laboratory.

DAN 313. HISTORY OF DANCE TO THE 20TH CENTURY (3)
Study of the development of dance from its inception through the nineteenth century. Reading, lecture.

DAN 401. MODERN DANCE III (3)
PR: DAN 301 or DAN 302 or CI. Continuation of DAN 301 on an advanced level. Work in improvisation and individual invention creating an awareness of many possibilities of movement. Dancing in student choreography leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 402. BALLETT III (3)
PR: DAN 302 or DAN 301 or CI. Continuation of DAN 302. Introducing pointe work. Each class member will dance in student choreography. Rehearsal hours to be arranged. May be repeated.

DAN 403. CHOREOGRAPHY II (3)
PR: DAN 303 or CI. Continuation of DAN 303. Work directed toward duets and group dances. The students will submit choreographic ideas for instructor's approval, then proceed with rehearsals. The best dances will be performed and fully produced under supervision of student choreographers. Reading, lecture, laboratory.

DAN 413. HISTORY OF 20TH CENTURY BALLETT (3)

DAN 481. DIRECTED STUDY (1-6)
PR: CC. May be repeated. Independent studies in the various areas of Dance. Course of study and credits must be assigned prior to registration.

DAN 501. MODERN DANCE IV (3)
PR: DAN 401 or DAN 402 or CI. Continuation of DAN 401. Intensive work on the growth of personal performance style as a means to communication. Equal emphasis will be given to training the body in the development of technical excellence. Dancing in student choreography leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 502. BALLETT IV (3)
PR: DAN 402 or DAN 401 or CI. Continuation of Dan 402. Great emphasis to final shaping of the body into excellent execution and projection of Ballet technique. Dance in student choreography leading to performance. Rehearsal hours to be arranged. May be repeated.

DAN 503. PRODUCTION (3)
Admission by audition. Open to all university students and required of dance
majors for two quarters. The rehearsal and stage performance of new choreography. Actual production work in which members of the class assist the choreographer in costumes, taping and props. May be repeated.

**DAN 513. HISTORY OF MODERN DANCE (3)**
Study of the development of modern dance in the 20th Century in America; the different techniques, concepts in choreography and leading artists of our time. Reading, film, and lecture.

**DEVELOPMENTAL MATHEMATICS**

**DMA 001. BASIC CONCEPTS OF ALGEBRA (0)**
A programmed learning course in algebra from a modern point of view for the convenience of persons without adequate knowledge of simple algebraic manipulations and for persons without adequate preparation for MTH 101.

**DMA 002. ANALYTICAL TRIGONOMETRY (0)**
A programmed learning course in the study of the trigonometric functions as functions of real numbers and their application to triangles.

**ECONOMICS**

Faculty: Pasternak, chairman; J. A. Anderson, R. H. Burton, J. P. Cooke, Davey, Forbes, Herman, Hotson, James, Kauder, Kennedy, Kozelka, McElhattan, Mellish, Murphy, R. F. Shannon, Shows, Small, Whartenby

**ECN 201. ECONOMIC PRINCIPLES I (4)**
Economics as a social science; theoretical analysis of price determination of the product and factor markets.

**ECN 202. ECONOMICS PRINCIPLES II (4)**
Accounting, analytical and policy aspects of national income with emphasis on the theory of income determination; analysis of money and banking system; and survey of international trade theory and policies.

**ECN 301. INTERMEDIATE PRICE THEORY (5)**
PR: ECN 201-202. Advanced analysis of supply and demand as related to competition and monopoly; application of economic theory to product pricing and recourse pricing.

**ECN 311. LABOR ECONOMICS (4)**
PR: ECN 201-202 or CL. History of the trade union movement; economic analysis of trade union philosophies and practices; examination of basic influences affecting labor force, real wages and employment; collective bargaining and labor law.

**ECN 313. COLLECTIVE BARGAINING (5)**
PR: ECN 311. The administration of labor-management arguments, mediation and arbitration of industrial disputes and governmental role in collective bargaining.

**ECN 323. INTERMEDIATE INCOME AND MONETARY ANALYSIS (5)**
PR: ECN 201-202. Advanced analysis of national income and monetary theory with emphasis on the modern theory of income determination and the functioning of the monetary system.

**ECN 331. BUSINESS AND ECONOMIC STATISTICS I (5)**
PR: Proficiency test in algebra, or consent of instructor. The collection, presentation, analysis, and interpretation of quantitative data as they pertain to economic and business problems. This course should be taken, at the latest, in the junior year. Students who successfully complete one or both of these courses may not
also receive credit for either SSI 301 Social Science Statistics or MTH 345 Introductory Statistics.

ECN 341. ECONOMICS OF TRANSPORTATION (4)
PR: ECN 201-202. Functions of transportation agencies, rate structure of transportation companies, problems of state and federal regulations and coordination of transportation facilities.

ECN 345. ECONOMICS OF PUBLIC UTILITIES (4)

ECN 351. INTERNATIONAL ECONOMICS (4)
PR: ECN 201-202. The principles and mechanisms of trade, exchange, balance of payments, comparative costs, effects of trade restrictions and economic growth of underdeveloped areas.

ECN 361. INTRODUCTION TO MATHEMATICAL ECONOMICS (4)
PR: CBS 109-110, ECN 201-202, and 331. The principal mathematical tools and techniques used in economic analysis and economic research.

ECN 371. AMERICAN ECONOMIC HISTORY (4)
PR: ECN 201-202. The growth and evolution of American economic institutions from Colonial times to the present.

ECN 401. HISTORY OF ECONOMIC THOUGHT (5)
PR: ECN 201-202. A historical survey of the development of economic theory and the main streams of economic thought, including philosophical and value aspects of economic thought.

ECN 405. COMPARATIVE ECONOMIC SYSTEMS (4)
PR: ECN 201-202. An emphasis on the theoretical and practical differences between economic systems such as capitalism, socialism, and communism.

ECN 411. LABOR RELATIONS AND PUBLIC POLICY (4)
PR: ECN 311. Problems resulting from legislative and judicial interpretation of the rights, duties and responsibilities of labor unions and employers; public policy in labor-management negotiations; survey of legislation designed to protect workers.

ECN 423. PUBLIC FINANCE (5)

ECN 431. BUSINESS AND ECONOMIC STATISTICS II (4)
PR: ECN 331. Basic probability distributions, theory of statistical estimation, tests of hypotheses, design of experiments. Introduction to non-parametric statistics.

ECN 437. BUSINESS—GOVERNMENT RELATIONSHIPS (4)
PR: ECN 201-202. Patterns of regulations such as control of competitive enterprise, cartels and monopolies by the government. Government regulations and economic planning applied to politically determined economic goals.

ECN 451. INTERNATIONAL COMMERCIAL POLICIES (4)
PR: ECN 351. Geographic, social, political and related factors influencing commercial trade policies. Special emphasis on economic consequences of alternative courses of action.

ECN 461. THEORY OF ECONOMIC DEVELOPMENT (4)
PR: ECN 323 or CI. Problems, policies, and dynamics of economic growth in emerging nations. The benefits and relevance of the theory of economic development is examined within the context of the social and political milieu of today's underdeveloped areas.

ECN 471. THEORY OF ECONOMIC DYNAMICS (4)
PR: ECN 323. Economic theories of the business cycle and growth processes. Empirical studies, models for forecasting, and problems of policy are also considered.
ECN 489. SEMINAR IN SELECTED ECONOMIC TOPICS
(Variable 3-5 hours)
PR: Senior Standing and CI.
Topics to be selected by the instructor or instructors on pertinent economic issues.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ECN 501. ECONOMIC PRICE THEORY (3)
Theoretical analysis of micro-economics.

ECN 502. ECONOMIC NATIONAL INCOME THEORY (3)
PR: ECN 501. Analytical and policy aspects of macroeconomic theory.

ECN 503. STATISTICS OF BUSINESS (3)
The analysis and interpretation of quantitative data pertinent to the solution of economic problems.

FOR GRADUATE STUDENTS ONLY

ECN 601. RESEARCH METHODOLOGY (3)
PR: ECN 331 or 503 or equivalent. An investigation of research concepts, objectives, and methods including an introduction to linear programming, game theory, and end-use analysis.

ECN 603. MANAGERIAL STATISTICS I (3)
PR: ECN 331 or 503, or equivalent. The use of economic and business data in managerial control and analysis with an introduction to forecasting. Collection and presentation of data, tables charts, index numbers, linear and nonlinear secular trends, constant and changing periodic movements, and estimating cyclical fluctuations.

ECN 604. MANAGERIAL STATISTICS II (3)
PR: ECN 331 or 503, or equivalent. Simple and multiple correlation and regression analysis with applications in estimating and forecasting and an introduction to the use of statistical inference in managerial decisions.

ECN 605. MANAGERIAL ECONOMICS (3)
PR: ECN 201 and 202 or equivalent. An investigation of the concepts, tools and methods of micro-economics analysis.

ECN 607. AGGREGATE ECONOMICS (3)
PR: ECN 605. An analysis of monetary and fiscal policy measures designed to moderate economic fluctuations. The theory of national income determination.

ECN 608. APPLIED ECONOMIC ANALYSIS (3)
PR: ECN 605-607. The application of micro and macro principles to business decision-making.

EDUCATION

Art Education

EDA 377. THEORETICAL BASES IN ART EDUCATION (3)
A study of the philosophical, psychological and historical bases upon which contemporary art education practice is developed.

EDA 379. ART IN THE ELEMENTARY SCHOOL (3)
PR: EDA 377. Art expressions appropriate for elementary school pupils at each grade level. EDA 498 to be taken concurrently.

EDA 441. TEACHING METHODS IN THE SECONDARY SCHOOL ART (4)
PR: EDA 377. Techniques and materials of instruction in art, on the secondary level. EDA 498 to be taken concurrently.

EDA 498. FIELD WORK IN ART EDUCATION (2-6)
PR: CI. Supervised participation in activities related to art education in community centers, non-school youth programs, planned workshops and research.

FOR GRADUATE STUDENTS ONLY

EDA 660. HISTORICAL AND PHILOSOPHICAL FOUNDATIONS OF ART EDUCATION (4)
Past and contemporary philosophies and practices in art education.

EDA 661. ADMINISTRATION AND SUPERVISION OF ART EDUCATION (4)
Principles of administration and supervision of art programs in the school.

EDA 682. RESEARCH SEMINAR IN ART PROGRAM (4)
PR: EDA 660 or CI. Literature and research in art education. Various approaches to problem solving and evaluation with emphasis on individual research.

Curriculum

EDC 101. INTRODUCTION TO TEACHING (4)
The people with whom teachers work, the types of tasks they perform and the challenges they can anticipate. Observation of teaching at several grade levels.

EDC 401. CURRICULUM AND INSTRUCTION (5)
PR: EDF 305 and 307, and admission to a teacher education program. Structure and purposes of curriculum organization with special emphasis on the quality of curriculum.

EDC 480. DIRECTED STUDY (1-4)
Extension of competency in teaching field.

EDF 481. INDIVIDUAL RESEARCH (1-4)
PR: Senior standing and consent of program coordinator.

EDC 485. DIRECTED READINGS (1-4)
PR: Senior standing and consent of program coordinator.

EDC 498. SENIOR SEMINAR IN EDUCATION (3)
PR: Senior standing. Synthesis of teacher candidate's courses in his complete college program. Required concurrently with student teaching.

EDC 499. SUPERVISED TEACHING (1-12)
One full quarter of student teaching in a public or private school. Student teacher takes Senior Seminar in Education concurrently. In special programs
where the intern experience is distributed over two or more quarters, students will be registered for credit which accumulates to 12 quarter hours.

**EDC 501. CURRICULUM AND INSTRUCTION: (ELEMENTARY OR SECONDARY)** (5)
Curriculum scope, sequence, and interrelationships, with a critical evaluation of current trends.

**EDC 510. HEALTH PROBLEMS IN CHILDREN** (4)
Health problem prevalent in the culturally disadvantaged child and the teacher's role in referral or educational adaptation in classroom activities.

**EDC 511. ORGANIZATION OF COURSE CONTENT FOR INDUSTRIAL EDUCATION TEACHERS** (4)
Preparation for instruction to include occupational analysis, organization of content, lesson planning and basic procedures of pedagogy.

**EDC 515. DIRECTING SPEECH ACTIVITIES IN THE SECONDARY SCHOOL** (4)
Coaching and directing co-curricular activities in discussion, debate, oratory, oral interpretation, and extemporaneous speaking. Planning and supervision of forensic tournaments and speech contests.

**FOR GRADUATE STUDENTS ONLY**

**EDC 661. PRINCIPLES OF EDUCATIONAL SUPERVISION** (4)
PR: Course in general curriculum. Instructional leadership with emphasis on organization for curriculum improvement and in-service growth for professional school personnel.

**EDC 671. PRINCIPLES OF EDUCATIONAL ADMINISTRATION** (4)
Educational administration as a profession. Consideration is given to organization control, and support of the educational system.

**EDC 681. DIRECTED STUDY: (Subject)** (1-4)
Extension of competency in teaching field.

**EDC 685. SCHOOL CURRICULUM IMPROVEMENT** (4)
Workshop for the improvement of the curriculum of an elementary or secondary school. Open only to teachers in service. Complete faculty participation required.

**EDC 689. SUBJECT SPECIALIZATION PLANNING: SECONDARY** (4)
Individually planned course in a secondary school subject area for in-service teachers.

**EDC 691. INTERNSHIP** (4-9)
PR: CI. Supervised teaching at the secondary or junior college level as appropriate.

**EDC 699. THESIS** (1-9)

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**Elementary Education**

**EDE 409. READING FOR THE CHILD** (5)
PR: CBS 101-102. Readiness, word recognition, (phonic, visual and contextual analysis) development of word meanings, basic study skills, comprehension abilities and reading interests.

**EDE 411. LANGUAGE ARTS FOR THE CHILD** (4)
PR: CBS 101-102. Speaking, writing, reading and listening experiences of children and ways these skills are developed for individual creative expression.

**EDE 413. LITERATURE FOR THE CHILD** (4)
EDE 415. ARITHMETIC FOR THE CHILD (5)

EDE 417. SCIENCE FOR THE CHILD (5)

EDE 419. SOCIAL STUDIES FOR THE CHILD (5)
PR: CBS 301, 302, 303. Significant concepts in the subjects concerned with human relationships. Emphasis upon teaching pupils to solve rather than be engulfed by social problems.

EDE 421. ART FOR THE CHILD (4)
PR: Any three CBS Humanities courses. Art and the intellectual, creative, emotional, and esthetic growth of children.

EDE 423. MUSIC FOR THE CHILD: SKILLS (2)
Voice production, music reading, creative composition and some instrumental experience. School song materials used to support this work.

EDE 424. MUSIC FOR THE CHILD: METHODS (3)
PR: Any three CBS Humanities courses, EDE 423. Music literature and teaching aids for children including singing, rhythmic, creative, instrumental, and listening experience and their presentation.

EDE 425. HEALTH, PHYSICAL EDUCATION FOR THE CHILD (4)
Motivating factors of play; knowledge and skill in basic rhythmic activities; games and stunts; health instruction for the child.

EDE 426. CREATIVE ARTS IN EARLY CHILDHOOD EDUCATION (3)
The development of the child's creative expression through art, music, dance, play, and drama: included are the materials, contest, and teaching techniques.

EDE 431. ART FOR EARLY CHILDHOOD (3)
Art, presenting the principles, practices and materials to be used in relation to the characteristics of the young child ages 3-8.

EDE 433. MUSIC FOR EARLY CHILDHOOD (3)
Singing, rhythmic, creative, instrumental and listening experience relevant to early-childhood.

EDE 440. TEACHING METHODS IN THE ELEMENTARY SCHOOL (4)
Suggested Co-requisite: EDC 401. Process of teaching elementary school subjects. To be taken quarter prior to internship.

EDE 519. SOCIAL GROWTH IN CHILDHOOD (4)
A study of the principle 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.

EDE 527. DEVELOPMENTAL PROCESSES IN EARLY CHILDHOOD (4)
The normal processes of development among children ages 3-8, the relation between these characteristics and the curriculum: child study through observation required.

EDE 529. PROGRAMS IN EARLY CHILDHOOD EDUCATION (5)
A study of school programs for nursery, kindergarten, and primary education. Analysis and evaluation of these programs in the light of the most effective current classroom practices.

EDE 531. LANGUAGE AND LEARNING IN EARLY CHILDHOOD (4)
A study of the successive stages of development in language and learning during the child's formative years. Theories of learning and of language development.

EDE 539. WORKSHOP IN EARLY CHILDHOOD EDUCATION (4)
Individual problems and innovations related to methods and materials of instruction in the early childhood grades.

* The purchase of a coupon book to cover expendable items may be required for these courses.
FOR GRADUATE STUDENTS ONLY

EDE 603. SEMINAR IN CURRICULUM RESEARCH (1-5)
PR: EDF 607. Critical evaluation of current research and curriculum literature, design and analysis of individual research topics leading to satisfaction of research requirement.

EDE 609. TRENDS IN READING IN THE ELEMENTARY SCHOOL (4)
PR: EDE 409 or equivalent. Extensive study of recent trends in materials, approaches and procedures in teaching reading in the elementary schools.

EDE 611. TRENDS IN LANGUAGE ARTS INSTRUCTION (4)
PR: EDE 411 and 413. Advanced materials and processes of instruction in elementary school language arts programs.

EDE 613. CREATIVE ARTS INSTRUCTION (4)
Creative processes in the teaching of visual arts, music, dance, and drama to elementary school pupils.

EDE 615. TRENDS IN MATHEMATICS INSTRUCTION (4)
PR: EDE 415 or equivalent. Philosophy, content and process of qualitative instruction in modern mathematics in elementary school programs.

EDE 617.* TRENDS IN SCIENCE INSTRUCTION (4)
PR: EDE 417. Topics in the biological and physical sciences appropriate for teaching in excellent elementary school programs. Analysis of modern curriculum materials used in presenting science as a process of inquiry.

EDE 619.* TRENDS IN SOCIAL STUDIES INSTRUCTION (4)
Crucial concepts drawn from the social sciences. Analysis of the problems approach. Students will select an area of independent study on an advanced level.

EDE 621.* ART FOR THE ELEMENTARY SCHOOL TEACHER (4)
Exploration of various materials and techniques in relationship to current theories about art and the intellectual, creative, emotional and esthetic growth of children.

EDE 641. PROBLEMS IN SUPERVISION (4)
PR: EDF 607 or equivalent and EDC 661. Problems in supervising for curriculum improvement within the elementary school.

EDE 687. SUBJECT SPECIALIZATION PLANNING: ELEMENTARY (4)
Individually planned course in an elementary school subject area for in-service teachers.

Foundations

EDF 303. INTRODUCTION TO MEASUREMENT AND EVALUATION (4)
Elementary concepts basic to a general understanding of measurement and evaluation procedures. Students may not receive credit for both EDF 303 and PSY 413 Tests and Measurement in Psychology.

EDF 305. HUMAN DEVELOPMENT AND LEARNING (4)
PR: CBS 201, 203 and 75 hours completed. Physiological and psychological growth patterns; learning theories, personality adjustment, and appraisal of the various forces affecting learning and personality. Credit cannot be earned for both EDF 305 and EDF 377. Should not be taken concurrently with EDF 307.

EDF 307. SOCIAL FOUNDATIONS OF EDUCATION (4)
PR: 75 hours completed. Social, economic and political context within which schools function and the values which provide direction for our schools; the

* The purchase of a coupon book to cover expendable items may be required for these courses.
culture as a motivating influence in instruction. Should not be taken concurrently with EDF 305.

EDF 309. PHILOSOPHY OF EDUCATION (4)
A critical analysis of selected philosophies of education in terms of their beliefs about the nature of man and society and their related assumptions about the nature of reality, knowledge, and value.

EDF 311. COMPARATIVE EDUCATION (4)
PR: Upper level Standing. A comparison of contemporary educational systems of selected countries with that of the United States.

EDF 377. EDUCATIONAL PSYCHOLOGY (4)
The nature of learning and the application of learning principles to educational procedures. Credit cannot be earned for both EDF 305 and EDF 377.

EDF 575. AMERICAN DEMOCRACY AND PUBLIC EDUCATION (4)
Interdependence of the public school and democracy in the United States and the responsibility of the school in fostering and strengthening basic democratic principles.

EDF 585. PROGRAMMED INSTRUCTION AND TEACHING MACHINES (4)
Principles for programming in the several academic subjects.

**FOR GRADUATE STUDENTS ONLY**

EDF 603. STATISTICS FOR EDUCATIONAL RESEARCH (4)
PR: EDF 607 or course in elementary statistics. Inferential statistical techniques applied to the experimental study of educational problems.

EDF 605. FOUNDATIONS OF MEASUREMENT (4)
Fundamental descriptive statistics, basic measurement concepts, role of measurement in education, construction of teacher-made tests and interpretation of standardized tests.

EDF 607. FOUNDATIONS OF EDUCATIONAL RESEARCH (4)
PR: EDF 605. Major types of educational research, with emphasis upon understanding the experimental method.

EDF 611. PSYCHOLOGICAL FOUNDATIONS OF EDUCATION (4)
Selected topics in psychology of human development and learning.

EDF 613. PRINCIPLES OF LEARNING (5)
A consideration of several theories of learning and related research studies in regard to classroom application.

EDF 615. BIOLOGICAL BASES FOR LEARNING AND BEHAVIOR (5)
PR: One course in Educational Psychology. A study of human biological development and its influence upon learning and behavior.

EDF 617. MEASUREMENT OF INDIVIDUAL INTELLIGENCE (5)
PR: EDF 305 or 611 or equivalent and a course in educational measurement or statistics. Administration and interpretation of individual measures of intelligence. Students may not receive credit for both EDF 617 and PSY 617 Individual Intelligence Testing.

EDF 621. SOCIO-ECONOMIC FOUNDATIONS OF AMERICAN EDUCATION (4)
Significant socio-economic factors as they relate to major problems facing American education.

EDF 623. HISTORICAL FOUNDATIONS OF AMERICAN EDUCATION (4)
Historical and comparative problems in American education which are relevant to contemporary issues.

EDF 625. PHILOSOPHICAL FOUNDATIONS OF AMERICAN EDUCATION (4)
Major philosophies of education which are relevant to an understanding of contemporary educational issues.
EDF 627. PROSEMINAR IN COMPARATIVE EDUCATION (4)
Contemporary policies and practices in education in selected countries of the world. Methodology in Comparative Education. Consideration will be given to needs and interests of individual students.

Guidance

EDG 581. PRINCIPLES OF GUIDANCE (4)
Guidance as a profession; philosophic framework of the guidance program, its scope and place in the total educational context.

FOR GRADUATE STUDENTS ONLY

EDG 603. THE INFORMATIONAL SERVICE IN GUIDANCE (4)
PR: EDG 581. Occupational structure in the United States; sources and uses of educational, occupational social and personal information; collecting classifying and communicating such information.

EDG 607. THE INDIVIDUAL INVENTORY SERVICE IN GUIDANCE (3)
PR: EDG 581. Case study approach to the analysis of the individual with emphasis on collecting and using information for purposes of better understanding individuals.

EDG 611. THE TESTING SERVICE IN GUIDANCE (4)
PR: EDF 605 or equivalent and EDG 581. Measurement in guidance; administration of tests, interpretation and use of results.

EDG 613. ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES IN ELEMENTARY SCHOOLS (3)
PR: EDG 581. Organization of a guidance program in the elementary school, its relation to instruction and administration. Guidance roles and relationships of members of the school staff.

EDG 615. ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES IN SECONDARY SCHOOLS (3)
PR: EDG 581. Organization of a guidance program and its place in the total educational program; responsibilities of various staff members and their relationships to each other.

EDG 617. GROUP PROCEDURES IN GUIDANCE IN ELEMENTARY SCHOOLS (3)
PR: EDG 581 and EDG 621. Counterpart of EDG 619 for prospective secondary school counselors, use of groups in the counseling and guidance of children and in working with parents and teachers.

EDG 619. GROUP PROCEDURES IN GUIDANCE IN SECONDARY SCHOOLS (3)
PR: EDG 581 and EDG 623. Group interaction and values of group activity for guidance purposes. Methods and techniques for working with groups.

EDG 621. THE COUNSELING SERVICE IN GUIDANCE IN ELEMENTARY SCHOOLS (5)
PR: EDG 581. Counterpart of EDG 623 for prospective secondary school counselors. Counseling viewed as communication through media appropriate to children.

EDG 623. THE COUNSELING SERVICE IN GUIDANCE IN SECONDARY SCHOOLS (5)
PR: EDG 581. Nature of the counseling process with emphasis on some theoretical approaches and practical techniques.

EDG 625. PRACTICUM IN ELEMENTARY GUIDANCE COUNSELING AND CONSULTING (6)
This course is the counterpart of EDG 627 for prospective secondary school
counselors; enrollment by permission of program chairman only. Counseling with children in groups as well as individually; consultations with parents, teachers, administrators, and fellow professionals regarding the children being counseled.

EDG 627. PRACTICUM IN SECONDARY SCHOOL GUIDANCE COUNSELING (6)
Final course in guidance program; enrollment by permission of program chairman only. Supervised practice in working with individuals in counseling relationship.

EDG 633. SEMINAR IN GUIDANCE (1)
PR OR CR: EDG 581. Significant issues in the field of guidance; topics for discussion will vary according to needs and interests of students.

Junior College
FOR GRADUATE STUDENTS ONLY

EDH 651. THE JUNIOR COLLEGE IN AMERICAN HIGHER EDUCATION (4)
History of higher education, philosophical and cultural bases for definition of its role, and contemporary issues, such as control, financing, and curricular patterns. The place and problems of the community junior college will be central concerns of this course.

EDH 653. SEMINAR IN COLLEGE TEACHING (5)
Implications of learning theory and student characteristics for teaching at the college level. Types of teaching procedures, innovation, evaluation, student freedom and responsibility for learning.

Library—Audio-Visual

EDL 411. SCHOOL LIBRARY ADMINISTRATION AND SERVICE (5)
Developments, philosophy, objectives, standards, and current trends in school libraries; library processes, programs and services in the school.

EDL 412. ORGANIZATION OF THE SCHOOL LIBRARY AS A MATERIALS CENTER (5)

EDL 419. AUDIO-VISUAL MATERIALS OF INSTRUCTION (4)
Selection, utilization and care of audio-visual materials and equipment.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDL 508. TV UTILIZATION IN AND FOR THE SCHOOL (4)
Techniques in utilization, evaluation, and preparation of instructional programming for media specialists and teachers.

EDL 513. GENERAL REFERENCE SOURCES (4)
Basic reference tools: dictionaries, encyclopedias, handbooks, indexes, serials, bibliographies, biographical sources, atlases and gazetteers; emphasis on school library reference materials.

EDL 514. SELECTION AND ACQUISITION OF ELEMENTARY SCHOOL LIBRARY MATERIALS (2)
Selection and ordering books and audio-visual materials for children, grades K-6.

EDL 515. TECHNICAL SERVICES IN LIBRARIES (4)
Principles and practice in the classification, cataloging, and processing of books and other informational materials in the school’s library.
EDL 517. BOOKS AND RELATED MATERIALS FOR YOUNG PEOPLE—Part I (3)

EDL 518. BOOKS AND RELATED MATERIALS FOR YOUNG PEOPLE—Part II (3)
PR: EDL 517. Examination of books and related materials for young people in terms of basic principles of selection and utilization.

EDL 523. PREPARATION AND PRODUCTION OF INSTRUCTIONAL MATERIALS (4)
Basic techniques for the preparation of a variety of audio-visual instructional materials.

EDL 524. STORYTELLING FOR THE ELEMENTARY SCHOOL LIBRARIAN (2)
History of storytelling; practice in selection and utilization of materials necessary for storytelling in the elementary school library.

FOR GRADUATE STUDENTS ONLY

EDL 600. FOUNDATIONS OF LIBRARIA NSHIP (5)
PR: EDL 411 or its equivalent. Overview of and introduction to the study of library service: history; organization; specialized literature; outstanding leaders; current trends, issues and problems. Place of the library in society with its contributions to that society.

EDL 601. BIBLIOGRAPHY AND BOOK SELECTION (5)

EDL 603. HISTORY OF BOOKS AND LIBRARIES (4)
Development of books and libraries from the earliest records to the great libraries of modern times and the library as a social institution.

EDL 605. HISTORY OF CHILDREN'S LITERATURE (5)
Historical bibliographical survey of imaginative and informational literature for children.

EDL 607. THE CURRICULUM AND INSTRUCTIONAL TECHNOLOGY (5)
Instructional materials as they relate to specific areas of the curriculum in elementary and high school programs.

EDL 609. SUPERVISED FIELD WORK IN SCHOOL LIBRARIES (4)
Consent of major adviser.

EDL 611. ADVANCED SUBJECT REFERENCE AND BIBLIOGRAPHY (4)
PR: EDL 513. Literature of the humanities, social sciences, science, and technology.

EDL 612. THE ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER (5)
PR: EDL 600 or its equivalent. Media quarters, facilities and equipment. Basic principles of organization and administration of media programs in elementary and secondary schools.

EDL 615. CLASSIFICATION AND CATALOGING OF NON-BOOK MATERIALS (3)
Principles of classification and cataloging of non-book materials for the media center.

EDL 621. AUDIO-VISUAL ADMINISTRATION (5)
PR: EDL 523 and 607. Designed for the high school specialist. The preparation of transparencies, film strips, and other newer media of instruction.

EDL 623. ADVANCED PREPARATION AND PRODUCTION OF INSTRUCTIONAL MATERIALS (4)
PR: EDL 523 and 607. Designed for the high school specialist. The preparation of transparencies, film strips, and other newer media of instruction.

EDL 625. READING GUIDANCE PROGRAMS IN LIBRARIES AND CLASSROOMS (4)
Reading interests of youth, programs for teaching the library and learning skills, theory and practice in reading guidance techniques.

EDL 629. RADIO AND TELEVISION TECHNIQUES FOR EDUCATORS (4)
Utilization and broadcasting techniques for educators. Stress will be placed on local school production, micro-teaching, and studio broadcasting.

EDL 681. INDIVIDUAL RESEARCH AND INDEPENDENT STUDY (1-5)
PR: 20 hours earned in program and consent of adviser.

Music Education

*EDM 431. INSTRUMENTAL MUSIC IN THE ELEMENTARY SCHOOL (4)
*EDM 432. INSTRUMENTAL MUSIC IN THE JUNIOR HIGH SCHOOL (4)
*EDM 433. INSTRUMENTAL MUSIC IN THE SENIOR HIGH SCHOOL (4)
*EDM 435. VOCAL MUSIC IN THE ELEMENTARY SCHOOL (5)
*EDM 437. VOCAL MUSIC IN THE JUNIOR HIGH SCHOOL (5)
*EDM 439. PR: EDM 437. VOCAL MUSIC IN THE SENIOR HIGH SCHOOL (5)

EDM 453. TEACHING METHODS IN THE SECONDARY SCHOOL—MUSIC-INSTRUMENTAL (K-12) (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in instrumental music (K-12).

EDM 455. TEACHING METHODS IN THE SECONDARY SCHOOL—MUSIC—VOCAL (K-12) (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in vocal music (K-12).

FOR GRADUATE STUDENTS ONLY

EDM 601. TECHNIQUES OF RESEARCH IN MUSIC EDUCATION (4)
Professional bibliography and individual research projects.

EDM 603. MUSIC SUPERVISION AND ADMINISTRATION (3)
The music curriculum in relation to the total school program; staff and budgetary needs.

EDM 614. VOCAL MATERIALS AND CONDUCTING (4)
A study of materials appropriate for use in vocal groups. Emphasis is given to vocal materials.

EDM 617. INSTRUMENTAL MATERIALS AND CONDUCTING (4)
A study of materials appropriate for use in instrumental groups. Emphasis is given to instrumental materials.

EDM 633. CURRENT TRENDS IN SCHOOL INSTRUMENTAL MUSIC (3)
New materials, equipment, techniques of teaching and recent historical trends in instrumental music.

EDM 635. CURRENT TRENDS IN SCHOOL VOCAL MUSIC (3)
New materials, equipment, techniques of teaching and recent historical trends in vocal music.

* Each class meets as a performing group. Score reading, conducting, organizational procedures, historical relationships, and methods at the appropriate grade levels. Teaching techniques concerning the presentation of elements of theory, general music, and literature.
Natural Science—Mathematics

EDN 425. NEW TRENDS IN TEACHING THE PHYSICAL SCIENCES (4)
Physical Science Study Committee Physics, Chemical Education Materials Study and other new approaches to the teaching of the physical sciences. Directed individual study. Recommended to be taken prior to EDN 459.

EDN 427. NEW TRENDS IN TEACHING BIOLOGY (4)
Cellular version of Biological Science Curriculum Study. For secondary school teachers. Recommended to be taken prior to EDN 459.

EDN 451. TEACHING METHODS IN THE SECONDARY SCHOOL—MATHEMATICS (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in mathematics.

EDN 459. TEACHING METHODS IN THE SECONDARY SCHOOL—SCIENCES (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in secondary schools sciences.

EDN 583. SELECTED TOPICS IN SCIENCE EDUCATION (3)
FOR GRADUATE STUDENTS ONLY

EDN 637. CURRENT TRENDS IN SECONDARY MATHEMATICS EDUCATION (4)
Curricular patterns and instructional practices in secondary mathematics.

EDN 639. CURRENT TRENDS IN SECONDARY SCIENCE EDUCATION (4)
PR: EDN 425 or 427. Curricular patterns and instructional practices in secondary science.

EDN 641. CASE STUDIES IN SCIENCE (4)
Case studies from the Natural Sciences with implications for science teaching.

Physical Education

EDP 255. FIRST AID (3)
Meets American Red Cross certification requirements in standard and advanced first aid.

EDP 311, 321, 331, 411, 421, 431. SEMINAR AND FIELD EXPERIENCE SEQUENCE IN PHYSICAL EDUCATION (5 each)
A six course sequence providing teaching experiences on the elementary, junior and senior high school levels. Seminars are held in conjunction with these experiences where the following areas will be studied and discussed: analysis of the instructional process, child growth and development, social correlates of physical education, curriculum, organization and administration, health, community recreation, philosophy and evaluation.

EDP 312. HUMAN KINETICS I (6)
The development and integration of the neuromuscular and the associated sensory systems as they effect motor and perceptual motor performance. The physiology of muscular contraction, the accompanying immediate changes in the cardio-respiratory systems, and the permanent physiological changes resulting from exercise.

EDP 314. INDIVIDUAL ASSESSMENT (2)
A personal evaluation of various factors related to the effective teaching of physical education. An individual profile that can be used for counseling purposes will be the final product of this course.

EDP 322. HUMAN KINETICS II (6)
The structure and function of the nervous, skeletal, and muscular systems of the
human body as they contribute to efficient movement; deviations in either structure
or function in these systems and the role of exercise in rehabilitation.

EDP 332. HUMAN KINETICS III (6)
The mechanical laws of physics as they relate to movement within and of the
human body and the projection of objects in throwing, hitting, and kicking.
Efficiency of human movement through sound body mechanics.

EDP 365 AQUATICS (3)
Methods of organizing and conducting aquatic programs in the school and com-
munity.

EDP 366. THEORY AND TEACHING OF MODERN DANCE (3)
Designed to acquaint students with methods and resources for use in teaching
dance. Practical experiences in presentation of dance techniques and composition
work to classes.

EDP 412, 422, 432. APPLIED KINESIOLOGY (4 each)
A three course sequence providing experiences in a number of sports. Emphasis
will be placed on the learning and teaching problems with these activities.

EDP 457. TEACHING INDIVIDUAL AND DUAL ACTIVITIES (3)
PR: PED 150, 152, 160 and 168. Methods of teaching tennis, golf, badminton,
bowling, handball, archery and recreational activities.

EDP 459. ATHLETIC TRAINING (3)
Principles and techniques of conditioning athletes for competition; prevention
and care of injuries in physical education and athletic activities.

EDP 460. HEALTH EDUCATION PROJECT (5)
A practicum in health education through field experiences with official and volun-
tary health agencies.

EDP 466. THEORY AND TEACHING OF TEAMS SPORTS (5)
Theory and methods of teaching rules, progressions, Strategy and tactics in team
games.

EDP 468. COACHING OF SWIMMING (3)
Methods of organizing and coaching a competitive swimming team.

EDP 469. COACHING OF FOOTBALL (5)
Theory and practice of the fundamental techniques, organizational problems and
strategy involved in coaching football.

EDP 478. COACHING OF WRESTLING (4)
Theory and practice of the fundamental techniques, organizational problems and
strategy involved in coaching wrestling.

EDP 479. COACHING OF SOCCER (3)
Theory and practice of the fundamental techniques, organizational problems and
strategy involved in coaching soccer.

EDP 486. COMMUNITY RECREATION (4)
Introduction to recreational outlets in the community and the administrative prob-
lems confronting recreational playground leaders and directors of community
recreational programs.

EDP 488. COACHING OF TRACK AND FIELD (4)
Theory and practice of the fundamental techniques, organizational problems and
strategy involved in coaching track.

EDP 489. COACHING OF BASKETBALL (3)
Theory and practice of the fundamental techniques, organizational problems and
strategy involved in coaching basketball.

EDP 499. COACHING OF BASEBALL (3)
Theory and practice of the fundamental techniques, organizational problems and
strategy involved in coaching baseball.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDP 556. SPECIAL PROBLEMS IN PHYSICAL EDUCATION (3-6)
EDP 558. SCIENTIFIC BASIS OF COACHING (5)
The application of principles from exercise physiology, kinesiology and psychology to competitive athletics.

EDP 566. PHYSICAL EDUCATION FOR THE MENTALLY RETARDED (4)
An Analysis of the neuromuscular and perceptual motor development of children in regard to the special problems of the mentally retarded child and a study of activities designed to improve his motor skills, physical fitness, and social development.

Reading Education
FOR SENIOR LEVEL AND GRADUATE STUDENTS
EDR 509. CURRENT TRENDS IN READING IN THE SECONDARY SCHOOL (4)
Developmental reading for the upper grade level junior high school pupils and all grade level senior high school pupils.

EDR 530. CORRECTIVE READING FOR CLASSROOM TEACHERS (4)
PR: EDE 409 or EDR 509 or equivalent. Procedures and materials for individual and group corrective reading in the classroom.

FOR GRADUATE STUDENTS ONLY
EDR 631. DIAGNOSIS OF READING DISABILITIES (4)
PR: EDF 605 and EDE 609 or EDR 509. Research concerning causes of reading disability; diagnostic procedures; techniques and materials in diagnosis of reading problems.

EDR 632. TECHNIQUES OF CORRECTIVE AND REMEDIAL READING (4)
PR: EDE 609 or EDR 509, and EDR 631. Materials and methods in remediation of moderate to severe reading disability cases.

EDR 633. PRACTICUM IN READING (3-6)
PR: EDE 609 or EDR 509, EDR 631 and EDR 632 and CI. Clinical diagnosis of severe reading disability cases, tutoring of individuals and small groups, interview techniques, preparation of case reports.

EDR 634. CURRICULUM AND SUPERVISION PROBLEMS IN READING (4)
PR: EDE 609 or EDR 509. Planning and administering programs and preparation as consultants in reading. Intensive work on individual projects required.

EDR 635. SURVEY OF READING RESEARCH (4)
PR: EDF 601, EDE 609 or EDR 509. Critical analysis of current reading research; individual report or paper required.

Special Education
EDS 211. INTRODUCTION TO SPECIAL EDUCATION (3)
Characteristics of exceptional children and professional opportunities available in Special Education.

EDS 311. EXCEPTIONAL CHILDREN IN THE SCHOOLS (4)
PR: EDF 305, PSY 201, or CI. Characteristics and needs of the Culturally Disadvantaged, Emotionally Disturbed & Socially Maladjusted, Gifted, Hearing Impaired, Mentally Retarded, Physically Handicapped, Speech Impaired, & Visually Limited.

EDS 312. COMMUNICATION DISORDERS IN THE CLASSROOM (4)
Aiding the child with a speech, hearing, or language disorder in a classroom setting.
EDS 322. INTRODUCTION TO MENTAL RETARDATION (4)
PR: EDF 305, PSY 201, or CI. Classification, diagnosis, characteristics, and treatment of the mentally retarded.

EDS 329. UNDERGRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION (1-14)
Supervised Practicum experiences in the educational, social and vocational planning of mentally retarded individuals.

EDS 423 I & II. EDUCATIONAL PROCEDURES FOR THE EDUCABLE MENTALLY RETARDED (4,4)
PR: EDS 322 and concurrent enrollment in EDC 401, or CI. Special class organization, curriculum adjustments, methods and techniques of teaching the educable retarded.

EDS 424. EDUCATIONAL PROCEDURES FOR THE TRAINABLE MENTALLY RETARDED (4)
PR: EDS 322 or CI. Special class organization, curriculum adjustments, methods and techniques of teaching the trainable retarded.

EDS 479. SCHOOL PRACTICUM IN SPEECH PATHOLOGY (1-14)
Supervised practicum in Speech Pathology & Audiology in the school setting.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

EDS 529. GRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION (1-14)
Supervised graduate practicum encompassing teaching and supervising experiences in public school classes for the mentally retarded.

EDS 531. BEHAVIOR DISORDERS IN THE SCHOOLS (4)
PR: EDF 305 or EDF 377 or PSY 201 or CI. Survey of emotional and social disorders in children and the implications for educational programs. Students may not receive credit for both EDS 513 and PSY 613 Behavioral Disorders of Children.

EDS 541. THE CULTURALLY DISADVANTAGED AND THE SCHOOLS (4)
Characteristics and needs of the culturally disadvantaged and their implications for educational programming.

EDS 550. NATURE AND NEEDS OF THE GIFTED (4)
Characteristics and educational needs of gifted children and youth.

EDS 551. EDUCATIONAL PROCEDURES FOR THE GIFTED (4)
PR: EDS 550 or CI. Curriculum adjustments, methods and techniques, classroom organization necessary for teaching the gifted.

EDS 559. FIELD WORK FOR THE GIFTED (1-14)
Planned supervised participation in activities related to specific areas of the gifted.

EDS 579. SCHOOL PRACTICUM IN SPEECH PATHOLOGY (1-14)
Supervised practicum in Speech Pathology & Audiology in the school setting.

FOR GRADUATE STUDENTS ONLY

EDS 610. SEMINAR IN SPECIAL EDUCATION (4)
A critical survey of the literature related to the psychological, sociological, and education problems of exceptional children.

EDS 611. PSYCHO-EDUCATIONAL APPRAISAL OF EXCEPTIONAL CHILDREN (4)
PR: EDF 303, 605, or CI. Special diagnostic procedures for exceptional children.

EDS 612. SUPERVISION OF EXCEPTIONAL CHILD PROGRAMS (4)
PR: CI. Principles of supervision and their application to exceptional child education.
EDS 613. ADMINISTRATION OF EXCEPTIONAL CHILD PROGRAMS (4)
PR: CI. Procedures which local, state, and national administrators may use to implement services for exceptional children.

EDS 620. BIOLOGICAL AND PSYCHOLOGICAL ASPECTS OF MENTAL RETARDATION (4)
PR: EDS 322 and EDF 607, or CI. Evaluation of relevant literature.

EDS 621. SOCIOLOGICAL AND EDUCATIONAL ASPECTS OF MENTAL RETARDATION (4)
Evaluation of relevant literature.

EDS 622. ADVANCED EDUCATIONAL PROCEDURES FOR THE MENTALLY RETARDED (4-8)
PR: EDS 423, experience in teaching the retarded, identification of a problem prior to registration, or CI. Specific curriculum and methodological problems in teaching the retarded.

EDS 632. EDUCATIONAL PROGRAMMING FOR EMOTIONALLY DISTURBED CHILDREN I (4)
PR: CI. Personality dynamics and research findings as related to the interpretation of disturbed behavior; techniques for the management of individual, small group, and classroom behavior.

EDS 633. EDUCATIONAL PROGRAMMING FOR EMOTIONALLY DISTURBED CHILDREN II (4)
PR: CI. Personality dynamics and learning theory as related to the facilitation of learning and communication; techniques for teaching both individuals and groups with emphasis on improved interpersonal relations, academic learning, and communication skills.

EDS 639. FIELD WORK IN EMOTIONALLY DISTURBED CHILDREN (1-14)
Field work and practicum experiences with several kinds of emotionally disturbed children in a variety of selected situations.

EDS 649. FIELD WORK WITH POTENTIALLY HANDICAPPED (CULTURALLY DISADVANTAGED) (1-9)
Teaching and participation in activities related to teaching disadvantaged young children (N-3).

EDS 676. SPEECH & LANGUAGE DISORDERS (4)
Group management procedures for amelioration of speech and language problems. The nature of disorders of communication and management of verbal behavior.

EDS 699. THESIS (1-6)

English

EDT 447. TEACHING METHODS IN THE SECONDARY SCHOOL—ENGLISH (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in English Education.

EDT 463. TEACHING METHODS IN THE SECONDARY SCHOOL—JOURNALISM (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in journalism.

EDT 531. CURRENT TEACHING OF THE ENGLISH LANGUAGE (4)
Application of recent techniques of language study, including structural and transformational grammar, to classroom teaching of English, especially in relation to current textbooks. (For graduate credit: PR-ENG 517 and certification in English.)
FOR GRADUATE STUDENTS ONLY

EDT 631. CURRENT TRENDS IN SECONDARY ENGLISH EDUCATION (4)
Curricular patterns and instructional practices in secondary English.

Vocational and Adult Education

EDV 407. FOUNDATIONS AND HISTORY OF ADULT AND VOCATIONAL EDUCATION (4)
A historical review of vocational and adult education developments, the forces affecting the movement and their relationships to the total program of education.

EDV 431 I, II, III, IV, V. SUPERVISED FIELD EXPERIENCE: (4-8)
Planned supervised function in the area of specialization and co-ordinated with selected businesses and industries on site. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 445 I, II, III, IV, V. METHODS OF TEACHING SPECIALIZATION SUBJECTS (4)
Improvement of instruction in the area of specialization. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 480 I, II, III, IV, V. FACILITY DESIGN AND LABORATORY MANAGEMENT (4)
Design and develop floor plans consistent with modern and efficient methods of instruction as well as evaluate existing physical facilities. 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. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 503 I, II, III, IV, V. CURRICULUM CONSTRUCTION (4)
To plan and organize an instructional program and budgeting for the purpose of developing an occupational competency for initial employment. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 504 I, II, III, IV, V. PREPARATION AND DEVELOPMENT (4-8)
I. Instructional Media and Materials
II. Performance Evaluation
Credit for in-service programs may be given when approved by the faculty advisor in the area of specialization and when co-ordinated through the University and/or the local board of education. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 506 I, II, III, IV, V. PROGRAM MANAGEMENT (4, 4, 4, 4, 4)
Organization, co-ordination and administration of co-operative programs. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 507. CURRENT POLICIES AND PRINCIPLES OF ADULT AND VOCATIONAL EDUCATION (4)
An overview of current trends and practices, their historical, sociological and philosophical base out of which principles of adult and vocational education have been accepted and implemented.

EDV 511. SCHOOL-COMMUNITY RELATIONS FOR ADULT AND VOCATIONAL EDUCATION (4)
An approach to identifying and analyzing, developing and maintaining working
relationships between appropriate school and community institutions, their channels of communication for the purpose of cooperative program involvement.

FOR GRADUATE STUDENTS ONLY

EDV 621  I, II, III, IV, V. INDIVIDUALIZED INSTRUCTION: (4)
Attention is given to individualized instruction to include the special needs student, the slow learner, and the more capable student. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 631  I, II, III, IV, V. CURRENT TRENDS (4)
The development of vocational education which includes historical information, issues, current trends, new dimensions and problems in the area of specialization. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 641 I, II, III, IV, V. STAFF DEVELOPMENT (Workshop) (4)
Participation in one 4-credit hour workshop may be given when approved by the faculty advisor in the area of specialization. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 651 I, II, III, IV, V. VOCATIONAL DEVELOPMENT PRACTICUM (4-8)
Field study in the local business community. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 661 I, II, III, IV, V. SUPERVISION OF VOCATIONAL DEVELOPMENT PROGRAMS (4)
Supervisory responsibilities at the state, area, and local levels to include improvement of instruction, co-ordination of activities, and human and personnel relations. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 671 I, II, III, IV, V. ADMINISTRATION OF VOCATIONAL DEVELOPMENT PROGRAM (4)
The duties and responsibilities of the administrative manager to include the areas of planning, organizing, controlling, budgeting, and staffing. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

EDV 687 I, II, III, IV, V. SEMINAR: (4)
PR: EDF 605 & 607. Applied research techniques and investigation of an important current problem in area of specialization. A requirement for satisfactorily completing the courses will be a written document such as a research proposal or a magazine article for publication. I. Adult Education. II. Business and Office Education. III. Industrial Education. IV. Distributive Education. V. Technical Education.

Social Studies

EDW 461. TEACHING METHODS IN SECONDARY SCHOOL — SOCIAL STUDIES (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in social studies.

FOR GRADUATE STUDENTS ONLY

EDW 643. CURRENT TRENDS IN SECONDARY SOCIAL STUDIES (4)
Curricular patterns and instructional practices in secondary social studies.
Foreign Languages

EDX 449. TEACHING METHODS IN THE SECONDARY SCHOOL—FOREIGN LANGUAGE (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in Foreign Language.

EDX 465. TEACHING METHODS IN THE SECONDARY SCHOOL—LATIN (4)
PR: EDC 401 or concurrent registration in EDC 401. Techniques and materials of instruction in Latin.

FOR GRADUATE STUDENTS ONLY

EDX 649. CURRENT TRENDS IN SECONDARY FOREIGN LANGUAGE EDUCATION (4)
Curricular patterns and instructional practices in teaching secondary foreign languages.

Humanities

FOR GRADUATE STUDENTS ONLY

EDY 633. CURRENT TRENDS IN THE TEACHING OF HUMANITIES (4)
Curricular patterns, materials, and instructional practices in the teaching of humanities.

ENGINEERING


Basic Engineering Course Work

EGB 101. GRAPHIC ANALYSIS I (4)
The theory and application of projective systems and related topics. Basic problems in descriptive geometry. (lec-lab)

EGB 102. GRAPHIC ANALYSIS II (3)

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

EGB 104. GRAPHIC ANALYSIS IV (3)
CR: EGB 102. Continuation of EGB 103.

EGB 201. ENGINEERING PROBLEMS I (2)
EGB 203. ENGINEERING MEASUREMENTS (3)
PR: EGB 102. An introduction to the concepts of a systems approach and various techniques of measurement in engineering systems, both discrete and continuous. (lec-lab)

EGB 301. ENGINEERING PROBLEMS II (2)
CR: MTH 303. Continuation of EGB 201.

EGB 302. ENGINEERING PROBLEMS III (2)
CR: MTH 304. Continuation of EGB 301.

EGB 303. ENGINEERING PROBLEMS IV (2)
CR: MTH 305. Continuation of EGB 302.

EGB 311. INTRODUCTION TO ELECTRICAL SYSTEMS I (3)

EGB 312. INTRODUCTION TO ELECTRICAL SYSTEMS II (3)
PR: EGB 311. Continuation of EGB 311.

EGB 313. INTRODUCTION TO ELECTRICAL SYSTEMS III (3)
PR: EGB 311. Continuation of EGB 311 or EGB 312.

EGB 321. THERMODYNAMICS I (3)

EGB 322. THERMODYNAMICS II (3)
PR: EGB 321. Continuation of EGB 321. The second law of Thermodynamics; concepts of Reversibility, Carnot Cycle, entropy and its calculation, basic engineering cycles, psychrometry; ideal gas mixtures, combustion. Thermodynamics of fluid flow through simple nozzles and metering devices.

EGB 325. DYNAMIC RESPONSE OF ENGINEERING SYSTEMS (4)
PR: EGB 340. Linear dynamic analysis of electrical, mechanical, pneumatic, hydraulic and thermal systems. Introduction to analog computers; LaPlace transformation. Block diagram representation, transient and frequency response. (lec-lab)

EGB 231. FORTRAN PROGRAMMING I (1)
Basic computer operation, programming a computer using machine language, assembly languages and FORTRAN. (lab)

EGB 232. FORTRAN PROGRAMMING II (1)
PR: EGB 231. Continuation of EGB 231. (lab)

EGB 333. FORTRAN PROGRAMMING III (1)

EGB 337. ENGINEERING VALUATION I (3)
PR: EGB 231, MTH 303. A study in analyzing the economic limitations imposed on engineering activities using basic models which consider the time value of money.

EGB 340. SOLID MECHANICS I (5)

EGB 341. SOLID MECHANICS II (4)
PR: EGB 340. Dynamics of discrete particles and distributed mass bodies; spatial kinematics and kinetics. (lec-problem)

EGB 342. ENGINEERING MATERIALS I (6)
PR: CHM 213, EGB 340. An introduction to the structure and properties of engineering materials. (lec-lab)
ENGINEERING 179

EGB 343. FLUIDS I (6)
   PR: EGB 341. Fundamental and experimental concepts in ideal and viscous fluid
   theory; momentum and energy considerations; compressible flow; boundary layer,
   Navier-Stokes equation. (lec-lab)

EGB 401. ENGINEERING ANALYSIS I (4)

EGB 501, 502, 503, 504, 505. ENGINEERING ANALYSIS II, III, IV, V,
   VI (3 each)
   PR: CC or MTH 401. Ordinary differential equations with emphasis on numerical
   methods and series solutions; boundary value problems; orthogonal functions;
   vector analysis; partial differential equations; the Laplace transform; functions of
   a complex variable.

EGB 601. ENGINEERING ANALYSIS VII (3)
   PR: CC. Applications of applied mathematics to the study of linearized dynamic
   systems and networks; state space; stability theory; extensions to discrete and
   nonlinear systems.

Electrical and Electronic Systems

EGE 301, 302, 303, 404, 405, 406. LABORATORIES I through 6 (1 each)
   PR: EGB 311, 312; CR: EGE 410, 420, 421, 430, respectively.

EGE 310, 410. NETWORK ANALYSIS AND DESIGN I, II (3 each)
   PR: EGB 311. A second course in linear circuit analysis and design. Transient
   and steady-state responses of passive R-L-C networks to various forcing functions.

EGE 320, 420. ELECTRONICS I, II (3 each)
   PR: EGB 312. A second course in the physical principles of electronic devices
   with emphasis on semiconductor electronics. Includes the analysis and design of
   amplifiers and switching circuits.

EGE 330, 430. FIELDS AND WAVES I, II (3 each)
   PR: PHY 225-226. A basic introduction to electromagnetic field theory, including
   static and dynamic electromagnetic fields.

EGE 404, 405, 406. SEE EGE 301

EGE 410. SEE EGE 310.

EGE 411. LINEAR SYSTEMS ANALYSIS (3)
   PR: EGE 310; CR: EGE 410. Provides further study in the analysis of linear
   networks and systems. Includes time and frequency domain points of view.
   Laplace, Fourier and Super-position integrals.

EGE 420. SEE EGE 320.

EGE 421. COMMUNICATION CIRCUITS (3)
   PR: EGE 420. Provides further study in electronic circuits. Includes oscillator,
   modulator, and detector analysis and design.

EGE 425. COMMUNICATION ENGINEERING (3)
   PR: EGE 421. System considerations of electronic circuits; radio propagation;
   antennas; transmitters and receivers.

EGE 430. SEE EGE 330.

EGE 432. DISTRIBUTED NETWORKS (3)
   PR: EGE 430. Transmission lines, standing waves, impedance, waveguides.

EGE 440. LINEAR CONTROL SYSTEMS (3)
   PR: EGB 325. Introduction to analysis and design of linear feedback control
   systems. Covers block diagrams, flow charts, Bode, Nyquist and Root Locus
   techniques.

EGE 441. CONTROL LABORATORY (1)
   CR: EGE 440.

EGE 444. LOGIC DESIGN (3)
   PR: EGE 420. Binary number system; Boolean functions; canonical forms;
Boolean Algebra; minimization of combinational logic circuits; digital switching circuits; switching matrices logic circuits in computers.

**EGE 445. LOGIC LABORATORY (1)**

CR: EGE 444.

**EGE 450. MICROELECTRONICS ENGINEERING (3)**


**EGE 451. MICROELECTRONICS LABORATORY (1)**

CR: EGE 450.

**EGE 460, 462, 464. ELECTROMECHANICS I, II, III (3 each)**


**EGE 461, 463, 465. ELECTROMECHANICS LAB 1, 2, 3 (1 each)**

CR: EGE 460, 462, 464 respectively.

**EGE 474, 476, 478. SYSTEMS ANALYSIS I, II, III (5 each)**

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

**EGE 475, 477, 479. SYSTEMS LABORATORIES 1, 2, 3 (1 each)**

CR: EGE 474, 476, 478 respectively.

**EGE 480, 481, 482. SPECIAL ELECTRICAL TOPICS I, II, III (1-4 each)**

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

**EGE 499. DESIGN PROJECT (3)**

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

**EGE 520. PULSE CIRCUIT PRINCIPLES (3)**

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

**EGE 530. UHF PRINCIPLES (3)**

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

**EGE 531. UHF LABORATORY (1)**

CR: EGE 530.

**EGE 540. NONLINEAR CONTROL SYSTEMS (3)**


**EGE 541. CONTROL LABORATORY (1)**

CR: EGE 540.

**EGE 544. DIGITAL COMPUTERS (3)**

PR: EGE 444. Digital arithmetic; computer subsystems, arithmetic units; control units; memory units; general purpose computers.

**EGE 545. DIGITAL LABORATORY (1)**

CR: EGE 544.

**EGE 548. ELECTRICAL MEASUREMENTS (2)**

PR: EGE 411. Techniques and principles of electronic measurement.

**EGE 549. MEASUREMENTS LABORATORY (1)**

CR: EGE 548.

**EGE 560. POWER SYSTEMS ANALYSIS (3)**

PR: CC. Analysis techniques for AC power systems.

**EGE 580, 581, 582. SPECIAL ELECTRICAL TOPICS I, II, III (1-3 each)**

PR: CC

**EGE 585. ENGINEERING SEMINAR (1)**

PR: CC
EGE 599. RESEARCH OR DESIGN (1-9)  
PR: CC

EGE 610, 611. ADVANCED CIRCUIT THEORY I, II (3 each)  
PR: CC. Network fundamentals; network characterization; frequency analysis; super-position integrals; signal-flow techniques; stability problems; real-and-imaginary relations.

EGE 612. NONLINEAR CIRCUITS (3)  
PR: CC. Analytical and topological approaches to nonlinear circuits; nonlinear resonance; relaxation oscillations.

EGE 614, 615, 616. NETWORK SYNTHESIS I, II, III (3 each)  
PR: CC. Network functions; physical realizability; two-terminal network synthesis methods; frequency transformation; potential analogy; approximation problems; insertion-loss and transfer function synthesis.

EGE 622. NOISE THEORY (3)  
PR: CC. Electrical noise and signals through linear filters and electronic systems.

EGE 626, 627, 628. THEORY OF COMMUNICATION I, II, III (3 each)  
PR: CC. Physical basis and statistical representation of electrical noise; filtering, modulation, and de-modulation of signals corrupted by noise; correlation techniques and linear prediction; statistical estimation of signal parameters; optimum filters and receivers; ambiguity functions and inverse probability. Quantitative measure of information sources, noise channels and channel capacity; an introduction to error-correcting codes.

EGE 630, 631, 632. ELECTROMAGNETIC FIELDS AND WAVES I, II, III (3 each)  
PR: CC. Electromagnetic theory from the engineering point of view, propagation and reflection of waves, guided waves, resonant activities, antennas and radiation.

EGE 635. MICROWAVE THEORY (3)  
PR: CC. A study of microwave circuits, devices and techniques.

EGE 636. ELECTRICAL LABORATORY (1)  
CR: EGE 635.

EGE 640. DIGITAL CONTROL SYSTEMS (3)  
PR: EGE 440 or CC. Sample-data and digital control processes.

EGE 641. RANDOM PROCESSES IN CONTROL SYSTEMS (3)  
PR: EGE 440 or CC. Analysis and design of control systems subject to random inputs and disturbances.

EGE 642. MODERN CONTROL THEORY (3)  
PR: EGE 440, 540, 640, 641 or CC. A study of modern control techniques including optimum and adaptive control.

EGE 644. DIGITAL MACHINES I (3)  
PR: EGE 444. Mathematical Foundation; minimization, design of sequential logic circuits, state diagrams.

EGE 654. DIGITAL MACHINES II (3)  
PR: EGE 644. Digital arithmetic; binary codes in computers; design of special purpose computers; introduction to sequential machine theory; examples of sequential machines.

EGE 647. SIMULATION TECHNIQUES FOR ELECTRICALS (3)  
PR: CC. Theory of simulation of systems characterized by lumped and distributed parameters.

EGE 648. ELECTRICAL MEASUREMENTS (2)  
PR: CC. Advanced techniques and principles of electronic measurement.

EGE 649. MEASUREMENTS LABORATORY (1)  
CR: EGE 648.

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

EGE 660, 661, 662. ELECTRIC POWER SYSTEMS I, II, III (3 each)
PR: CC. Steady-state and transient analysis of interconnected power systems; power circuit protection; transient characteristics of apparatus.

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

EGE 690. ADVANCED ENGINEERING SEMINAR (1)
PR: CC.

EGE 699. RESEARCH OR DESIGN (1-18)
PR: CC.

Energy Conversion

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

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

EGR 326. DYNAMICS OF MECHANICAL SYSTEMS (3)

EGR 350. ENERGY CONVERSION LABORATORY I (2)
CR: EGB 322. Introduction to engineering laboratory measurements with emphasis on the writing of technical reports. Experiments in the measurement of temperature, pressure, flow of fluids; determination of density, viscosity, analysis of combustion products. Lec-Lab.

EGR 411. THERMODYNAMICS IV (3)
PR: EGR 311. Introduction to mathematical thermodynamics, the Maxwell relations, real gas behavior, ideal mixtures and solutions, introduction to phase and chemical equilibrium.

EGR 413. FLUID MACHINERY (4)
PR: EGR 342. Analytic and experimental determination of the performance characteristics of fluid handling devices; proper selection of pumps and fans for known pipe and duct systems. Analysis of system efficiency parameters; techniques for noise control. Lec-Lab.

EGR 417. FUELS AND COMBUSTION (3)
PR: EGR 322. A study of the combustion characteristics of gaseous, solid and liquid fuels and equipment needed to safely and economically control combustion processes. Lec-Lab.

EGR 419. POWER PLANT ANALYSIS AND DESIGN (3)
PR: EGR 315. Daily load curves, and estimation of future loads; economics of power generation. Plant efficiency as affected by the thermodynamic cycle and load variations.

EGR 421. INTRODUCTION TO NUCLEAR ENGINEERING I (3)
PR: PHY 323. Neutron density and thermalization parameters; criticality calculations; transient flux parameters; reactor operation; control instrumentation.

EGR 424. REFRIGERATION AND AIR CONDITIONING (3)
PR: EGR 315. Application of the principles of thermodynamics, heat transfer and fluid flow to the design of systems for the control environment.

EGR 428. MACHINE ANALYSIS AND DESIGN (3)
PR: EGR 341. Stress analysis, stress strain relations, deflection analysis, shock

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

EGR 441. ANALOG COMPUTERS I (3)
PR: EGB 325 or CI. The study of linear and nonlinear engineering systems using analog computers. Magnitude and time scaling. Lec-Lab.

EGR 450. ENERGY CONVERSION LABORATORY II (1)
PR: EGR 350. Continuation of EGR 350 with emphasis on measurement techniques, energy balances of operating systems and technical report writing. Lec-Lab.

EGR 453. MECHANICAL MEASUREMENT AND CONTROL (3)

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

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

EGR 515. HEAT TRANSFER II (4)

EGR 511. STATISTICAL THERMODYNAMICS (3)
PR: EGR 311. The statistical and microscopic approach to molecular transport phenomena. Boltzman and quantum statistics; entropy and probability; the third law of thermodynamics; evaluation of partition functions.

EGR 517. ENERGY TRANSFORMATION AND STORAGE (3)
PR: EGR 311. Analysis of direct energy conversion systems; photovoltaic cells, thermocouples, fuel cells, thermionic converters, magnetohydrodynamic devices, solar energy cells, rectifiers, inverters, energy storage devices.

EGR 521. INTRODUCTION TO NUCLEAR ENGINEERING II (3)

EGR 522. ACOUSTICS AND NOISE CONTROL (3)
PR: CC. Fundamentals of sound propagation; sound power and intensity; psychoacoustics, industrial noise sources, methods of noise attenuation; community noise ordinances; instrumentation for noise measurement. Lec-Lab.

EGR 526. ANALYSIS METHODS FOR MECHANICAL DESIGN (3)

EGR 528. MECHANICAL DESIGN II (3)

EGR 529. PROJECT DESIGN (3)
PR: CC. Correlation of previously acquired mechanical design experience with a creative design project. Lec-Lab.

EGR 533. MECHANICAL VIBRATION AND BALANCING (3)
PR: CC. Transient and steady state vibration analysis of mechanical systems with lumped parameters. Dynamic balancing, vibration isolation and simulation of systems.

EGR 535. LUBRICATION (3)
PR: CC. The theoretical basis of lubrication and hydrodynamic bearing theory. The study of lubrication requirements of different types of machines.
EGR 541. ANALOG COMPUTERS II (3)

EGR 551. PHYSICAL MEASUREMENTS (3)
PR: CC. The techniques and theory for measuring temperature, pressure, displacement, speed, acceleration, force, power, and psychrometric properties with particular attention to dynamic measurement. Lec-Lab.

EGR 554. PNEUMATIC AND HYDRAULIC CONTROL (3)
PR: CC. A study of pneumatic and hydraulic control system components and their effect on closed loop system performance. Lec-Lab.

EGR 556. NUMERICAL MEASUREMENT AND CONTROL (3)
PR: CC. Incremental and absolute control systems. Number systems used in numerical control. Digital to analog and analog to digital conversion. Applications.

EGR 560. POWER UTILIZATION SYSTEMS (3)

EGR 581. SPECIAL TOPICS ENERGY CONVERSION III (1-4)
PR. CC.

EGR 582. SPECIAL TOPICS ENERGY CONVERSION IV (1-4)
PR. CC.

EGR 611. THERMODYNAMICS OF FLUID FLOW (8)
PR: CC. Interrelationship of the equations of motion and of thermodynamics. The study of ideal and real fluids in motion.

EGR 612. ADVANCED THERMODYNAMICS (3)
PR: CC. Advanced treatment of the general equations of thermodynamics, principal equations of chemical reaction; the chemical potential and equilibrium constant; analysis of metastable states. Irreversibility and steady flow.

EGR 615. HEAT TRANSFER III (3)
PR: CC. Advanced treatment of basic heat transfer phenomena. Radiation through absorbing and non-absorbing media; radiation from gases and plasmas; “grey” body calculations. Analysis of convective heat transfer by boundary layer theory and equations of fluid motion.

EGR 629. ADVANCED MECHANICAL DESIGN (3)
PR: CC. A technical application course involving the problem of developing machines to perform specified functions. The machine to be designed will be designated by the instructor. The analysis will include evaluating all parts for stress, vibration, wear and proper consideration of manufacturing processes involved. Lec-Lab.

EGR 630. APPLIED ENGINEERING ASPECTS OF FATIGUE (3)

EGR 633. VIBRATIONS ANALYSIS (3)
PR: EGR 533. Application of generalized coordinates, LaGranges’s equation, matrix iteration, and other specialized methods to discrete multimass systems. Lateral vibrations of uniform machine elements.

EGR 642. DIMENSIONAL ANALYSIS AND MODEL THEORY I (3)
PR: CC. Theory of dimensional analysis, similitude, and design of models.

EGR 643. DIMENSIONAL ANALYSIS AND MODEL THEORY II (3)
PR: EGR 643. Continuation of EGR 643 including model testing and correlation of tests with fractional analysis.

EGR 657. FLUID AMPLIFIERS AND CIRCUITS (3)
PR: CC. Analysis and design of fluid devices for use as amplifiers, logic devices and memory elements in instrumentation and control systems.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>EGR 681</td>
<td>SPECIAL PROBLEMS I (1-4)</td>
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<td>EGR 682</td>
<td>SPECIAL PROBLEMS II (1-4)</td>
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<td>EGR 699</td>
<td>RESEARCH OR DESIGN (1-9)</td>
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**Industrial Systems**

**EGS 401. INDUSTRIAL SYSTEMS (3)**
Introduction to organizational, planning and control functions in industrial systems.

**EGS 402. INDUSTRIAL PROCESSES (3)**
PR: EGB 337. Introduction to basic industrial processes emphasizing inter-dependency and similarities among industries. Students research specific industries and visit local industrial plants. Lec-Lab.

**EGS 403, 404. PRODUCTION DESIGN I, II (3 each)**
PR: EGS 402, 461. Methods study, predetermined time systems, wage administration, work measurement techniques including stop-watch time study, work sampling, standard data and production studies. Lec-Lab.

**EGS 405, 406. PRODUCTION CONTROL SYSTEMS I, II (3 each)**
PR: EGS 404, 441. Principles and techniques of industrial planning and control systems design. Cost analysis, forecasting and controlling production activities, including the use of CPM, PERT and LOB.

**EGS 407. ENGINEERING VALUATION II (3)**
PR: EGB 337 or equivalent. Analysis of economic limitations on engineering projects. Income tax considerations, replacement models, MAPI and obsolescence.

**EGS 409. PLANT FACILITIES DESIGN I (4)**
PR: EGS 405. Design and modification of plant facilities, including design of a complete manufacturing operation. Problems in plant location, layout, material handling and equipment selection.

**EGS 421. HYBRID COMPUTERS (3)**

**EGS 429. COMPUTER PROJECTS (3)**
PR: CC. Special projects involving the use of and operation of digital/analog computers.

**EGS 441, 442. OPERATIONS RESEARCH I, II (3 each)**
PR: EGS 461. An introduction to the basic operations research techniques—linear programming, dynamic programming, simulation and queueing.

**EGS 461, 462. ENGINEERING STATISTICS I, II (3 each)**
PR: MTH 303. An introduction to the basic concepts of statistical analysis. Probability, distribution functions, estimating and testing procedures, regression and correlation analysis.

**EGS 471. CHEMICAL PROCESS CALCULATIONS (3)**

**EGS 472. TRANSPORT PHENOMENA (4)**
PR: EGB 321, EGS 471. An introduction to momentum transfer, energy transfer, and mass transfer as applied to industrial chemical process problems.

**EGS 473, 474. CHEMICAL PROCESS PRINCIPLES I, II (4 each)**
PR: CHM 442, EGB 343, EGS 472. Application of transport concepts to the solution of problems concerned with the design, economics and operation of
chemical process equipment; fluid flow, heat transfer, absorption, drying, evaporation, crystallization, extraction, and distillation.

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

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

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

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

EGS 521, 522. COMPUTER SIMULATION I, II (3 each)
PR: CC. Use of digital, analog and hybrid computers in simulating physical and industrial systems.

EGS 540. OPERATIONS RESEARCH (3)
PR: CC. Linear programming, game theoretic models, economic optimization. Not open to students who have had EGS 442.

EGS 541, 542. NUMERICAL METHODS OF SYSTEMS ENGINEERING I, II (3 each)
PR: MTH 401. The study and application of matrix algebra, differential equations, calculus of finite differences, operation and transform methods, and stochastic processes.

EGS 560. INDUSTRIAL STATISTICS (3)
PR: CC. Industrial applications of probability, testing of hypotheses, regression techniques and analysis of variance. Not open to students who have had EGS 462.

EGS 561, 562. DESIGN OF EXPERIMENTS I, II (3 each)
PR: EGS 462 or equivalent. Development of the basic experimental designs. Randomized block, latin squares and factorial designs.

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

EGS 565. STATISTICAL QUALITY CONTROL (3)
PR: EGS 461 or equivalent. Application of statistical techniques to the control of industrial processes. Control charts and acceptance procedures. Sequential sampling.

EGS 566. RELIABILITY ENGINEERING (3)

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

EGS 603. MAN/MACHINE SYSTEMS (3)
PR: EGS 503, Principles of work measurement, process analysis, value analysis, and human factors and their application to industrial situations.

EGS 605. PRODUCTION CONTROL SYSTEMS III (3)
PR: EGS 406 or equivalent. Forecasting procedures, development of production plans, scheduling techniques and inventory models. Application of EDP to production control systems.
EGS 607. ADVANCED ENGINEERING VALUATION (3)
PR: EGS 407 or equivalent. Statistical models for analyzing engineering alternatives from an economic viewpoint. The use of advanced engineering economy concepts in solving industrial problems.

EGS 609. PLANT FACILITIES DESIGN II (3)
PR: EGS 409 or CC. Advanced techniques for evaluation of alternative plans for plant arrangement, including equipment location and material handling systems.

EGS 641. LINEAR PROGRAMMING (3)
PR: EGS 442 or equivalent. The simplex method, degeneracy, duality theory; applications of linear programming to industrial problems.

EGS 642. NONLINEAR AND DYNAMIC PROGRAMMING (3)

EGS 644. QUEUEING THEORY (3)
PR: EGS 442, 462. Deterministic and probabilistic queueing models. Poisson queues and special non-Poisson queues with exponential and non-exponential services. Single and multiple channel queues.

EGS 646. MULTIVARIABLE OPTIMIZATION (3)

EGS 647, 648. STOCHASTIC PROCESSES I, II (3 each)
PR: EGS 662. Theory and application of stochastic processes as models for empirical phenomena, with emphasis on the following processes: Poisson, stationary, normal, counting, renewal, Markov, birth and death. Spectral representations, time series, smoothing and filtering.

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

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

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

EGS 687, 688. INDUSTRIAL SYSTEMS DESIGN I, II (3 each)
PR: EGS 521. Design of integrated systems using statistical and operations research models. Simulation of integrated systems using digital, analog and hybrid computers.

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

EGS 699. RESEARCH OR DESIGN (1-12)
PR: CC.

Structure, Materials and Fluids

EGX 401. STRUCTURES I (5)
PR: EGB 340. Elastic analysis of structural members, concepts of variational energy principles including virtual work, minimum potential energy, and complementary energy, elastic and inelastic stability.

EGX 402. ENGINEERING MATERIALS II (4)
PR: EGB 342, EGB 321. Thermodynamics of Solid Materials. Entropy and free energy concepts applied to equilibrium and rate processes in metallic, ceramic and polymer systems. Metallography. (lec-lab.)
EGX 410. CONCEPTS OF STRUCTURAL DESIGN (4)
CR: EGX 401. Applications of solid mechanics, materials science, and structural analysis; local effects and connections, critical review of current code and design practices.

EGX 420. CONCEPTS OF MATERIALS ENGINEERING (3)
PR: EGX 402. Application and selection of metals, ceramics, and polymers in engineering problems. Materials technology an failure analysis. (lec.)

EGX 503. FLUID MECHANICS II (4)
PR: EGB 343. Fundamentals of gas dynamics, open channel analogy to compressible fluids, two dimensional hydrodynamic flows with application to airfoil theory, three dimensional flow fields. (lec-lab)

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

EGX 505. SOLID MECHANICS III (3)
PR: EGB 341. Dynamics of discrete and distributed mass, spatial kinematics, and kinetics, inertia tensor, Euler equations.

EGX 510. STRUCTURES II (4)
PR: EGX 401. Elastic and inelastic structures of composites and structural laminates, and matrix media; prestressed structural systems.

EGX 511. STRUCTURES III (5)

EGX 520. ENGINEERING MATERIALS III (4)

EGX 521. ENGINEERING POLYMERS (3)
PR: CC. Structure and bulk properties of polymers. High elasticity, topics in viscoelasticity, the glass transition, irreversible deformation. Technology of plastics, fibers and elastomers.

EGX 522. CORROSION (3)

EGX 523. DIFFUSION (3)
PR: EGX 402. Theoretical and practical analysis of diffusion in solids including the physical meaning and implications of the concepts which influence and apply to diffusion in crystalline solids.

EGX 530. FLUID MECHANICS III (4)
PR: EGB 343. Mathematical hydrodynamics, inviscid flow. (Lec-lab)

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

EGX 550. SOLID MECHANICS IV (3)

EGX 551. VIBRATIONS (3)
PR: EGX 505. Wave motion in solids and fluids, thermal and mechanical shock, wave transmission and attenuation; blast loading, Phase-plane analysis.

EGX 570. INTRODUCTION TO CONTINUUM (4)
PR: CC. Development of techniques of applied mathematics to SMF problems; partial differential equations, complex variable, vector and tensor analysis.
EGX 571. CONTINUUM I (3)
   PR: CC. Development of fundamental problems in solids and fluids from a
   unified viewpoint; application to ideal media; elastic, plastic, viscoelastic, and
   fluids.
EGX 572. CONTINUUM II (3)
   PR: EGX 571. Mathematical Theory of elasticity. Two dimensional problems
   in plane stress and plane strain using cartesian and curvilinear coordinates;
   three dimensional applications to torsion, bending and semi infinite solids.
EGX 580. SPECIAL TOPICS IN SMF (1-4)
   PR: CC.
EGX 598. RESEARCH IN SMF (1-4)
   PR: CC.
EGX 599. RESEARCH IN SMF (1-4)
   PR: CC.
EGX 610. STRESSED SURFACE STRUCTURES (5)
   PR: EGX 401. Elastic and plastic behavior of plate and shell structures, smooth
   and ribbed surfaces. (lec-lab.)
EGX 611. STRUCTURAL STABILITY (5)
   PR: EGX 401. Elastic and plastic stability of trusses and frames, local buckling
   of structural members, local and generalized buckling of shell and plate
   structures.
EGX 612. STRUCTURAL DYNAMICS (4)
   PR: EGX 401. Behavior of structural components and systems when subjected
   to periodic and random dynamic loads.
EGX 620. ENGINEERING MATERIALS IV (4)
   Magnetic and Dielectric properties of solids, Quantum and statistical models.
   (lec-lab.)
EGX 621. ENGINEERING MATERIALS V (4)
   PR: CC. Mechanical Behavior of Materials. Dislocation mechanics, plasticity,
   fracture. Mechanical failure mechanisms. Strengthening of solids. Elastic and
   anelastic behavior. (lec-lab.)
EGX 622. MICROMECHANICS (3)
   PR: CC. The discrete and continuum concepts in crystalline, polycrystalline and
   composite materials. Size effect and the continuum limit. (lec.)
EGX 630. FLUID MECHANICS IV (4)
   PR: CC. Flow of Newtonian and Non-Newtonian viscous fluids. (lec-lab)
EGX 640. EXPERIMENTAL SMF III (4)
   PR: EGX 504. Moiré and photoelastic experimental techniques. (lec-lab.)
EGX 641. EXPERIMENTAL SMF IV (4)
   PR: EGX 504. Theory and application of photoelasticity (lec-lab.)
EGX 642. EXPERIMENTAL SMF V (4)
   PR: EGX 504. Three dimentional stress analysis methods. (lec-lab.)
EGX 643. EXPERIMENTAL SMF VI (4)
   PR: EGX 504. Theory and application of holography and optical imagery.
EGX 650. SOLID MECHANICS V (3)
   PR: EGX 505. Elastic and plastic stress wave propagation in solids, experimental
   and theoretical treatment, method of characteristics.
EGX 651. NONLINEAR DYNAMICS (3)
   PR: EGX 505. Non-linear restoring force, viscous friction, Duffing and Vander
   Pol's equations, perturbation methods.
EGX 660, 661, 662. HYDROSPACE ENGINEERING I, II, III, (3 each)
   PR: CC. Advanced analysis of structural, material and fluid systems for marine
   environment, including underwater acoustics.
EGX 670. CONTINUUM MECHANICS III (3)
PR: CC. Theory of Plasticity. Initial and subsequent yield surfaces, incremental and deformation theories, flow theories; problems in ideal plasticity, strain hardening and slip line fields.

EGX 671. CONTINUUM MECHANICS IV (3)

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

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

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

Technical Service Course Work

ETK 301, 302. COMPUTER PROGRAMMING I, II (2 each)
Basic principles of computer operation, machine language, assembly language, and FORTRAN language programming principles.

ETK 303. COBOL PROGRAMMING (3)
PR: ETK 302 or equivalent. Computer programming using COBOL.

ETK 501. COMPUTER SYSTEMS (3)
PR: ETK 302 or equivalent. Study of computer systems components, I/O devices, memory devices, theory of computer operation.

ETK 502, 503. COMPUTER LANGUAGES AND COMPUTATION I, II (3 each)

ETK 505, 506. THEORY OF DATA PROCESSING I, II (3 each)
PR: ETK 501. Structure and automatic processing of data files, data classification, information theory and information retrieval.

ETK 601. SPECIAL TECHNICAL TOPICS I (1-4)
PR: CC.

ETK 602. SPECIAL TECHNICAL TOPICS II (1-4)
PR: CC.

ETK 603. SPECIAL TECHNICAL TOPICS III (1-4)
PR: CC.

ENGLISH


ENG 131. READING ACCELERATION (2)
Designed to change the reading habits and patterns of students from left-to-right progression to down-the-page progression. (Also see Developmental Reading.)

ENG 201. MAJOR BRITISH WRITERS TO 1640 (4)
PR: CBS 102. An introduction to the poetry, prose, and drama of English literature from its beginning to Milton.

ENG 202. MAJOR BRITISH WRITERS, 1640-1750 (4)
PR: CBS 102. English literature from the Restoration to the pre-Romantics.

ENG 203. MAJOR BRITISH WRITERS, 1780-1912 (4)
PR: CBS 102. English literature from the Romantics through the late Victorians.
ENG 301. CURRENT LITERATURE (2)
An examination of significant fiction, drama, and poetry written since World War II.

ENG 305. MAJOR AMERICAN WRITERS TO 1865 (4)

ENG 306. MAJOR AMERICAN WRITERS, 1865-1912 (4)
PR: CBS 102. A study of the major realists and early naturalists. These include Whitman, Twain, James, Crane, Dickinson, Dreiser, and Robinson.

ENG 307. MODERN BRITISH AND AMERICAN WRITERS, 1912-1945 (4)
PR: CBS 102. Works by such American and British writers as Eliot, Pound, Yeats, Thomas, Shaw, O'Neill, Hemingway, Faulkner, Huxley, Woolf, Joyce, Lawrence, and others.

ENG 319. THE BIBLE AS LITERATURE (4)
PR: CBS 102. Major emphasis on literary types, literary personalities of the Old and New Testaments, and Biblical archetypes of British and American literary classics.

ENG 321. ADVANCED WRITING (4)
PR: CBS 102. Emphasis upon excellence in the techniques of description and narration. Practice in the personal essay, critical review and narrative sketch.

ENG 325. ADVANCED EXPOSITORY WRITING (4)
PR: CBS 102. Composition techniques in exposition, methods and styles of writing the article and the report.

ENG 335. WORLD LITERATURE (4)
PR: CBS 102. Masterpieces of the western world, in translation, including ancient, medieval, and Renaissance literature.

ENG 336. WORLD LITERATURE (4)
Transliterated masterpieces of the Neoclassical, Romantic, Realistic and Naturalistic, Symbolic and Modern periods.

ENG 337. FOLK LITERATURE (4)
PR: CBS 102. Legends and myths, fairytales, and folktales; the imaginative source for much of our great literature, thought, and culture.

JNM 341-49. JOURNALISTIC WRITING (2-5)
For courses in writing for mass communications, see Journalism Program.

ENG 383. SELECTED TOPICS IN ENGLISH STUDIES (1-4)
PR: Sophomore standing. It will examine in depth a recurring literary theme or the work of a small group of writers. Special courses in writing may also be offered under this title.

ENG 411. PLAYS OF SHAKESPEARE (4)
PR: ENG 201 and 12 hours of literature. A study of ten representative plays by Shakespeare.

ENG 421. IMAGINATIVE WRITING—POETRY (4)
Studies and exercises in prosody and imagery; written assignments in traditional and contemporary forms; evaluation of student work in individual conferences; selected reading. May be taken twice for credit.

ENG 423. IMAGINATIVE WRITING—FICTION (4)
PR: ENG 321. Study and writing of the short story and sections of the novel. Evaluation of student work in conferences, selected readings. May be taken twice for credit.

ENG 425. THE AMERICAN NOVEL (4)
PR: 16 hours of literature. Selections from the novels of Charles Brockden Brown, Cooper, Hawthorne, Melville, Twain, Stephen Crane, Frank Norris, Edith Wharton, Henry James, and Theodore Dreiser.

ENG 426. THE AMERICAN DRAMA (4)
American dramatic literature from the beginnings to the present.
ENG 429. EIGHTEENTH CENTURY BRITISH NOVEL (4)
PR: 16 hours of literature. The historical development of the British novel; precursors of the novel; Richardson, Fielding, Smollett, Sterne, and the Gothic novelists.

ENG 430. NINETEENTH CENTURY BRITISH NOVEL (4)
PR: 16 hours of literature. A continuation of the development of the British novel; Austen, Scott, Thackeray, Dickens, Trollope, the Brontes, Eliot, Meredith, Hardy, and Butler.

ENG 437. CONTINENTAL NOVEL (4)
PR: 12 hours of literature. Major European novels from the Eighteenth Century to the present. Emphasis upon French and Russian novels of the Nineteenth Century.

ENG 459. DRAMA AND THE MODERN LITERARY TEMPER (4)
PR: 12 hours of literature. A study of the major literary problems faced by modern dramatists since Ibsen and the rise of realism.

ENG 451. INDIVIDUAL RESEARCH (credits vary)
PR: 12 hours of literature. Directed study in special projects. Special permission of chairman required.

ENG 453. SELECTED TOPICS IN ENGLISH STUDIES (1-4)
PR: Sophomore standing. The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers. Special courses in writing may also be offered under this title.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ENG 501. CHAUCER (4)
PR: 20 hours of literature. An introduction to the language through the “Prologue” to The Canterbury Tales. Study of the Book of the Duchess, a selected number of Tales, the House of Fame, and Troilus and Criseyde.

ENG 502. THE LITERATURE OF MEDIEVAL ENGLAND (4)
PR: 20 hours of literature. An examination of the historical and social backgrounds of medieval literature and representative works of the period.

ENG 503. ENGLISH DRAMATIC LITERATURE TO 1642 (4)
(Exclusive of Shakespeare)
PR: 20 hours of literature. English drama from the liturgical plays to the closing of the theatres in 1642. Representative plays of Lyly, Kyd, Dekker, Beaumont and Fletcher, Ford, Marlowe, and Jonson.

ENG 505. SEVENTEENTH CENTURY POETRY (4)
PR: 20 hours of literature. Emphasis upon leading metaphysical and Cavalier poets and upon prose writers from 1558-1660, with a brief study of major influences and figures from 1500-1588.

ENG 507. MILTON (4)
PR: 20 hours of literature. An examination of Paradise Lost, Paradise Regained, Comus, the shorter poems, and selected prose works.

ENG 511. RELIGIOUS AND EXISTENTIAL THEMES IN MODERN LITERATURE (4)
Theological and philosophic idea, allusion, and symbol in the writings of Dostoevski, Nietzsche, Mann, Joyce, Eliot, Camus, Sartre, and others.

ENG 513. THE ROMANTIC WRITERS (4)
PR: 20 hours of literature. The poetry and poetics of Blake, Wordsworth, Coleridge, Byron, Shelley, Keats; with attention to lesser figures.

ENG 515. HISTORY OF THE ENGLISH LANGUAGE (4)
PR: 24 hours of literature. The evolution of the language from Anglo-Saxon through Middle English to Modern English. Changes in pronunciation and syntax; discussion of the forces which influenced them.
ENG 517. STRUCTURE OF AMERICAN ENGLISH (4)
PR: 20 hours of literature. The phonetics, phonology, and morphology of American English. Structural grammar; the application of linguistics to the teaching of English.

ENG 518. LINGUISTICS AND LITERATURE (4)
PR: ENG 517 or equivalent or CI. The analysis and interpretation of British and American literature, poetry, prose, and drama using relevant materials from the field of descriptive and comparative linguistics.

ENG 519. SHAKESPEARE’S COMEDIES AND HISTORIES (4)
PR: ENG 411. An intensive study of Shakespeare’s major comedies and histories.

ENG 520. SHAKESPEARE’S TRAGEDIES (4)
PR: ENG 411. An intensive study of Shakespeare’s major tragedies.

ENG 521. RESTORATION AND 18TH CENTURY LITERATURE (4)
(exclusive of the drama and novel)
PR: 20 hours of literature. Concentration upon selected figures of the period with emphasis on their satirical works.

ENG 523. NINETEENTH-CENTURY BRITISH LITERATURE
Essays of Carlyle, Newman, Mill, Ruskin, Arnold, Pater; poetry of Tennyson, Browning, Swinburne; novels of Dickens, Meredith; plays of Wilde, Shaw.

ENG 527. MODERN BRITISH AND AMERICAN POETRY (4)
PR: 20 hours of literature. Selected poets from Hopkins to the present, with attention to modern poetic theory.

ENG 528. CONTEMPORARY BRITISH & AMERICAN FICTION (4)
A critical study of British and American fiction since World War II. Works by Mailer, Beckett, Bellow, Ellison, Nabokov, and others.

ENG 531. LITERARY CRITICISM (4)
PR: 24 hours of literature. Emphasis on either the great critics and the principles of criticism or on applied criticism of fiction, poetry and drama.

ENG 535. TRANSFORMATIONAL GRAMMAR (4)
PR: 90 hours or CI. A study of the terminology, principles, and methodology of transformational grammar.

ENG 559. RESTORATION DRAMA (4)
PR: 20 hours of literature. Congreve, Wycherly, Sheridan, and others.

ENG 583. SELECTED TOPICS IN ENGLISH STUDIES (1-4)
PR: 20 hours of literature. The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.

ENG 585. DIRECTED READING (4)
Readings in special topics.

FOR GRADUATE STUDENTS ONLY

ENG 615. MAJOR TRENDS IN AMERICAN LITERATURE (4)
PR: 24 hours of literature in English. An intensive study of selected ideas and movements affecting American letters; for example, Puritanism, Transcendentalism, Regionalism, Pragmatism, Imagism.

ENG 623. LITERARY SCHOLARSHIP AND METHODS OF RESEARCH (4)
PR: 24 hours of literature in English. Introduction of aims and methods of literary scholarship. Detailed studies of bibliographies of cultural milieus, genres, periods, and authors. Brief attention to thesis style and form.

ENG 635. STUDIES IN SIXTEENTH CENTURY LITERATURE (4)
PR: 24 hours of literature in English. Sidney, Spenser, and others.
ENG 657. BRITISH RENAISSANCE PROSE (4)
PR: 24 hours of literature in English. A study of the thematic, generic, and rhetorical development of prose in England from 1500 to 1660. Lyly, Greene, Bacon, Donne, Browne, Hobbes, Milton, and others.

ENG 659. STUDIES IN EIGHTEENTH CENTURY LITERATURE (4)
PR: 24 hours of literature in English. Concentration on selected works, authors or movements between 1660 and 1800.

ENG 667. STUDIES IN THE LATER BRITISH NOVEL (4)
PR: 24 hours of literature in English. Dickens, Thackeray, Eliot, and others.

ENG 681. INDIVIDUAL RESEARCH (credits vary)
PR: CI and 24 hours of literature in English. Directed study in special projects. Special permission of chairman required.

ENG 685. SELECTED TOPICS IN ENGLISH STUDIES (1-4)
PR: 24 hours of literature in English. Current topics offered on a rotating basis include The Nature of Tragedy; The Nature of Comedy and Satire; The Nature of Romanticism and Classicism; The Nature of Realism and Naturalism; The Nature of Myth, Allegory, and Symbolism; and The Figure of the Hero. Other topics will be added in accordance with student demand and instructor interest.

ENG 688. DIRECTED READINGS IN ENGLISH STUDIES (credits vary)
PR: CI and 24 hours of literature in English.

ENG 687. STUDIES IN LATE 19TH CENTURY AMERICAN FICTION (4)
PR: 24 hours of literature in English. Twain, James, Crane, or others.

ENG 691. GRADUATE SEMINAR IN ENGLISH (4)
PR: Consent of graduate advisor.

FINANCE

Faculty: Longstreet, chairman; Brunhild, Deaux, Deiter, Kares, Modrow, Power, Tucker.

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

FIN 202. INTRODUCTION TO INVESTMENTS (3)
Designed for non-business administration students who have not taken accounting or corporation finance, it emphasizes the operations of the security markets in the U. S. and the risks and returns of alternative investment media. Not available for credit to upper level students who have been admitted to the College of Business.

FIN 301. PRINCIPLES OF FINANCE (5)
PR: ACC 203 and ECN 201. Fundamental tools and techniques applicable to financial planning of incorporated and unincorporated business, emphasizing the problems of acquisition, supervision, and allocation of resources.

FIN 302. PRINCIPLES OF INSURANCE (5)
The management of insurable risks by business firms and individuals. Insurance concepts, contracts and institutions including problems of underwriting, loss prevention and settlement.

FIN 305. PRINCIPLES OF REAL ESTATE (5)
Economics of urban land utilization and the nature of property rights. Problems of urban development and the valuation of real property in terms of the structure and operations of the real estate market.
FIN 321. MONEY AND BANKING (4)
PR: ECN 202. Examines the structure and operations of our monetary system, commercial banking, central banking, money and capital markets, and provides an introduction to monetary theory and policy.

FIN 351. INTERNATIONAL FINANCE (5)
PR: ECN 201 and 202 or CI. Principles of foreign exchange and methods of financing business operations in foreign countries.

FIN 411. ADVANCED CORPORATION FINANCE (4)
PR: FIN 301. An examination of the financial policies of publicly-owned corporations, with special reference to dividend policy, financial structure, capital expenditures, acquisitions, mergers and reorganization.

FIN 421. PRINCIPLES OF INVESTMENT (4)
PR: FIN 301 and ECN 202. Survey of the risks and returns of investment media in relation to the investment objective of individual and institution investors. Includes an examination of the capital markets, information flows and analytical techniques in terms of their impact upon the valuation process.

FIN 431. FINANCIAL INSTITUTIONS (4)
PR: FIN 321. A study of financial intermediaries and the capital markets and their interaction in the capital formation process.

FIN 451. FEDERAL RESERVE SYSTEM AND MONETARY POLICY (4)
PR: ECN 323 or FIN 321. An analysis of the structure of the Federal Reserve System and monetary policy within the framework of monetary theories.

FIN 461. POLICY AND STRATEGY IN CORPORATION FINANCE (3)
PR: FIN 411. Senior seminar for majors in finance. Quantitative and qualitative analysis of financial policies based on independent readings and empirical research.

FIN 471. PORTFOLIO MANAGEMENT (3)
PR: FIN 421. Study of principles underlying security selections, timing, and diversification to achieve the optimum balance for various types of investors.

FIN 489. SPECIAL STUDIES IN FINANCE (3)
PR: CI. Independent study program under the guidance of departmental staff. Includes an examination of professional literature and empirical research.

FOR SENIOR LEVEL AND GRADUATE STUDENTS ONLY

FIN 501. BUSINESS FINANCE (3)
PR: ACC 501 and ECN 501 or its equivalent. Accelerated introduction to fundamentals of business finance. Emphasis is on planning and evaluating sources and use of funds. Open only to graduate students or seniors outside the College of Business.

FOR GRADUATE STUDENTS ONLY

FIN 601. FINANCIAL MANAGEMENT (3)
PR: FIN 501 or its equivalent. An examination of financial practice at the level of the individual firm with emphasis on quantitative analysis of the variables affecting solvency and profitability.

FIN 602. ADVANCED FINANCIAL MANAGEMENT (3)
PR: FIN 601. Integration of the financial policies of corporations with the capital markets under various economic conditions.

FINE ARTS (Intradivisional)

Faculty: G. Johnson, W. McCracken, O'Sullivan, Saff.

FNA 543. COMPARATIVE ARTS/ISSUES IN CREATIVITY (3)
PR: Two history courses, theory or literature courses in major area or CC. An
analysis of various theories of art and the intellectual implication of differing propositions about aesthetics.

FNA 553. SENIOR SEMINAR (3)
PR: FNA 543 or CC. To aid majors to understand, appraise and perfect their own art and technique through critical and aesthetic judgements of their colleagues. Discussion and critical evaluation.
Section 001 is reserved for Music and Music Education students.
Section 002 is reserved for Theatre students.
Section 003 is reserved for Visual Art and Art Education students.
Section 004 is reserved for Dance students.

FRENCH

Faculty: Artzybushev, Cherry, DeJongh, Glenisson, de la Menardiere, Suchovy, Wall, Whartenby.

Basic courses listed under Basic Studies.
Also see Romance Languages.

FRE 221. FRENCH FOR READING PROFICIENCY (0)
A rapid coverage of basic grammar and the acquisition of vocabulary necessary for passing the French Reading Knowledge Test.

FRE 301. ADVANCED COMPOSITION (4)
To develop the student's ease in and command of written French and to increase his vocabulary and familiarity with the idiom in free and fixed composition.

FRE 303. ADVANCED CONVERSATION AND PRONUNCIATION (4)
Designed to develop ease in speaking correct French with attention given to aural comprehension, pronunciation and intonation.

FRE 305. SURVEY OF FRENCH LITERATURE (3)
Middle Ages and Renaissance.

FRE 306. SURVEY OF FRENCH LITERATURE (3)
Seventeenth and Eighteenth centuries.

FRE 307. SURVEY OF FRENCH LITERATURE (3)
Nineteenth and Twentieth centuries.

FRE 310. HIGHLIGHTS OF FRENCH LITERATURE IN TRANSLATION (3)
A study in English of the most important writers since the French Revolution. Elective for students in all departments (except French majors).

FRE 353. SELECTED TOPICS (varied)
Course content depends upon student demand and instructor's interest.

FRE 403. FRENCH PHONETICS AND DICTION (2)
French phonology with emphasis on phonic groupings; the International Phonetic Alphabet. Correction of the individual student's errors in diction.

FRE 483. SELECTED TOPICS (varied)
PR: CI. Junior standing. Course content depends upon student demand and instructor's interest.

FRE 491. SENIOR SEMINAR (3)
Study in depth of a specific writer or literary movement as chosen by the instructor. Individual research required of students.

FOR SENIOR LEVEL AND GRADUATE STUDENTS


FRE 501. RENAISSANCE (3)
Early French Renaissance literature with emphasis on Rabelais and Calvin.
FRE 502. RENAISSANCE (3)
Renaissance literature with emphasis on Montaigne and the Pleiade.

FRE 516. FRENCH STYLISTICS (3)
PR: Graduate standing or by special permission. A study of advanced grammar and composition based on an analysis of various styles of writing.

FRE 521. LITERATURE OF THE SEVENTEENTH CENTURY (3)
Preclassical prose and poetry. Malherbe, Voiture, Guez de Balzac, Descartes and Pascal.

FRE 522. LITERATURE OF THE SEVENTEENTH CENTURY (3)
Classical prose and poetry. Boileau, La Fontaine, Bossuet, Madame de La Fayette, Madame de Sevigne, La Rochefoucauld, and La Bruyere.

FRE 523. LITERATURE OF THE SEVENTEENTH CENTURY (3)
The Classical theater. Corneille, Moliere and Racine.

FRE 531. LITERATURE OF THE 18TH CENTURY (3)
The Classical tradition and the new currents of thought 1715-50.

FRE 532. LITERATURE OF THE 18TH CENTURY (3)
Classical decadence and victory of the philosophes 1750-70.

FRE 533. LITERATURE OF THE 18TH CENTURY (3)
The philosophes and Preromantics 1770-89.

FRE 541. LITERATURE OF THE 19TH CENTURY (3)
The Romantic movement in France.

FRE 542. LITERATURE OF THE 19TH CENTURY (3)
Realism, with emphasis on the novels of Balzac.

FRE 543. LITERATURE OF THE 19TH CENTURY (3)
Naturalism and the Parnassian and Symbolist schools.

FRE 551. LITERATURE OF THE 20TH CENTURY (3)
Proust, Gide, Claudel, Valery, Romain and Mauriac.

FRE 552. LITERATURE OF THE 20TH CENTURY (3)
Cocteau, Giraudoux, Anouilh and Montherlant.

FRE 553. LITERATURE OF THE 20TH CENTURY (3)
Sartre, Camus, Malraux, Robbe-Grillet, Ionesco and Beckett.

FRE 553. SELECTED TOPICS IN FRENCH STUDIES (3)
The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.

FOR GRADUATE STUDENTS ONLY

FRE 601. OLD FRENCH (3)
A study of Old French morphology, phonetics and syntax with an introduction to the reading of Old French texts.

FRE 602. MEDIEVAL FRENCH LITERATURE (3)
A study of French literature in the Middle Ages.

FRE 611. RABELAIS. (3)
A detailed study of the works of the author with emphasis on his role as a humanist of the Renaissance.

FRE 612. MONTAIGNE (3)
A study of the complete works of Montaigne.

FRE 613. LA PLEIADE (3)
A study in depth of the writers of the Pleiade.

FRE 621. RACINE (3)
A study of the complete works of Racine.

FRE 622. MOLIERE (3)
A study of the complete works of Moliere.

FRE 623. PROSE WRITINGS OF THE SEVENTEENTH CENTURY (3)
A study of the prose writings of the seventeenth century.
FRE 631. VOLTAIRE (3)
A study in depth of the works of Voltaire.

FRE 632. ROUSSEAU (3)
A study in depth of the works of Rousseau.

FRE 641. BALZAC AND THE NOVEL (3)

FRE 642. ROMANTIC DRAMA AND POETRY (3)
A study in depth of the poetry and drama of the three major poets, Vigny, Musset and Hugo.

FRE 643. THE SYMBOLIST POETS (3)
A study in depth of Rimbaud, Verlaine, Baudelaire and Mallarme, including their influence on poetry of the twentieth century.

FRE 653. EXISTENTIAL NOVEL AND DRAMA (3)
A study in depth of the works of Sartre and Camus.

FRE 654. DRAMA BETWEEN THE TWO WORLD WARS (3)
A study of drama which was revised after World War I and ended with the formation of new schools at the beginning of World War II.

FRE 655. SAINT EXUPERPY AND THE NOVEL OF ACTION (3)
A study of the literature of action by men of action, with emphasis on Saint Exupery, also J. Kessel, A. Malraux, H. de Montherlant, H. de Monfreid.

FRE 656. F. MAURIAC AND THE NOVEL OF THE UNCONSCIOUS (3)
A study of the novel of Mauriac from the point of view of the contribution of the unconscious mind to French literature and its place in the contemporary novel.

FRE 661. MINOR WRITERS IN FRENCH LITERATURE (3)
A study of the minor writers who were important as precursors of developing literary schools.

FRE 689. FRENCH BIBLIOGRAPHY (0)
Training in use of library materials for graduate research and study. Lectures by library staff on general use of research material and by specialists on specific areas of French literature. Required of all candidates for the MA in French.

FRE 691. GRADUATE SEMINAR (3)
Study of an author or authors or a literary movement. Extensive research, class discussion and papers required. Subject chosen to be announced one quarter in advance.

GENERAL BUSINESS ADMINISTRATION

Faculty: Grant, Kenerson, Reynolds, Welker.

GBA 351. DATA PROCESSING PRINCIPLES (5)
Punched-card data processing (equipment, techniques, and application), electronic data processing (hardware, software, and sequential vs. real-time processing), and preparation of business system programs in COBOL.

GBA 361. BUSINESS LAW I (5)
The nature of legal institutions, essentials of a binding contract, remedies granted in event of breach of contract and rights acquired by assignment of contracts.

GBA 362. BUSINESS LAW II (5)
PR: GBA 361. Legal problems in marketing of goods, nature of property, sales of personal property, securing of credit granted, nature and use of negotiable instruments.

GBA 363. THE LAW OF BUSINESS ASSOCIATIONS (5)
PR: GBA 361. A study of the law of corporations, the law of partnerships, and the law of agency.

GBA 371. BUSINESS COMMUNICATIONS (4)
Analysis and application of the principles of persuasion in business communication; composition and evaluation of functional business letters; examination of effective text, tabular and graphic presentation in formal business reports.
GEOGRAPHY

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

GBA 499. SENIOR SEMINAR IN BUSINESS ADMINISTRATION (3)
PR: Graduating senior. Students draw upon materials from their complete college program and apply them to case studies, research projects and class discussion. Topics include business policy, operations, and the environment of business.

FOR GRADUATE STUDENTS ONLY

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

GBA 699. THESIS (6)

GEOGRAPHY

Faculty: Fuson, chairman; Hartshorn, Limoges, Rothwell, Stowers.

GPY 201. INTRODUCTION TO GEOGRAPHY (4)
Nature, method, principles, and concepts of the discipline; maps and their properties; earth-sun relations, weather elements, place names. Prerequisite to all undergraduate courses in geography.

GPY 301-302. SYSTEMATIC GEOGRAPHY (4-4)
PR: GPY 201. General description and analysis of the major physical and cultural elements and resources of the geographic landscape. Prerequisite to all higher undergraduate courses in geography.

GPY 403. PHYSICAL GEOGRAPHY (2-5)
PR: GPY 201, 301-302, and CI. Courses include: meteorology, climatology, physiography, biogeography, soils, water bodies. May be repeated as courses vary, but the same course may not be repeated for credit.

GPY 405. CULTURAL GEOGRAPHY (2-5)
PR: GPY 201, 301-302. Courses include: economic, political, urban, historical geography; population, settlement, conservation. May be repeated as courses vary, but the same course may not be repeated for credit.

GPY 407. REGIONAL GEOGRAPHY (2-5)
PR: GPY 201, 301-302. Synthesis and analysis of the physical and cultural elements in a selected geographic region. May be repeated as regions vary, but the same region may not be repeated for credit.

GPY 409. GEOGRAPHIC TECHNIQUES AND METHODOLOGY (2-5)
PR: GPY 201, 301-302, and CI. Courses include: cartography, graphics, map design and analysis, air photo interpretation, field methods, quantitative analysis, seminar. May be repeated as courses vary, but the same course may not be repeated for credit.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

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

GPY 503. METHODOLOGY I: QUANTITATIVE (4)
PR: Senior or graduate standing in geography, and a course in statistics, or CI. The application of quantitative techniques to geographic problems; factor, sensitivity, and spatial analysis.
GPY 505. METHODOLOGY II: CARTOGRAPHIC (4)
PR: Senior or graduate standing in geography, GPY 409 (Cartography), or CI. Application of various techniques for presenting graphic illustrations as research tools.

GPY 507. METHODOLOGY III: FIELD WORK (4)
PR: Senior or graduate standing in geography, GPY 503, 505. Data collection in a field situation, including observation, classification, interpretation, and presentation of the data.

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

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

FOR GRADUATE STUDENTS ONLY

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

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

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

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

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

GPY 699. THESIS (9)

GEOLOGY

Faculty: Ragan, chairman; Boulware, Griffin, O'Donnell, Sommers, Stevenson.

GLY 201. INTRODUCTION TO GEOLOGY (5)
Study of earth materials and the processes responsible for changing the face of the earth. Examination of minerals and rock specimens, topographic and geologic maps and aerial photographs. Historical geology (GLY 301) continues the study. Occasional field trip studies. lec-lab.

GLY 301. INTRODUCTION TO HISTORICAL GEOLOGY (4)
Study of the record of past life and interpretation of the major physical events in the history of the earth. Occasional field trip studies. lec-lab.

GLY 302. INTRODUCTION TO PALEONTOLOGY I (4)
PR: GLY 301 or CI. Paleontology and stratigraphic occurrence of most important invertebrate fossils of the geologic record. lec-lab.

GLY 303. INTRODUCTION TO PALEONTOLOGY II (4). The second half of GLY 302.
GLY 311. MINERALOGY I (4)
PR: GLY 201 and CHM 211-212-213, or equivalent. Origin, occurrence, and chemistry of mineral groups. Identification of common minerals by physical and chemical properties. lec-lab.

GLY 312. MINERALOGY II (4)
PR: GLY 311. (Non-majors from other departments, CC.) Introduction to crystallography and the petrographic microscope. Identification of minerals by means of optical properties.

GLY 313. PETROLOGY (4)
PR: GLY 312. Systematic study of rock groups, including composition, origin, and classification using modern methods of rock study. lec-lab.

GLY 351. INTRODUCTION TO HYDROGEOLOGY (5)
PR: GLY 301 and CC. Occurrence, circulation, and distribution of subsurface water, its chemical and physical properties, relation to the geologic environment, exploration and development. lec-field-lab.

GLY 352. INTRODUCTION TO HYDROGEOLOGY II (5)
The second half of GLY 351.

GLY 361. STRUCTURAL GEOLOGY (5)
PR: GLY 201 or equivalent. Application of basic principles of geology, mathematics, and physics in solving relationships of strata and interpreting structural features in the earth's crust.

GLY 401. FIELD AND SUBSURFACE METHODS (5)
PR: 12 hours of geology courses, CC. Fundamentals of geology in the field and marine laboratory; compass and plane table mapping, mapping of aerial photos, reconnaissance surveys, interpretation of geologic structures. lec-lab.

GLY 411. MARINE GEOLOGY (4)

GLY 441. ECONOMIC MINERAL DEPOSITS (4)
PR: or CR: GLY 311. Principles involved in the origin, occurrence, recovery, and use of mineral resources. lec-lab.

GLY 471. GEOLOGY OF SOILS (5)
PR: General Chemistry or equivalent. The origin, geologic development, formation, and nature of soils. Fundamentals of soil science, including the physical, chemical, and biological factors affecting soil fertility with special application to the soils and ecology of Florida. lec-lab.

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

GLY 475. HYDROGEOLOGY AND HUMAN AFFAIRS (5)
PR: Open to all junior and senior level students. Geologic analyses of the present critical and urgent problems of water resources, pollution control, water supply, flood control, and underground waste disposal as they relate to economic, legal and other social aspects of modern society. No credit for majors.

GLY 481. UNDERGRADUATE RESEARCH (1-6)
PR: Senior or advanced junior standing and CI. Individual experimental investigations with faculty supervision. Limit of six credits.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

GLY 508. SEDIMENTATION I (4)
PR: GLY 308 and 312. Geologic factors governing chemical, physical, and biological interactions and deposition of sediments. lec-lab.
GLY 504. SEDIMENTATION II (4). The second half of GLY 503.
GLY 512. MARINE GEOLOGY (4)
PR: Senior or graduate standing in a natural science and CC. Geological interpretation of marine processes and products. Seminar and field studies. lec-lab.
GLY 521. GENERAL GEOPHYSICS (4)
PR: Senior or advanced Junior standing, one year of Physics, or CI. Earth's magnetic fields, gravity, electrical properties, seismic wave paths and velocities, radioactivity, and heat flow. lec-lab.
GLY 531. PRINCIPLES OF STRATIGRAPHY (4)
PR: GLY 504. Environmental and paleogeographic reconstruction of sedimentary basins. Seminar. lec-lab.
GLY 532. ADVANCED STRATIGRAPHY (5)
PR: GLY 531 or CI. Study of the stratigraphy and paleotectonic development of North America and Europe.
GLY 533. GEOMORPHOLOGY (4)
PR: CC. Origin, evolution, and distribution of land forms.
GLY 541. GEOPHOTO INTERPRETATION (5)
PR: Senior standing, GPY 409 and/or CI. Geo-analysis of air photos and earth data, including some acquired by remote sensing techniques. Analysis of chemical and physical sample data. lec-lab.
GLY 561. X-RAY ANALYSIS (2)
PR: GLY 312 or CI. (Non-majors from other areas, CI.) The use of X-rays for the identification of crystalline materials.
GLY 571. GEOCHEMISTRY (4)
PR: CHM 211, 212, 213, or equivalent, GLY 201, GLY 313. Application of the laws of chemical equilibrium and resultant chemical reactions to natural earth systems. lec.
GLY 583. SELECTED TOPICS IN GEOLOGY (1-6)
PR: Senior or advanced junior standing and CC. Each topic is a course in directed study under supervision of a faculty member. Courses include: Introductory Geological Oceanography, Advanced Stratigraphic Paleontology, Palynology, Sedimentary Processes, Sedimentary Techniques, Universal Stage, Marine Geophysics, Exploration Geophysics, and Seismology.
GLY 591. GEOLOGY SEMINAR (1)
PR: Seniors or advanced junior standing and CC. May be repeated once.

FOR GRADUATE STUDENTS ONLY

GLY 604. RECENT FLUVIAL, TRANSITIONAL, AND CONTINENTAL SHELF SEDIMENTATION (4)
PR: GLY 504 or CI. Environmental factors and resulting sediment types accumulated in fluvial, transitional, and continental shelf environments. lec-lab.
GLY 605. OCEANIC SEDIMENTATION (3)
PR: GLY 504 or CI. Structural development, sedimentation processes, and sediments of shoreline, continental slope, continental rise, and abyssal plain environments. lec-lab.
GLY 607. CARBONATE PETROLOGY I (4)
PR: GLY 504 or CC. Genesis of recent carbonate sediments, and the interpretation of ancient carbonate rocks by the use of conceptual models. Field-lab-seminar. Alternate years.
GLY 608. CARBONATE PETROLOGY II. (4) The second half of GLY 607.
GLY 611. ADVANCED IGNEOUS PETROGENESIS (4)
PR: CI. Detailed study of igneous rocks and their origin.
GLY 612. ADVANCED METAMORPHIC PETROGENESIS (4)
PR: CI. Detailed study and interpretation of metamorphism and the origin of
metamorphic rock complexes, utilizing thin section microscopy, X-ray diffraction, and chemical analyses.

GLY 621. MARINE MICROPALeONTOLOGY (6)
PR: GLY 301, 303 or equivalents and CC. Principal groups of microfossils in marine sediments and cores. Paleoecology, correlation, and applications to petroleum and paleomarine problems.

GLY 631. CENOZOIC STRATIGRAPHY (3)
PR: GLY 551 or CI. Structural elements, paleogeography, stratigraphy, and economic resources of the Gulf of Mexico coastal plain. lec-lab.

GLY 651. HYDROGEOLOGY OF CARBONATE TERRANES (5)
PR: GLY 351, 352, Mth 211, 212, 213 and/or CC. Hydrogeology of carbonate terranes occurring under humid, semi-arid and arid conditions with special emphasis on problems related to development of these terranes for human use. lec-field-lab.

GLY 661. CLAY PETROLOGY (4)
PR: GLY 313, 561, or CC. Composition, structures, origin, and diagenesis of clay minerals. Identification of clay minerals by x-ray diffraction techniques.

GLY 673. HISTORY OF GEOLOGY (2)
PR: CC. Historical development of geologic thought from standpoint of theory and principle with developing areas. lec. Alternate years.

GLY 675. GEOLOGY OF FLORIDA (5)
PR: 24 hours of earth science credits or CI. Designed for teachers of earth science. Mineralogy, structure, stratigraphy, paleontology, geomorphology, tectonics, and petrology of Florida and contiguous areas. lec-field-lab.

GLY 681. GRADUATE RESEARCH (1-9)
PR: CC.

GLY 683. SELECTED TOPICS IN MARINE GEOLOGY (1-6)

GLY 691. GRADUATE SEMINAR (2)
PR: CC.

GLY 699. THESIS (2-9)
PR: CC.

Faculty: Grothmann, Price, Stelzmann.

Basic courses listed under Basic Studies.

GER 221. GERMAN FOR READING PROFICIENCY (0)
A rapid coverage of basic grammar and the acquisition of vocabulary necessary for passing the German Reading Knowledge Test.

GER 301-303. ADVANCED COMPOSITION AND CONVERSATION (4,4)
Intensive study of writing and conversation skills based on reading in German cultural history and drama. Descriptive grammar and syntax.

GER 305. SURVEY OF GERMAN LITERATURE (3)
Old High German and Middle High German Literature in modern translations; the literature of Humanism and Barock.

GER 306. SURVEY OF GERMAN LITERATURE (3)
Literature of the Enlightenment; the Classical period.
GER 307. SURVEY OF GERMAN LITERATURE (3)
The Romantic period; the literature of the nineteenth and twentieth centuries.

GER 310. HIGHLIGHTS OF GERMAN LITERATURE IN TRANSLATION (3)
A study in English of the most significant works of Luther, Grimmelshausen, Lessing, Goethe, Schiller, Kant, Hegel, Nietzsche, Buchner, Mann, Heidegger, Kafka, Musil, Freud, Scheler. Elective for students in all departments (except German majors).

GER 383. SELECTED TOPICS (varied)
Course content depends upon student demand and instructor’s interest.

GER 483. SELECTED TOPICS (varied)
PR: CI. Junior standing. Course content depends upon student demand and instructor’s interest.

FOR SENIOR LEVEL AND GRADUATE STUDENTS


GER 513. HISTORY OF GERMAN LANGUAGE (3)
Development of the language from the Indo-European family: Gothic, Old High German to Middle High German.

GER 514. HISTORY OF GERMAN LANGUAGE (3)
The development of Modern High German.

GER 516. GERMAN STYLISTICS (3)
PR: Completion of GER 300 requirements. A study of syntax, grammar, and stylistic devices of the language based on an analysis of various styles of writing.

GER 521. GOETHE’S FAUST (3)
Sources, form, content, and literary significance of Urfaust and Faust I.

GER 531. CLASSICAL PERIOD (3)
Goethe: novels, novelle and autobiographical writings; lyric poems and epics; dramas (except Faust).

GER 532. CLASSICAL PERIOD (3)
Schiller: philosophical writings, drama and poetry.

GER 533. ROMANTIC PERIOD (3)
Jenaer circle and Heidelberger circle.

GER 534. ROMANTIC PERIOD (3)
The late Romantic period, the writers between Classicism and Romanticism.

GER 541. LITERATURE OF THE 19TH CENTURY (3)
Dramatists: Grillparzer, Grabbe, Büchner and Hebbel. Critics: Heine, Laube and Immermann.

GER 542. LITERATURE OF THE 19TH CENTURY (3)

GER 551. LITERATURE OF THE 20TH CENTURY (3)
Dramatists and novelists: Hauptmann, Mann, Jünger, von Hofmannsthal, Hesse, Carossa, Werfel, Kafka, Musil and Brecht.

GER 552. LITERATURE OF THE 20TH CENTURY (3)
Poets: Rilke, Schröeder, Loehrke, Heym, Trakle, Lasker-Schüler, Benn and Aichinger.

GER 553. SELECTED TOPICS IN GERMAN STUDIES (var.)
The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.

GER 553. CONTEMPORARY GERMAN LITERATURE (3)
PR: Completion of GER 300 requirements. A study of Post World War II writers.
GER 583. SELECTED TOPICS IN GERMANIC STUDIES (var.)
The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.

GERONTOLOGY

Faculty: Rich, Director; Gilmore, Kaplan, Krivanek, Lawton, Morell, Saxon, Wilson, Davis

FOR SENIOR LEVEL AND GRADUATE STUDENTS

AGE 501. SURVEY OF MANAGEMENT (3)
See MGT 501.

FOR GRADUATE STUDENTS ONLY

AGE 601. BIOLOGY OF AGING (3)
Lectures and discussions concerned with the biological bases of the aging phenomenon as it occurs on the levels of the cell, the tissue, the organ, and the organism.

AGE 602. PSYCHOLOGY OF AGING (3)
Consideration of basic psychological processes as related to the aging process. Changes in functioning in perceptual, motor and cognitive areas from a developmental perspective.

AGE 603. SOCIAL RESEARCH METHODS APPLIED TO GERONTOLOGY (4)
Systematic study of the methods and techniques employed in social, psychological, and health studies of population groups. It is directed toward the consumers of research findings—persons whose positions call for the ability to interpret, evaluate, and apply the findings produced by others.

AGE 604. AGING AND PERSONALITY (3)
Personality theory and concepts of adjustments are studied with an introduction to counseling techniques and rehabilitative efforts with the aged.

AGE 606. INSTITUTIONAL ADMINISTRATION (3)
This course deals with the management problems and practices in the administration of institutions in the field of aging. Consideration will be given to the economics of aging, federal and state legislation, the management of people, and fiscal management.

AGE 607. SOCIOLOGICAL ASPECTS OF AGING IN THE UNITED STATES (4)
Examines, within a sociological frame of reference, the interrelationship between the aged (or aging) and the structure and function of the social system and its major institutionalized subsystems.

AGE 608. HUMAN RELATIONS IN ORGANIZATIONS (3)
An analytical view of the modern human relations movement with stress on development since the 1930's. Incorporates the philosophy of the behavioral sciences and alternative theories and relates them to the management process in gerontology.

AGE 609. LEISURE FOR THE AGING (3)
The seminar will consist of general data and observations on trends and research in the leisure field, directed theoretical analysis of these studies as they pertain to the elderly and contact with programs by visits, interviews and reports.

AGE 610. ADMINISTRATIVE APPLICATIONS OF DEMOGRAPHY (3)
Acquaints the student with various sources of demographic data and its use.
Emphasis is placed upon applicability in program planning and student experience in locating, tabulating, and interpreting data from selected publications.

AGE 691. SEMINAR IN SOCIAL GERONTOLOGY (3)
Designed to give the graduate student an opportunity to integrate concepts within the field of gerontology and relate these to other fields of study. Guest lecturers from a variety of disciplines participate in the seminar.

AGE 692. SEMINAR IN SOCIAL GERONTOLOGY (3)
See above.

AGE 693. SEMINAR IN SOCIAL GERONTOLOGY (3)
See above.

AGE 694. SEMINAR IN SOCIAL GERONTOLOGY (3)
See above.

AGE 695. FIELD PLACEMENT (12)

HISTORY

Faculty: Abbott, Chairman; Amade, Billingsley, Burke, Currey, DellaGrotte, Hilliard, Jacob J., Jacob M., Jordan, Kleine, Leonard, Mayer, Parker, Rollins, Silbert, Swanson.

PART I

HTY 100. THE IDEA OF HISTORY (4)
Required of all history majors. The course deals with history conceived as a mode of inquiry, emphasizing the acquisition of the conceptual tools required for systematic, critical thought about human problems in the historical perspective. May be waived in the case of transfer students.

HTY 201, 202. ANCIENT HISTORY (4,4)
PR: HTY 100 or CI. A thematic survey of the ancient civilizations. 201 offers instruction in the early civilizations, including the Sumerian, Egyptian, Hebrew, and Persian; 202 treats the classical civilizations of Greece and Rome. Attention is drawn to the correlative work in CLS 321 Ancient civilization.

HTY 211, 212. AMERICAN HISTORY (4,4)
PR: HTY 100 or CI. A history of the United States with attention given to relevant developments in the Western Hemisphere. 211: European origins to 1865; 212: 1865 to present.

HTY 221, 222. MEDIEVAL HISTORY (4,4)
PR: HTY 100 or CI. A thematic survey of the Middle Ages. 221 deals with the nascent, Christian civilization of Europe, circa 300-1050 A.D.; 222 treats the mature medieval civilization of Europe, circa 1050-1500.

HTY 231, 232. MODERN EUROPEAN HISTORY (4,4)
PR: HTY 100 or CI. A thematic survey of Europe in the modern age. 231 treats the period from the Renaissance to the French Revolution; 232, from the French Revolution to the present.

HTY 251, 252. LATIN AMERICAN HISTORY (4,4)
PR: HTY 100 or CI. A thematic survey of the Iberian-Indian civilization in the New World from the 15th through the 20th Centuries. 251 treats the period from discovery to the independence movements of the 19th Century; 252, the Ibero-American states from the Wars of Independence to the present.

PART II

HTY 301, 302. A HISTORY OF THE AMERICAN COLONIAL PERIOD (4,4)
PR: HTY 100, 211, 212, or CI. A study of European interest and involvement
HISTORY 207

in America from the Age of Reconciliation to 1789 with emphasis on institutional development and the establishment of the American national system.

HTY 315, 316. THE CIVIL WAR AND ITS AFTERMATH (4,4)
PR: HTY 100, 211, 212 or CI. A study of the causes of the Civil War and the factors, forces and atmosphere which produced the reconstruction policy following the war.

HTY 317. HISTORY OF FLORIDA (4)
A history of Florida and the Caribbean. Florida as an area of discovery colonization and imperial conflict; the emergence of Florida within its regional setting.

HTY 319, 320. THE EMERGENCE AND GROWTH OF MODERN AMERICA (4,4)
PR: HTY 100, 211, 212, or CI. A study of the transition of American society from the end of Reconstruction to the present. 319 treats the era from 1877 to World War I; 320 focuses on the period from World War I to the present.

HTY 321, 322. ANCIENT GREECE (4,4)
PR: HTY 100, 201, 202, or CI. A study of Greece in the ancient period. 321 offers instruction in the pre-Hellenic and Hellenic periods; 322 treats developments in the Hellenistic period. Attention is drawn to the correlative work in CLS 527 Greek Civilization.

HTY 324. MEDIEVAL SPAIN AND PORTUGAL (4)
PR: HTY 100, 221, 222, or CI. A study of the peoples of the Iberian Peninsula in the Middle Ages.

HTY 325, 326. ANCIENT ROME (4,4)
PR: HTY 100, 201, 202, or CI. A study of Rome in the ancient period. 325 offers instruction in the history of the Roman Republic; 326 treats the development of the Roman Empire. Attention is drawn to the correlative work in CLS 529 Roman Civilization.

HTY 327, 328. MEDIEVAL INSTITUTIONAL HISTORY (4,4)
PR: HTY 100, 221, 222, or CI. A study of the major institutions of feudal Europe. 327 treats the history of the Empire and Papacy; 328 deals with the history of the Western monarchies.

HTY 329. MEDIEVAL ENGLISH HISTORY (4)
PR: HTY 100, 221, 222, or CI. A study of the major developments in England from the Anglo-Saxon period to the 15th Century.

HTY 333, 334. FRENCH HISTORY (4,4)
PR: HTY 100, 231, 232, or CI. A study in the major developments of French history in the modern period. 333 deals with the period from the Renaissance to the French Revolution; 334, from the Revolution to the present.

HTY 335, 336. GERMAN HISTORY (4,4)
PR: HTY 100, 231, 232, or CI. A study of the major developments of German history. 335 deals with the period from the Reformation to the French Revolution; 336, from the Revolution to the present.

HTY 337, 338. RUSSIAN HISTORY (4,4)
PR: HTY 100, 231, 232, or CI. A study of the primary social, economic, and cultural forces which have shaped the historical development of Russia. 337 treats the period to 1855; 338, 1855 to present.

HTY 341, 342. BRITISH HISTORY (4,4)
PR: HTY 100, 231, 232, or CI. A study of the major developments of British history. 341 treats the period from the Reformation to 1715; 342, from 1715 to present.

HTY 345, 346. BRITISH EMPIRE AND COMMONWEALTH (4,4)
PR: HTY 100, 231, 232, or CI. A study of the old and new empires with emphasis upon the evaluation of the Commonwealth.

HTY 347. HISTORY OF CANADA (4)
PR: HTY 100 or CI. A study of the major themes in the political and social
development of Canada, with particular emphasis on the origins and development of French-Canadian nationalism, continentalism, and dominion-provincial relations.

HTY 353. HISTORY OF MEXICO (4)
PR: HTY 100, 251, 252, or CI. A study of Mexican history from discovery to the present, with emphasis on the empire and republican periods.

HTY 355. HISTORY OF BRAZIL (4)
PR: HTY 100, 251, 252, or CI. A study of Brazilian history from discovery to the present with emphasis on the empire and republican periods.

PART III

HTY 409, 410. A HISTORY OF AMERICAN FOREIGN RELATIONS (4,4)
PR: HTY 100, 211, 212, or CI. The development of American foreign relations from the Revolution to the present. HTY 409 deals with earlier period to 1877; HTY 410, with the period from 1877 to present.

HTY 411, 412. AMERICAN SOCIAL AND INTELLECTUAL HISTORY (4,4)
PR: HTY 100, 211, 212, or CI. A study of the major religions and philosophical ideas of the American people in relation to the nation's social environment. 411 deals with the earlier period to 1865; 412, from 1865 to present.

HTY 421, 422. A HISTORY OF THE AMERICAN ECONOMIC PROCESS (4,4)
PR: HTY 100, 211, 212, ECN 201, 202, or CI. The development of American economic thought and policies from the colonial period to the present, emphasizing the inter-relationship of economic development with the major political, ideological, and institutional currents of American history. A student may not receive credit for both HTY 421, 422, and ECN 371.

HTY 423. MEDIEVAL THOUGHT AND CULTURE (4)
PR: HTY 100, 221, 222, or CI. A study of the culture and the major intellectual developments of the medieval period.

HTY 425, 426. A HISTORY OF THE RENAISSANCE AND REFORMATION PERIODS (4,4)
PR: HTY 100, 231, 232, or CI. HTY 425 deals with the European Renaissance; HTY 426 with the major developments of Reformation Europe.

HTY 427, 428. EUROPE IN THE BAROQUE AND ENLIGHTENMENT PERIODS (4)
PR: HTY 100, 231, and any two of courses 333, 335, 337 and 341 or CI. A study with emphasis on comparative developments. 427 deals with major topics of the Baroque period; 428, with the Enlightenment.

HTY 429, 430. EUROPE IN THE NINETEENTH AND TWENTIETH CENTURIES (4,4)
PR: HTY 100, 231, 232, or CI. A study with emphasis on comparative developments. 429 treats the Nineteenth Century; 430, the Twentieth Century.

HTY 431, 432. EUROPEAN SOCIAL AND INTELLECTUAL HISTORY (4,4)
PR: HTY 100, 231, 232, or CI. Selected topics in the social and intellectual history of modern Europe. 431 treats the early modern period; 432, the Nineteenth and Twentieth Centuries.

HTY 451. A HISTORY OF INTER-AMERICAN RELATIONS (4)
PR: HTY 100, 251, 252, or CI. An examination of the mutual problems of the American nations since independence with emphasis upon the development of Pan Americanism and the Organization of American States.

HTY 453. SOCIAL AND INTELLECTUAL HISTORY OF LATIN AMERICA (4)
PR: HTY 100, 251, 252, or CI. A study of the origins and development of major intellectual and social trends affecting the histories of the Latin American people.

HTY 455. STUDIES IN TUDOR-STUART ENGLAND (4)
PR: HTY 100, 231, 232, or CI. Selected topics in the history of Sixteenth and Seventeenth Century England.
HTY 461. REVOLUTION IN THE MODERN WORLD (4)
PR: HTY 100, 231, 232, or CI. An analytical and comparative study of the nature of revolution in modern history leading to a development of a paradigm of the revolutionary process.

HTY 465. SCIENCE AND CIVILIZATION (4)
PR: HTY 100, 231, 232, or CI. A comparative survey of the impact of science on Western civilization from the ancient Egyptians to the present, emphasizing the relationship of science to the socio-economic, political, and intellectual development.

HTY 485. DIRECTED READING (1-4)
PR: Arrangement with instructor prior to registration. Readings in special topics.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

HTY 587. THEORY OF HISTORY (4)
PR: To be taken during the senior year. An investigation of the philosophical problems of history, with emphasis on the evolution of the discipline.

HTY 591. PRO-SEMINAR IN HISTORY (4)
Advanced topics in the fields emphasizing readings and discussions of research and writing. One pro-seminar is required of all history majors. Non-majors may enroll with the consent of the instructor. Topics vary within each field.

HTY 592. SENIOR SEMINAR IN HISTORY (4)
Introduction to the methods of historical research and writing, bibliography, and directed research in special topics designed to meet the particular needs and interests of individual students.

FOR GRADUATE STUDENTS ONLY

HTY 600. ANALYSIS OF HISTORICAL KNOWLEDGE (4)
A study of history as a form of knowledge with emphasis on epistemological considerations of the explanation devices and models of the discipline.

HTY 601. THEORY AND INTERPRETATION (4)
A systematic examination and evaluation of various schools of historical interpretation.

HTY 602. HISTORY AND THE SOCIAL SCIENCES (4)
An examination of the conceptual modes and methodology of the other disciplines with emphasis upon their application to historical research.

HTY 650. COLLOQUIUM IN HISTORY (4)
Reading and discussion of selected topics within the fields. Subject and scope to be determined by the instructor. May be repeated for credit.

HTY 655. READINGS IN HISTORY (1-4)
Arrangement with instructor prior to registration and CC. Individual reading and discussion of selected problems. May be repeated for credit.

HTY 691. SEMINAR IN HISTORY (4)
Research in selected problems within the fields. Subject and scope to be determined by the instructor. May be repeated for credit. The master's candidate is required to satisfactorily complete work in at least one graduate seminar to fulfill the requirement for the Master's Degree in History.

HTY 699. THESIS IN HISTORY (1-8)
Required of all candidates for the Master's Degree in History.

HUMANITIES

Faculty: Kiefer, chairman; E. Brown, J. B. Camp, Frantz, Gowen, Guinagh, Hey, Hoffman, Juergensen, Kashdin, Koenig, Mackay, Peizer, Rutenberg, Shackson, W. Smith, Spillane, Watkins.
HUM 311, 312, 313. HUMANITIES AND HUMANE VALUES (3,3,3)
PR: CBS requirement in humanities or CI. Masterpieces of music, visual arts, theater, literature, and philosophy in varying cultural and historical situations.

HUM 411, 412. TWENTIETH-CENTURY ARTS AND LETTERS (5,5)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the twentieth century.

HUM 415, 416. ARTS AND LETTERS OF THE ROMANTIC PERIOD (3,3)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the romantic period.

HUM 417, 418. NINETEENTH-CENTURY ARTS AND LETTERS (3,3)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the nineteenth century.

HUM 419, 420. THE ENLIGHTENMENT (3,3)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the Enlightenment.

HUM 423, 424. RENAISSANCE ARTS AND LETTERS (3,3)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the Renaissance.

HUM 427, 428. MEDIEVAL ARTS AND LETTERS (3,3)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the middle ages.

HUM 431, 432. CLASSICAL ARTS AND LETTERS (3,3)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the ancient world.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

HUM 535, 536, 537. HUMANITIES IN AMERICA (4,4,4)
PR: CBS requirement in humanities or CI. Case studies in the arts and letters of the United States.

HUM 539, 540. SELECTED NON-WESTERN HUMANITIES (4,4)
PR: CBS requirement in humanities or CI. Materials chosen from the arts and letters of Southeast Asia and Northeast Asia.

HUM 541. HUMANITIES IN THE ORIENT: INDIA (4)
PR: CBS requirement in humanities or CI. Examples from the arts and letters of India and the relationship of these arts to the Hindu and Buddhist philosophy-religions.

HUM 542. HUMANITIES IN THE ORIENT: CHINA (4)
PR: CBS requirement in humanities or CI. Examples from the arts and letters of China; their relationship to Taoism, Confucianism and other Chinese philosophies; Western influences on 20th-century Chinese arts and letters.

HUM 543. HUMANITIES IN THE ORIENT: JAPAN (4)
PR: CBS requirement in humanities or CI. Examples from the arts and letters of Japan, their relationship to Zen Buddhism and other Japanese philosophy-religions; Western influences on 20th-century Japanese arts and letters.

HUM 545. LATIN AMERICAN ARTS AND LETTERS (3)
PR: CBS requirement in humanities or CI. Analysis of selected Latin American works of art in their cultural context.

HUM 551. DIRECTED STUDY (1-5)
PR: CBS requirement in humanities and CI. Specialized individual study determined by the student's needs and interest.

HUM 591. SELECTED PROBLEMS IN HUMANITIES (3)
PR: Senior classification and CI. Problems in the interrelationships among the fine arts and the natural, social and behavioral sciences. A senior essay for humanities majors.
FOR GRADUATE STUDENTS ONLY

HUM 611. STUDIES IN CONTEMPORARY ARTS AND LETTERS (3)
Concentration on major artists and recent trends.
HUM 623. STUDIES IN THE RENAISSANCE (3)
Masterpieces and major artists of the Renaissance in Europe and England.
HUM 681. DIRECTED STUDY (1-4)
Specialized independent study determined by the student’s needs and interests.
HUM 683. SELECTED TOPICS IN HUMANITIES (3)
Each topic is a course of study in a subject not covered by a regular course.
HUM 691. MASTER’S ESSAYS (5)
Required of graduate students in humanities.

ITALIAN

Faculty: Artzybushev, Milani.
Basic courses listed under Basic Studies.
History of Romance Languages listed under Romance Languages.

ITA 301. ADVANCED ITALIAN COMPOSITION (4)
To improve the student’s ability in writing Italian, to increase his ability in comprehension and use of the grammatical elements. Practice in both free and fixed composition.

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

ITA 305. SURVEY OF ITALIAN LITERATURE (3)
Origins of Italian literature and Medieval Italian literature.

ITA 306. SURVEY OF ITALIAN LITERATURE (3)
General aspects of the literature of the Renaissance and the literature through the Eighteenth century.

ITA 307. SURVEY OF ITALIAN LITERATURE (3)
The major movements of the Nineteenth and Twentieth centuries.

ITA 310. HIGHLIGHTS OF ITALIAN LITERATURE IN TRANSLATION (3)
A study in English of the most important writers since the Fourteenth Century. Elective for students in all departments (except Italian majors).

ITA 383. SELECTED TOPICS (varied)
Course content depends upon student demand and instructor’s interest.

ITA 483. SELECTED TOPICS (varied)
PR: CI. Junior standing. Course content depends upon student demand and instructor’s interest.

ITA 491. SENIOR SEMINAR (3)
Study in depth of a specific writer or literary movement, as chosen by the instructor. Individual research required of students.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

PR: ITA 305, 306, 307

ITA 511. DANTE (3)
Emphasis on historical period; Dante’s life and minor works.

ITA 512. DANTE (3)
Divine Comedy: Inferno.

ITA 513. DANTE (3)
Divine Comedy: Purgatorio and Paradiso.
ITALIAN LITERATURE (3)

ITALIAN LITERATURE (3)

Romanticism in Italy.

ITALIAN LITERATURE (3)

Realism and Naturalism in Italy.

ITALIAN LITERATURE (3)

A comprehensive study of the major writers through the "Decadentismo." Special emphasis on D'Annunzio.

ITALIAN LITERATURE (3)

A comprehensive study of the major writers from the "Idealismo filosofico" up to the present time, with special emphasis on Pirandello.

SELECTED TOPICS (var.)

The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.

JOURNALISM

Faculty: Sanderson, program chairman; Griscti, Stalnaker, Yates.

(Four basic courses are offered; students interested in journalism will major in another field.)

BASIC JOURNALISTIC WRITING (5)

JMN 341-342. BASIC JOURNALISTIC WRITING (5)

JMN 341 (2 q.h.) Open to freshmen. Introduction to mass communications; rights and responsibilities of the press; critical analyses of press performance.

JMN 342 (3 q.h.) Pr: CBS 102. Basic news writing, interviewing, use of news sources. Students may enter either quarter first.

ADVANCED JOURNALISTIC WRITING (4)

JMN 343. ADVANCED JOURNALISTIC WRITING (4)

Pr: JMN 342. News and feature writing for newspapers with emphasis on in-depth writing techniques and reportorial coverage of meetings, speeches, police, crime, courts, politics, elections and government. Laboratory experience on The Oracle.

NEWS EDITING (4)

JMN 347. NEWS EDITING (4)

Pr: JMN 342. Evaluating news and display; editing and rewriting news for the mass media; editing techniques; newspaper typography and makeup; ethical problems and communications law. Laboratory experience on The Oracle.

MAGAZINE AND FEATURE WRITING (4)

JMN 349. MAGAZINE AND FEATURE WRITING (4)

Pr: CBS 102. A study of writing and marketing articles for general circulation magazines and feature sections. Preparation of articles for submission to professional publications.

SELECTED TOPICS: PERSUASIVE WRITING (4)

Pr: Sophomore standing. Copywriting; the role and scope of persuasion in our society and in the mass media; principles of advertising.

LANGUAGE-LITERATURE (Interdisciplinary)

Faculty: Bentley, Carr, Deer, Gould, M. Jacob, O'Hara, Stanton.

MAIN CURRENTS OF WESTERN THOUGHT I & II (3,3)

A study of the principal forces that have shaped Western thought since 1500. These include humanism, Protestantism, rationalism, romanticism, communism, and naturalism. Among the authors included in the course are Machiavelli, Swift, Newman, Freud, Dreiser, and Camus. 301: 1500-1720; 302: 1720-present.

THE IDEA OF PROGRESS I (3)

Pr: Sophomore standing. Copywriting; the role and scope of persuasion in our society and in the mass media; principles of advertising.
A study of the ways in which the idea of progress has affected philosophical, social, political and literary theory since the Renaissance to the French revolution. Among the authors considered are: Bacon, Descartes, Pascal, Locke, Condorcet, Malthus, and Adam Smith.

LLI 306. THE IDEA OF PROGRESS II (3)
A study of the relationship between the idea of progress and the growth of modern ideologies. Emphasis will be placed on the development of liberalism, Utopian socialism, social Darwinism, and conservatism by the study of such authors as: Burke, T. Paine, J. S. Mill, R. Owen, T Huxley, G. Orwell, and A. Malraux.

LLI 311. LITERATURE AND THE FILM (3)
A study of what happens when a novel is adapted for the movies; of the insights of modern writers and literary critics into the motion picture as an art form analogous to, yet distinct from, literature and of the impact of literature on film-making.

LLI 312. PHILOSOPHY AND THE FILM (3)
A study of the philosophical implications of the motion picture as an art form: aesthetics in general versus film aesthetics, the connections between the world views of such modern philosophers as Bergson, Whitehead and Bradley and the world view expressed through the motion picture, the connections between "pure ideas," the ideas in the documentary film, and the ideas in the fictional film.

LLI 313. INTRODUCTION TO FILM WRITING (4)
Pr: CBS 102. CI. An introduction to the techniques of writing for the film with special emphasis on adaptations from fiction and examinations of scripts as models and as subjects for critical analysis.

LLI 315. THE IDEA OF FREEDOM (3)
An analysis of the idea of freedom, both in general and in particular. Various philosophical, literary, and journalistic aspects will be analyzed: metaphysical, ethical, political, social, religious and economic.

LLI 383. SELECTED TOPICS (3-5)
Course contents depend on students' need and instructor's interest.

LLI 483. SELECTED TOPICS (2-5)
Pr: CI. Junior standing. Course contents depend on students' need and instructor's interest.

LLI 540. THE SOCIAL STRUCTURE OF LANGUAGE (4)
Pr: SOC 345 or ANT 313 and ENG 517 or ENG 535. An analysis of the interrelation of a language and the structure of the society using it. The linguistic behavior and patterns characteristic of particular social, economic, political, educational, and racial groups. Problems in communication between strata.

LLI 541. PSYCHOLINGUISTICS (4)
Pr: PSY 331, or ANT 313, and ENG 515 or ENG 517. The nature of grammar and its psychological implications; linguistic structures and their correlates in behavior and perception. Problems in verbal learning, verbal conditioning, and word usage. Examination of the hypotheses of Whorf, Chomsky and others.

LLI 583. SELECTED TOPICS (2-5)
Pr: CI. Course contents depend on students' need and instructor's interest.

LINGUISTICS

Faculty: Cole, chairman; O'Hara.

LIN 411-412. DESCRIPTIVE LINGUISTICS (4,4)
Introduction to the IPA and the Harris-Smith-Trager approach to phonemic,
morphemic and syntactic analysis with its application to American English and other analytic languages.

**LIN 483. SELECTED TOPICS (3-5)**  
PR: CI. Course contents depend on students' need and instructor's interest and may range over the whole field of linguistics.

**FOR UPPER LEVEL AND GRADUATE STUDENTS**

**LIN 520. WRITING MODERN GRAMMARS (4)**  
This course will acquaint students with various interesting grammatical features from among a large number of modern languages, teach them how to construct grammars and to describe these and evaluate alternate grammars.

**LIN 530. FIELD METHODS (4)**  
An introduction to the techniques of gathering language data in the field and making a preliminary analysis of such data.

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

**LIN 583. SELECTED TOPICS (3-5)**  
PR: CI. Course contents depend on students' need and instructor's interest and may range over the whole field of linguistics. Study of languages not otherwise offered is possible. Enrollment can be repeated.

**LIN 585. DIRECTED READING (4)**  
Readings in special topics. Arrangement with instructor before registration.

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**MANAGEMENT**

Faculty: A. C. Bartlett, chairman; Allen, Berry, Birkin, Buehl, Dutton, Edwards, Kennerson, Miller, Morell, Rehun, Richardson, Sherman, Walsh, White.

**MGT 301. PRINCIPLES OF MANAGEMENT (5)**  
Organized system of concepts running the gamut from quantitative to behaviorial sciences which provide broad overview of science of management.

**MGT 311. MANAGEMENT SYSTEMS (3)**  
PR: MGT 301, GBA 351, ECN 331. Study of interface between environment and open systems. Analysis and design of computer and noncomputer systems as tools in management planning and control.

**MGT 321. BEHAVIORAL FACTORS IN ORGANIZATIONS (3)**  
PR: MGT 301 or CI. Integrates concepts learned in CBS Behavioral Area (or equivalent) into managerial framework. Includes theories of communication, delegation, discipline, groups, motivation, needs, perception and rules.

**MGT 331. INDUSTRIAL RELATIONS (3)**  
PR: MGT 301 or CI. Impact of unionization on management flexibility in decision making. Emphasis on theories and models that when applied bear upon how best to manage in union organized workplace.

**MGT 341. PERSONNEL MANAGEMENT (3)**  
PR: MGT 301 or CI. Systematic analysis of multitude of functions in personnel: recruiting, selection, job evaluation, performance appraisal, wage and salary, incentives, training & development, etc., utilizing case approach.

**MGT 421. OPERATIONS MANAGEMENT (3)**  
PR: MGT 301, GBA 351, ECN 331 or CI. Develops conceptual framework and principles applicable for any managerial decision process including proper utilization by line of staff expertise. Integrates previous courses into planning & control model.
MGT 431. ORGANIZATION THEORY (3)
PR: MGT 301 or CI. Examines organizations from social systems approach, but retains and intersperses traditional, formal organization theory with recent empirical evidence of Behavioral and Quantitative Sciences.

MGT 451. INTERPERSONAL DYNAMICS LABORATORY (3)
PR: MGT 321 or CI. more structured, content oriented t-group model to provide, through task accomplishment, better awareness of application to modern management theory of concepts and tools from social sciences.

MGT 453. CHANGING ORGANIZATIONS (3)
PR: MGT 321 or CI. Central unifying concept is the Change Agent. Student exposed to total range of theory related to resistance to change and introduction of change including whether locus should be in or out of organization.

MGT 461. LEGAL CONSTRAINTS AND MANAGEMENT DECISION MAKING (3)
PR: MGT 331, GBA 361 or CI. Case analysis of legal constraints on managerial decision-making: FLSA; Workmen’s Compensation; Anti-discrimination laws; Lie Detectors & Psychological Testing; NLRB rulings, court decisions, statutes.

MGT 463. SEMINAR IN MANAGEMENT CONTRACT ADMINISTRATION AND SETTLEMENT (3)
PR: MGT 331 or CI. Case exercises to test application of tools and theories pertaining to I.R. and other management functions involving conflicting interest groups that must integrate or co-exist, interact and cooperate.

MGT 465. LABORATORY IN THE RESOLUTION OF CONFLICT (3)
PR: MGT 321 or CI. In depth exposure to panorama of interdisciplinary theories having relationship to dispute settlement in any context. Controlled laboratory testing of said theories through cases and/or management game.

MGT 471. MANAGEMENT SCIENCE I (3)
PR: MGT 421 or CI. Heavy emphasis upon population of calculus, matrix algebra, boolean algebra, set theory, probability and game theories, and other operations research techniques to management problem analysis.

MGT 472. MANAGEMENT SCIENCE II (3)
PR: MGT 471 or CI. Examination of Linear Programming, dynamic programming, queuing, stochastic inventory models, markov chain analysis for applications to problem analysis and decision making under uncertainty.

MGT 473. QUANTITATIVE METHODS OF OPERATION: PLANNING AND CONTROL (3)
PR: MGT 472 or CI. Review of all conceptual tools, methods and techniques available to modern scientific manager including depth integration of how and why of quantitative decision process at policy level.

MGT 489. GUIDED RESEARCH IN MANAGEMENT (3)
PR: Graduating Quarter or CC. Student engages in integrating field project, or other research, where all of his course work can be utilized. Only most general departmental supervision is exercised: management is by results.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

MGT 501. SURVEY OF MANAGEMENT (3)
An analysis of the theory and practice of management, including a study of the determination of goals and means, the functions of management, decision-making and the administrative process in general.

FOR GRADUATE STUDENTS ONLY

MGT 601. HUMAN RELATIONS IN ORGANIZATIONS (3)
An analytical view of the modern human relations movement with stress of
development since the 1930’s. Incorporates the philosophy of the behavioral sciences and relates it to the management process.

MGT 603. COMMUNICATIONS THEORY IN INDUSTRY (3)
PR: MGT 501 or 501. Investigation of the communication process through analysis of the available literature. Pragmatic business writing, general semantics, readability studies, cybernetic theory, and network analysis will be among the topics covered.

MGT 606. ADVANCED MANAGEMENT SCIENCE (3)
PR: MGT 471 or equivalent. Study of current operations research techniques, including dynamic (non-linear) programming, Markov chain analysis as they apply to problems in the business firm.

MGT 607. SEMINAR IN INDUSTRIAL RELATIONS (3)
An in-depth study and analysis of critical and/or current problems in industrial relations.

MGT 608. SEMINAR IN OPERATIONS ANALYSIS (3)
PR: MGT 606. Analytical study of planning and control with particular stress on operational problems and decision-making. The use of simulation will be treated.

MGT 609. ADVANCED INTERPERSONAL DYNAMICS (3)
PR: MGT 601 or equivalent. The study of personal and interpersonal behavior through experiencing the information via experiments, as well as a study of the relevant literature.

MGT 610. SEMINAR IN QUANTITATIVE METHODS I (3)
PR: MGT 606, 608. Operational analysis of management measurements including: value analysis, cost-benefit analysis, payoff-trees and tables, PERT/CPM, the computer as a tool in managerial decisions. Stresses the functional use of quantitative methodology.

MGT 611. SEMINAR IN ORGANIZATION THEORY (3)
PR: MGT 601. The study of the structure, functions, and dynamics of modern organizations. Stress is given to the contributions of behavioral science to analysis of formal and informal organizations.

MGT 613. SEMINAR IN ORGANIZATIONAL CHANGE (3)
PR: MGT 601, 609, 611. The study of organizational change with special stress on adaptation of the firm, or sub-strata of the firm, to environmental alteration. Intra-firm analysis, and sensitivity training are also covered.

MGT 615. SEMINAR IN ADMINISTRATIVE POLICY (3)
A course designed to present an organized and integrated approach to the managerial decision-making process. This course should be taken in the final quarter of the program.

MGT 699. THESIS (6)

MARKETING

Faculty: D. C. Sleeper, chairman; Carmichael, Futhey, Hadaway, Oescher, Scheinkopf, Stevens, Williams.

MKT 301. BASIC MARKETING (5)
PR: ECN 201-202. Survey of the marketing of goods and services within the economy. The integration of functional, commodity, and institutional approaches from the consumer and managerial viewpoints.

MKT 311. PRINCIPLES OF SALESMAINSHIP AND SALES MANAGEMENT (3)
PR: MKT 301. Personal selling and sales management as basic elements in the
marketing strategy of firms. Includes the scientific management of resources and the dynamics of interpersonal and small group behavior and decision processes.

**MKT 312. PRINCIPLES OF ADVERTISING AND SALES PROMOTION (3)**
PR: MKT 301. A comprehensive coverage of advertising, stressing purposes, techniques, organization, research, and media selection including relationships with other marketing mix components. Consideration given to economic and social aspects of advertising and total promotional strategies.

**MKT 315. MARKETING INSTITUTIONS AND CHANNELS (3)**
PR: MKT 301. A detailed study of marketing channels as a functional area of marketing management responsibility and as a part of marketing strategy. Attention given to wholesaling and retailing and their structural, dynamic interrelationships including distribution logistics.

**MKT 316. MARKETING MODELS AND MARKETING SYSTEMS (3)**
PR: MKT 312, MKT 315, and GBA 351. An investigation of the utility of formal, logical, mathematical, and other quantitative methods and models as these might be applied to marketing management.

**MKT 403. PUBLIC RELATIONS AND THE MARKETING PROCESS (3)**
PR: MKT 312 or CI. Principles, practices, and problems in public relations as an integrated part of and supplement to marketing management responsibilities and decisions.

**MKT 405. INDUSTRIAL MARKETING (3)**
PR: MKT 315. Problems of marketing industrial goods. Characteristics of markets, channels, industrial sales, promotional practices, research and marketing policies.

**MKT 407. MANAGEMENT OF ADVERTISING AND SALES PROMOTION (3)**
PR: MKT 312, MKT 315. Discussion and analysis of cases bearing on managerial aspects of advertising and sales promotion including research, budget determination, strategy, tactics, and evaluation of results.

**MKT 409. INTERNATIONAL MARKETING (3)**
PR: MKT 312, MKT 315, or CI. A study of the procedures and problems associated with establishing marketing operations in foreign countries. The institutions, principles and methods involved in the solution of these business problems will be treated as well as effects of national differences on business practices.

**MKT 411. MARKETING RESEARCH (3)**
PR: MKT 312, MKT 315, ECN 331 or MTH 345; or CI. A study of research methods applicable to problem-solving in the field of marketing.

**MKT 413. CONSUMER BEHAVIOR (3)**
PR: MKT 301 or CI. An investigation and application of the behavioral factors affecting consumer demand. Consideration given to industrial, governmental, and ultimate consumers.

**MKT 414. SEMINAR IN MARKETING AND CONSUMER BEHAVIOR RESEARCH (3)**
PR: MKT 312, MKT 315, MKT 411, MKT 413. In depth discussion, formulation, application, and evaluation of advanced research techniques and practices as currently applied to facilitate marketing decisions.

**MKT 415. MARKETING MANAGEMENT (3)**
PR: MKT 312, MKT 315, MKT 411, MKT 413, and 3 other MKT courses or CI. Management of the marketing function of firms: objectives, planning, organization, controlling of the total marketing effort, and co-ordination with other major functional areas.

**MKT 419. MARKETING PROBLEMS (3)**

**MKT 489. SPECIAL STUDIES IN MARKETING (3)**
PR: MKT 415 or CI. The integration of marketing knowledge in solving specific marketing problems. Selected readings and case analyses.
PR: MKT major and CI. Intensive independent research in marketing under the direction of a major professor; progress and final analysis reported in seminar.
FOR SENIOR LEVEL AND GRADUATE STUDENTS

MKT 501. SURVEY OF MARKETING (3)
PR: ECN 501. A critical analysis of the field of marketing including aspects of marketing policies, institutions, research, and trends. Special emphasis given to product development, pricing strategy, channel selection, and promotion as a basis for marketing management decisions. Assigned readings, discussions, and reports.

FOR GRADUATE STUDENTS ONLY

MKT 601. ADVANCED MARKETING PROBLEMS (3)
PR: MKT 501 or 501, ECN 605. A study of the marketing problems of the firm approached from a management point of view. Emphasis is placed upon the development of the student’s ability to analyze marketing situations, identify problems, determine solutions, implement corrective action, and plan marketing strategy.

MKT 603. SEMINAR IN MARKETING (3)
PR: MKT 301 or 501; ECN 601, 605. The study of contemporary marketing thought, advanced marketing concepts, and recent developments in the field of marketing. Readings, discussions, and individual investigation.

MATHEMATICS

Faculty: Ratti, chairman; Chesley, Cornett, Ghosh, Goodman, Issak, Kelley, Y-F Lin, Manougian, Shannon, Tserpes, Twomey, Welch, Zerla.

MTH 101. FOUNDATIONS OF UNIVERSITY MATHEMATICS (5)
PR: Two years of secondary school algebra, one year of plane geometry. Real numbers and their properties; introduction to analytic trigonometry and geometry.

MTH 211. ELEMENTARY CALCULUS I (4)
PR: Two years of secondary school algebra, one year of plane geometry or CC. Real numbers, exponential, logarithmic and trigonometric functions, rates of change, derivatives. The sequence MTH 211-212-213 is primarily for students from Biological Sciences, Social Sciences and Business. (No credit for math majors or students with credit in MTH 101.)

MTH 212. ELEMENTARY CALCULUS II (4)
PR: MTH 211 or CC. Rules for differentiation, applications of the derivative, definite integral, fundamental theorem of calculus, integration. (No credit for students with credit in MTH 302.)

MTH 213. ELEMENTARY CALCULUS III (4)
PR: MTH 212. Functions of several variables, partial derivatives, introduction to infinite series. (No credit for students with credit in 302.)

MTH 302. CALCULUS I (5)
PR: MTH 101 with a grade of “C” or better or CC. Limits derivatives applications, definite integral.

MTH 303. CALCULUS II (4)
PR: MTH 302 with a grade of “C” or better or CC. Antiderivatives, the definite integral, applications, log, exponential, and trig functions.

MTH 304. CALCULUS III (4)
PR: MTH 303 with a grade of “C” or better or CC. Integration, polar coordinates, conic sections, vectors, indeterminate forms and improper integrals.

MTH 305. CALCULUS IV (4)
PR: MTH 304 with a grade of “C” or better or CC. Vectors in 3-space, partial derivatives, multiple integrals, infinite series.
MTH 309. SET THEORY (3)
PR: MTH 302 or CC. Relations, functions, order, cardinal numbers.

MTH 323. LINEAR ALGEBRA (4)
PR: MTH 302 or CC. Vectors, matrices, systems of linear equations.

MTH 345. INTRODUCTORY STATISTICS I (5)
Hypothesis testing, estimation; normal, Chi-square, t, F, binomial, multinomial, distributions; ANOV, CR, RCB designs; single df, regression, correlation, contingency tables. Students who successfully complete this course may not also receive credit for either ECN 381-431 Business and Economic Statistics or SSI 301 Social Science Statistics.

MTH 346. INTRODUCTORY STATISTICS II (5)
PR: MTH 345 or CC. Factorials, ANCOV; multiple curvilinear regression; response surfaces; Latin square, Split Plots, incomplete blocks designs; distribution free methods.

MTH 401. DIFFERENTIAL EQUATIONS (4)
PR: MTH 305. First order linear and nonlinear differential equations, higher order linear equations, applications.

MTH 405. ADVANCED CALCULUS I (4)
PR: MTH 305 with a grade of "C" or better. Functions of several variables, partial derivatives, implicit-function theorems, transformations, vector fields.

MTH 406. ADVANCED CALCULUS II (4)
PR: MTH 405. Continuation of MTH 405.

MTH 420. ELEMENTARY ABSTRACT ALGEBRA (3)
PR: MTH 302 or CC. Groups, rings, integral domain, fields, integers, the rational, real and complex number systems.

MTH 423. GEOMETRY I (3)
PR: MTH 302. Emphasis on axiomatics, advanced Euclidean geometry, elements of projective geometry, non-Euclidean geometries.

MTH 424. GEOMETRY II (3)
PR: MTH 423. Continuation of MTH 423.

MTH 431. VECTOR ANALYSIS (3)
PR: MTH 305. The algebra and calculus of vectors, applications, general coordinates, introduction to tensor analysis.

MTH 445. INTRODUCTORY PROBABILITY THEORY I (3)
PR: MTH 305 and MTH 309 or CC. Probability spaces, discrete and continuous probability distributions, expectation.

MTH 446. INTRODUCTORY PROBABILITY THEORY II (3)
PR: MTH 445. Joint distributions, sums of random variables, weak and strong laws of large numbers, limit theorems.

MTH 447. NUMERICAL ANALYSIS (4)
PR: MTH 401. Interpolation and quadrature, finite differences, numerical solution of algebraic and transcendental equations, numerical solution of differential equations, computer techniques.

MTH 471. THE SCOPE AND SIGNIFICANCE OF MATHEMATICS (3)
(For non-science majors)
PR: Senior or junior standing. Students having completed MTH 203 are not eligible to enter this course. The development of mathematical thought and its application to the physical world, the social sciences, and the fine arts, emphasizing the importance and meaning of mathematics in contemporary culture.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

MTH 501. ADVANCED DIFFERENTIAL EQUATIONS (4)
PR: MTH 401 or CC. Series solutions of second order linear equations, boundary value problems, existence theorems and Fourier series.
MTH 511. ADVANCED LINEAR ALGEBRA (4)
PR: MTH 309, 323 or CC. Vector spaces, linear independence, dimension, matrices, linear transformations.

MTH 513. REAL ANALYSIS I (4)

MTH 514. REAL ANALYSIS II (4)
PR: MTH 513. Continuation of MTH 513.

MTH 515. CALCULUS ON MANIFOLDS (4)
PR: MTH 511 and 514. Calculus of several variables.

MTH 520. COMPLEX ANALYSIS I (4)
PR: MTH 405. Complex numbers, analytic functions and mappings, integrals.

MTH 521. COMPLEX ANALYSIS II (4)
PR: MTH 520. Power series, residues and poles.

MTH 523. ALGEBRA I (4)
PR: MTH 305 and 309. Semi-groups and groups. Rings and ideals; homomorphisms.

MTH 524. ALGEBRA II (4)
PR: MTH 523. Polynomials rings, integral domains; factorization. Fields and field extensions; reducibility.

MTH 531. TOPOLOGY I (4)

MTH 532. TOPOLOGY II (4)
PR: MTH 531. Continua, homeomorphisms, metric spaces, Moore-Smith convergence.

MTH 541. APPLIED MATHEMATICS I (4)
PR: MTH 401. Technique and applications of series solutions of differential equations, study of Bessel and other special functions important in the physical sciences, eigenvalue problems. Emphasis on applied problems.

MTH 542. APPLIED MATHEMATICS II (4)
PR: MTH 541 or CC. Matrices, determinants and linear systems. Topics from vector analysis and functions of several variables.

MTH 545. STATISTICAL METHODS IN RESEARCH I (4)
Primarily for graduate students with research problems. Distribution of sample statistics estimation, tests of hypotheses.

MTH 546. STATISTICAL METHODS IN RESEARCH II (4)
PR: MTH 545 or CC. Randomized blocks, Latin squares, factorials, regression, correlation, split plots.

MTH 548. INTRODUCTORY THEORETICAL STATISTICS (5)
PR: MTH 305 and either MTH 345 or equivalent. Frequency, sampling, limiting distributions and their moments; theory of point and interval estimation, hypothesis testing, ANOV.

MTH 549. INTRODUCTORY THEORY OF LEAST SQUARES (5)
PR: MTH 305 and either MTH 548 or CC. The general linear hypothesis, least squares for experimental design models, components of variance. Applications.

MTH 571. GEOMETRY FROM AN ADVANCED STANDPOINT (3)
PR: A bachelor's degree or CC. Axiomatic development of geometries, with emphasis on Euclidean geometry, for teachers and others.

MTH 573. SET THEORY AND ALGEBRA FROM AN ADVANCED STAND-POINT (3)
PR: A bachelor's degree or CC. Basic concepts of the language of mathematics, including a study of relations, functions, algebraic structures, for teachers and others.

MTH 583. SELECTED TOPICS (1-6)
PR: Senior or junior standing and CC. Each topic is a course of study. 01-History

FOR GRADUATE STUDENTS ONLY

MTH 614. MODERN ANALYSIS I (4)

MTH 615. MODERN ANALYSIS II (4)
PR: MTH 614. Continuation of MTH 614.

MTH 617. BANACH SPACES AND ALGEBRAS I (4)

MTH 618. BANACH SPACES AND ALGEBRAS II (4)
PR: MTH 617. Continuation of MTH 617.

MTH 624. ABSTRACT ALGEBRA I (4)
PR: CC. Structure theory of fields; ideals and modules.

MTH 625. ABSTRACT ALGEBRA II (4)
PR: MTH 624. Noetherian rings; ideal theory.

MTH 627. HOMOLOGICAL ALGEBRA (3)

MTH 629. LIE GROUPS (3)
PR: MTH 615, 625 or 633 and CC. Topological groups, representation of compact Lie groups, algebraic groups.

MTH 632. ADVANCED TOPOLOGY I (4)
PR: MTH 532 and CC. Continua, Hausdorff metric, decomposition spaces, characterizations of $E^2$, homogeneous spaces

MTH 633. ADVANCED TOPOLOGY II (4)
PR: MTH 632. Continuous curves, function spaces, arewise connected spaces, homotopic and isotopic mappings, uniform spaces

MTH 635. ALGEBRAIC TOPOLOGY (3)
PR: MTH 633 or CC. Homotopy, homology groups, local homology groups.

MTH 636. TOPOLOGICAL ALGEBRA I (4)
PR: MTH 633 and CC. Topological semi-groups, topological groups, topological rings and fields, Haar measure.

MTH 637. TOPOLOGICAL ALGEBRA II (4)
PR: MTH 636. Continuation of MTH 636.

MTH 643. PARTIAL DIFFERENTIAL EQUATIONS I (4)
PR: MTH 401 and CC. Classification of second order equations, Cauchy problem, Dirichlet and Neumann problems, mixed problems, properties of solutions.

MTH 644. PARTIAL DIFFERENTIAL EQUATIONS II (4)
PR: MTH 643. Continuation of MTH 643.

MTH 651. LOGIC AND FOUNDATIONS I (4)
PR: CC. Propositional calculus, Post's theorem, first order and equality calculi, models, completeness and consistency theorems, Godel's theorem, recursive functions.

MTH 652. LOGIC AND FOUNDATIONS II (4)
PR: MTH 651. Continuation of MTH 651.

MTH 681. GRADUATE RESEARCH (1-9)
PR: CC.
MTH 683. SELECTED TOPICS (1-6)
FR: CC: 01-Topology, 02-Analysis, 03-Algebra, 04-Applied Mathematics, 05-Graph Theory, 06-Number Theory.

MTH 691. GRADUATE SEMINAR (1-6)
Direction of this seminar is by a faculty member. Students are required to present research papers from the literature.

MTH 699. THESIS (1-9)
May be taken more than once, but not more than a total of nine hours credit will be allowed.

MUSIC


MUS 112. RUDIMENTS OF MUSIC (3)
Preparatory course for music arts and music education majors who do not qualify for MUS 212. Develops skills in hearing and performing music and in basic notation.

MUS 212-213-214. MUSICAL STYLES (3,3,3)
Required of music arts and music education majors. Aural and visual analysis of musical styles from Antiquity to 1600, stylistic composition for voices, counterpoint, form; includes development of related skills of music reading and keyboard facility.

APPLIED MUSIC

(Courses marked with an asterisk (*) are applied music courses).

Vocal and instrumental instruction for students at all levels of proficiency. Students are auditioned and classified according to technical ability and musical background. Each week the student receives one private lesson devoted to individual technical and musical problems. Students also meet in a class each week, in the pattern of a master class, in order to hear each other perform, and to learn to analyze and discuss technique, interpretation, and style. Courses marked with an asterisk require a $25 applied music fee.

ENSEMBLE REQUIREMENT: All applied vocal and instrumental students who are qualified are required to enroll in a major ensemble. Piano students are required to enroll in MUS 305-006 (Chamber Music Ensemble). May be repeated for credit.

MUS 215. *BEGINNING STRING INSTRUMENTS (1)
Sec 001 Cello; Sec 002 String Bass; Sec 003 Violin-Viola.

MUS 225. *BEGINNING PIANO (1)
Sections 001 and 002 are Level I; Sections 003 and 004 are Level II; Sections 005 and 006 are Proficiency Requirement Level; Sections 007 and 008 are Level IV.

MUS 235. *BEGINNING VOICE (1)

MUS 245. *BEGINNING WOODWIND INSTRUMENTS (1)
Sec 001 Clarinet-Saxophone; Sec 002 Flute; Sec 003 Oboe; Sec 004 Bassoon.

MUS 255. *BEGINNING BRASS INSTRUMENTS (1)
Sec 001 French Horn; Sec 002 Low Brass; Sec 003 Trumpet.

MUS 265. *BEGINNING PERCUSSION INSTRUMENTS (1)

MUS 275. *BEGINNING ORGAN (1)
MUS 301. ISSUES IN MUSIC (2)
Artist Teacher-performers will lecture and perform significant works from the literature for the piano. The aesthetic and abstract elements in music which vitally concern the artist-performer will be analysed and illustrated in performance.

MUS 303. THE ENJOYMENT OF MUSIC (3)
For non-music majors. A study of the art of music and its materials, designed to develop an understanding of basic principles of music and a technique for listening to music. Section 001 is for students who are dance, theatre arts and visual arts majors; Section 002 is for other non-music majors.

MUS 305. CHAMBER MUSIC ENSEMBLE (1)
Open to students with the necessary proficiency in their performance media. Study and performance of literature for small combinations of string, woodwind, brass, or percussion instruments, voice, and piano. May be repeated for credit. Section 001 Chamber Singers; Section 002 Jazz Laboratory Band; Section 003 Brass Choir; Section 004 Brass Quintet; Section 005 Woodwind Quintet; Section 006 Piano Ensemble; Section 007 String Quartet; Section 008 French Horn Quartet; Section 009 Clarinet Choir; Section 010 Percussion Ensemble.

MUS 312-313-314. MUSICAL STYLES (3,3,3)
PR: MUS 214. Required of music arts and music education majors. Continuation of MUS 212-214. Musical styles from 1600 to 1827; includes harmony, instrumentation, form, stylistic composition for various media; continued development of related skills.

MUS 315. *INTERMEDIATE STRING INSTRUMENTS (2)
Sec 001 Cello; Sec 002 String Bass; Sec 003 Violin-Viola.

MUS 325. *INTERMEDIATE PIANO (2)

MUS 335. *INTERMEDIATE VOICE (2)

MUS 345. *INTERMEDIATE WOODWIND INSTRUMENTS (2)
Sec 001 Clarinet-Saxophone; Sec 002 Flute; Sec 003 Oboe; Sec 004 Bassoon.

MUS 355. *INTERMEDIATE BRASS INSTRUMENTS (2)
Sec 001 French Horn; Sec 002 Low Brass; Sec 003 Trumpet.

MUS 365. *INTERMEDIATE PERCUSSION INSTRUMENTS (2)

MUS 375. *INTERMEDIATE ORGAN (2)

MUS 385. UNIVERSITY ORCHESTRA (1)
PR: CI. Study, rehearsal, and performance of major musical works. Membership open to all University students by audition on a credit or non-credit basis. May be repeated for credit.

MUS 387. UNIVERSITY BANDS (1)
PR: CI. Description under MUS 385. Section 001 is Concert Band Ensemble, Section 002 is Reading Band.

MUS 389. UNIVERSITY CHORUSES (1)
PR: CI. Description under MUS 385. Section 001 is Fine Arts Chorale, Section 002 is Reading Chorus, Section 003 is University-Community Chorus.

MUS 391. OPERA WORKSHOP (1)
PR: CI. Description under MUS 385.

MUS 412-413-414. MUSICAL STYLES (2,2,2)

MUS 477. STRING WORKSHOP (2)
PR: CI. To prepare music teachers for inaugurating a string instrumental program. Methods, techniques, and materials for the organization and execution of heterogeneous string classes will be studied, performed, and evaluated.

MUS 481. DIRECTED STUDY (1-6)
PR: CC. Independent studies in the various areas of Music Arts. Course of study and credits must be assigned prior to registration. May be repeated.
FOR SENIOR LEVEL AND GRADUATE STUDENTS

MUS 503. COMPOSITION (3)
PR: CI. Creative writing for various instrumental and vocal media, solo and ensemble. Emphasis on composition in contemporary idioms. Includes class performance, critical discussion of compositions by students and instructor. May be repeated for a maximum of 12 credits.

MUS 507-508. ORCHESTRATION (3,3)
PR: CI. Intensive study and practice in scoring music for the full symphony orchestra and various combinations of instruments including symphonic band and smaller ensembles of woodwind, brass and/or string instruments.

MUS 512-513-514. MUSICAL STYLES (3,3,3)
PR: CI. Creative writing for various instrumental and vocal media, solo and ensemble. Emphasis on composition in contemporary idioms. Includes class performance, critical discussion of compositions by students and instructor. May be repeated for a maximum of 12 credits.

MUS 521. PIANO MASTER CLASS (2)
PR: CI. Study and performance of selected piano literature with special emphasis on style, form and technique. Especially designed for teachers, piano majors, and talented secondary school students. Credit and non-credit students must attend all scheduled class sessions, private lessons, and concerts.

MUS 525. ADVANCED PIANO (2)

MUS 531. VOICE MASTER CLASS (2)
PR: CI. Study and performance of selected voice literature with special emphasis on style, form and technique. Especially designed for teachers, voice majors, and talented secondary school students. Credit and non-credit students must attend all scheduled class sessions, private lessons, and concert.

MUS 535. ADVANCED VOICE (2)

MUS 545. ADVANCED WOODWIND INSTRUMENTS (2)
Sec 001 Clarinet-Saxophone; Sec 002 Flute; Sec 003 Oboe; Sec 004 Bassoon.

MUS 555. ADVANCED BRASS INSTRUMENTS (2)
Sec 001 French Horn; Sec 002 Low Brass; Sec 003 Trumpet.

MUS 565. ADVANCED PERCUSSION INSTRUMENTS (2)

MUS 571. STUDIO TEACHING (3)
PR: CI. Required of advanced instrumentalists or vocalists who plan a career in studio teaching. Emphasis on the organization of materials, literature, and techniques. Section 001 is piano, Section 002 is voice, Section 003 is winds, Section 004 is strings.

MUS 575. ADVANCED ORGAN (2)

MUS 593. ORCHESTRA WORKSHOP (2)
PR: CI. The study, rehearsal, and performance of ensemble literature. Membership open to University students, teachers, and secondary school students. Those eligible may register for credit. Non-credit members receive no grade but are required to participate in all scheduled classes and concerts.

MUS 595. BAND WORKSHOP (2)
PR: CI. Description under MUS 593.

MUS 597. CHORUS WORKSHOP (2)
PR: CI. Description under MUS 593.

FOR GRADUATE STUDENTS ONLY

MUS 601. SYMPHONIC LITERATURE (5)
A chronological study of the development of orchestral music. Works will be analyzed and studied from a stylistic and biographical perspective.
MUS 603. MASTERWORKS OF CHORAL LITERATURE (5)
A chronological study of the development of choral music. Works will be
analyzed and studied from a stylistic and biographical perspective.

MUS 607-608. INSTRUMENTAL CONDUCTING (3,3)
PR: CI. Intensive study of instrumental conducting techniques with emphasis
on interpretation of musical scores and application in laboratory sessions.

MUS 609. COMPOSITION (4)
PR: CI. Original composition in varied forms. Emphasis on analysis and applica-
tion of contemporary techniques and styles. May be repeated for a maximum of
twelve credits.

MUS 611. TWENTIETH CENTURY MUSIC (5)
PR: CI. A study of the compositional techniques of composers from Debussy
to the present. Emphasis on counterpoint, harmonic structure, tonality, atonality,
polytonality, texture, and serial technique.

MUS 612-613-614. CHORAL LITERATURE AND CONDUCTING (6,6,6)
Combination of seminar, classroom, and laboratory type of experiences designed
to provide depth in stylistic study of choral music literature and performance.

GRADUATE APPLIED MUSIC

(Courses marked with an asterisk (*) are applied music courses).
Vocal and instrumental instruction for graduate students only. Performance
majors must qualify by audition to enroll at this level for four credits. Candida-
tes for the master of arts degree may be permitted to enroll for two
credits at a lower level of proficiency in order to study performance tech-
niques on their major instrument or one of secondary importance. Courses
marked with an asterisk require a $25 applied music fee.

MUS 615. *STRING INSTRUMENTS (2-4)
PR: CC. Sec 002, 004 Cello; Sec 102, 104 Bass; Sec 202, 204 Violin-Viola.

MUS 618-619. GRADUATE REVIEW IN MUSICAL STYLES (2,2)
Aural and visual analysis of music from Gregorian chant through contemporary
musical styles. Adapted to the needs of the individual student as determined by
graduate entrance examination in musical styles.

MUS 622-623-624. TEACHING OF MUSIC THEORY (3,3,3)
Comparative study of teaching techniques, procedures, and materials used in
music theory curricula.

MUS 625. *PIANO (2-4)
PR: CC.

MUS 626-627-628. KEYBOARD LITERATURE (3,3,3)
Chronological study of the development of music for the keyboard instruments.
Works will be analyzed and studied from a stylistic and biographical perspective.

MUS 629-630-631. SONG LITERATURE (3,3,3)
Study of solo song literature from the 17th century through the contemporary
with emphasis on German lieder, oratorio, and opera. Works will be studied
with emphasis on performance.

MUS 632-633-634. EVOLUTION OF MUSICAL STYLES (3,3,3)
Required of music theory majors. Study of the development of musical styles
in Western civilization from Antiquity to the present. Includes analysis and
performance of representative works.

MUS 635. *VOICE (2-4)
PR: CC.

MUS 639-640. OPERA LITERATURE (4,4)
A chronological study of the development and performance of opera from 1600
to the present time. Special emphasis will be placed on the technical, stylistic, and performance aspects of opera.

MUS 645. *WOODWIND INSTRUMENTS (2-4)
PR: CC. Sec 002, 004 Clarinet-Saxophone; Sec 102, 104 Flute; Sec 202, 204 Oboe; Sec 302, 304 Bassoon.

MUS 646-647. ACOUSTICS (3,3)
Required of music theory majors. Study of the nature and transmission of sound, the hearing process, tuning, and temperament. Includes principles of electronic sound reproducers and basic concepts of architectural acoustics.

MUS 655. *BRASS INSTRUMENTS (2-4)
PR: CC. Sec 002, 004 French Horn; Sec 102, 104 Low Brass; Sec 202, 204 Trumpet.

MUS 665. *PERCUSSION INSTRUMENTS (2-4)
PR: CC.

MUS 671. STUDIO TEACHING SEMINAR (3)
PR: Graduate standing in applied music and CI. Emphasis on techniques used in teaching the individual student in applied music.

MUS 673. *ORGAN (2-4)
PR: CC.

MUS 681. DIRECTED STUDY (1-9)
PR: CC. Independent graduate studies in the various areas of music arts. Course of study and credits must be assigned prior to registration. May be repeated for credit.

MUS 691. GRADUATE SEMINAR (2)
PR: CC. May be repeated to a maximum of 6 credits.

MUS 698. M. M. RECITAL (3)
PR: CC.

MUS 699. M. M. THESIS (3)
PR: CC. May be repeated to a maximum of 9 credits.

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**OCEANOGRAPHY** (Interdisciplinary)

Faculty: Briggs, chairman; Betz, Bloch, Dawes, DeWitt, Flynn, Friedl, Griffin, Hopkins, Humm, Lawrence, D. Martin, Ross, Simon, Taft, Wagner.

OGY 311. INTRODUCTION TO OCEANOGRAPHY (3)
A survey of modern oceanography and its methods, including the important features of physical, chemical biological, and geological oceanography.

OGY 521. CHEMICAL OCEANOGRAPHY (4)
PR: CHM 213 and CI. The ocean as a chemical system, including composition, physical-chemical aspects, role of nutrients, trace metals, interaction between bottom and overlying water, modern methods of analysis in routine use in oceanography. lec-lab.

OGY 531. GEOLOGICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI. An introduction to the physical, historical sedimentary, and structural geology of the ocean basins and their borders. lec-lab.

OGY 541. PHYSICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI, Phy 225. The world ocean including its morphology, physical properties, currents, waves, tides, heat budget, and related topics. lec-lab.

OGY 551. BIOLOGICAL OCEANOGRAPHY (4)
PR: Graduate standing or CI, BIO 201-203. The study of life in the sea with special reference to distribution, reproduction, adaptation, competition, and populations. lec-lab.
During 4th quarter (1969) at the St. Petersburg Campus of the University, the following marine field courses will be offered: ZOO 519, 523, 533, 546, 547, 614; BOT 543; and OGY 521, 531, 541 (course descriptions are given under Zoology, Botany, Geology, and Oceanography).

**OFFICE ADMINISTRATION**

Faculty: D. C. Sleeper, chairman; C. Vanover, F. Chappel

OAD 141. INTRODUCTORY TYPEWRITING (2)
For students with no previous instruction in typewriting. Basic skills of typewriting for personal use, common types of business letters, manuscripts, reports and tabulated materials.

OAD 142. INTERMEDIATE TYPEWRITING (2)
PR: OAD 141 or equivalent. Development of speed and accuracy; introduces skill-building procedures in production typewriting.

OAD 143. ADVANCED TYPEWRITING (2)
PR: OAD 141, 142 or equivalent. Expands typewriting skills and applications and production of mailable transcripts.

OAD 251. INTRODUCTORY SHORTHAND (4)
Introduction to basic skills and vocabulary in Gregg Shorthand.

OAD 252. INTERMEDIATE SHORTHAND (3)
PR: OAD 251, and 141, 142, or equivalent of each. Review of basic skill and vocabulary and emphasis on dictation speeds.

OAD 253. ADVANCED SHORTHAND AND DICTATION (3)
PR: OAD 252 and 142, 143, or equivalent. Continued development of basic skills and vocabulary and emphasis on dictation speeds.

OAD 351. ADVANCED SHORTHAND TRANSCRIPTION (3)
PR: OAD 253 and 143, or equivalent of each. Increased dictation speed and transcription of mailable business communications.

OAD 353 OFFICE ADMINISTRATION (3)
Function of the business office, including planning for office equipment and supplies, actuating office employees, controlling the work of the office and principles of office organization.

OAD 361. BUSINESS MACHINES (4)
PR: OAD 141 or equivalent. Instruction and practice in the use and functions of calculating and secretarial machines in today’s business office.

OAD 461. SECRETARIAL PROCEDURES (4)
PR: Senior standing. Development of executive secretarial concepts, instruction and practice in various office duties such as records, control, handling mail, arranging itineraries and telephone techniques.

**PHILOSOPHY**

Faculty: Gould, chairman; Carrier, Chen, Miller, Morris (visiting), Truitt.

PHI 111. GREAT PHILOSOPHERS OF THE WESTERN WORLD (2)
Lectures and discussions of the great philosophers since Plato, focusing on particular problems.

PHI 301. PROBLEMS OF PHILOSOPHY (4)
An introduction to the major philosophical problems in methodology, philosophy of science, philosophy of religion, and epistemology as seen in the writings of Plato, Descartes, Berkeley, Hume, James, etc.
PHI 303. LOGIC (5)
Language analysis and classical and modern formal logic, including the logic of classes and propositions, and discussion of philosophical issues.

PHI 304. SCIENTIFIC METHOD (4)
Probability, inductive inference, the hypothetico-deductive method, experimentation, and selected topics in the philosophy of science.

PHI 311. FOUNDATIONS OF PHILOSOPHY (4)
An introduction to the major philosophical problems in ethics, political and social theory, aesthetics, and metaphysics as seen in the writings of Plato, Aristotle, Mill, Sartre, Kant, Kierkegaard, etc.

PHI 321. ETHICS (4)
An examination of the writing of the philosophers: Plato, Aristotle, Kant, Sartre, etc. about moral problems and principles.

PHI 333. ANCIENT AND MEDIEVAL PHILOSOPHY (4)
A survey of philosophy from Thales through the medieval writers.

PHI 334. RENAISSANCE AND MODERN PHILOSOPHY (4)
A survey of philosophy from the Renaissance through Kant.

PHI 335. RECENT PHILOSOPHY (4)
A survey of philosophy from Kant through 19th century philosophy.

PHI 377. SOCIAL PHILOSOPHY (4)
An analysis of rival theories of social order and their philosophical foundations.

PHI 381. DIRECTED STUDY (1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 383. SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 405. CONTEMPORARY PHILOSOPHY (4)
PR: 12 hours or CI. Selected schools of 20th century thought such as idealism, positivism, pragmatism, realism, and existentialism.

PHI 411. PHILOSOPHY OF RELIGION (4)
Analysis of religious experience and activity and examination of principal religious ideas in light of modern philosophy.

PHI 413. AMERICAN PHILOSOPHY (4)
Major traditions in American thought—Puritanism, the Enlightenment, Transcendentalism, Idealism, Pragmatism, and Analytic Philosophy—in relation to American culture.

PHI 415. PLATO AND ARISTOTLE (4)
PR: 8 hours or CI. A study of the two great Greek philosophers. The examination of Plato will include the dialogues Protagoras, Gorgias, Meno, Republic; while the readings in Aristotle will be taken from the Nicomachean Ethics and the Politics.

PHI 425. KANT (4)
PR: 8 hours or CI. Lectures and discussions of Kant’s philosophy, especially The Critique of Pure Reason.

PHI 453. EPISTEMOLOGY (4)
PR: PHI 301. An examination of human knowledge, its scope and limits, and an evaluation of evidence, criteria of truth, the nature of belief, conditions for meaningfulness, theories of perception and a study of memory and sense perception in the four major fields of nature, history, personal experience and the a priori.

PHI 461. ANCIENT AND MEDIEVAL POLITICAL PHILOSOPHY (3)
A survey of political philosophy from 6 B.C. until 1600 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.
PHI 463. MODERN POLITICAL PHILOSOPHY (3)
A survey of political philosophy from 1600 A.D. until 1900 A.D., including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 465. CONTEMPORARY POLITICAL PHILOSOPHY (3)
A survey of political philosophy in the 20th century, including an examination of the ethical, metaphysical, and epistemological bases of these philosophies.

PHI 481. DIRECTED STUDY (1-5)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 483. SELECTED TOPICS (1-5)
PR: CI. Selected topics according to the needs of the senior students. Approval slip from instructor required.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

PHI 507. PHILOSOPHY OF SCIENCE (4)
PR: 8 hours or CI. The nature and functions of science; the logic of scientific method; clarification of such concepts as cause, law, theory, probability, determinism, simplicity, technology.

PHI 509. SYMBOLIC LOGIC (4)
PR: PHI 303 or CI. Mathematical treatment of formal logic, including methods of proof, quantification, the logic of relations, and an introduction to properties of deductive systems.

PHI 511. PHILOSOPHY OF LAW (4)
PR: 8 hours or CI. The nature and function of law, relations between law, morality and metaphysics, logic of legal reasoning, analysis of fundamental concepts and institutions.

PHI 521. CONTEMPORARY CONTROVERSIES IN PHILOSOPHY OF RELIGION (4)
PR: PHI 411 or CI. A survey of contemporary philosophical problems in religion such as demythologizing, falsification, and the meaning and justification of key concepts, e.g. God, immortality, faith, etc.

PHI 522. AESTHETICS (4)
Consideration of the traditional problems of aesthetics from more contemporary perspectives including structural analysis, problems in historical analysis, the sociology of art and the psychology of art.
Students are urged to also take FNA 543 Comparative Arts/Issues in Creativity as an elective. The combination of these two courses is a desirable approach to knowledge.

PHI 531. PHILOSOPHY OF LANGUAGE (4)
PR: 8 hours of philosophy, major in linguistics or CI. An examination of semantic, syntactical and functional theories of language with special attention given to the problems of meaning, linguistic reference, syntactical form and the relation between scientific languages and ordinary linguistic usage.

PHI 543. PHILOSOPHY OF HISTORY (4)
PR: 8 hours of philosophy, major in history or CI. A systematic study of historical theories and of the methods of historical explanation. An examination of classical theories from Vico through Herder, Hegel, Marx down to Spengler and Toynbee, etc.

PHI 571. SEMINAR IN EPISTEMOLOGY I (3)
PR: Major in philosophy or psychology and CI.

PHI 572. SEMINAR IN EPISTEMOLOGY II (3)
PR: Major in philosophy, or social science and CI.
PHI 573. SEMINAR IN METAPHYSICS (3)
PR: Major in philosophy or CI. A consideration of the theory of reality.

PHI 574. SEMINAR IN METAPHYSICS II (3)
PR: Major in philosophy or CI. Cosmology.

PHI 575. SEMINAR IN CONTEMPORARY ETHICS (3)
A study of the central figures and doctrines in Contemporary Ethics.

PHI 581. DIRECTED STUDY (1-3)
PR: CI. Individual study directed by a faculty member. Approval slip from instructor required.

PHI 583. SELECTED TOPICS (1-3)
PR: CI. Selected topics according to the needs of the student. Approval slip from instructor required.

PHI 585. RESEARCH (1-3)
PR: CI. Individual research supervised by a faculty member. Approval slip from instructor required.

PHI 591. SEMINAR IN THE HISTORY OF PHILOSOPHY (3)
A study of one or more of the central figures or movements in the History of Philosophy.

PHYSICAL EDUCATION—Basic


Abbreviations: (C) coeducational; (M) men; (W) women.

PEB 101. FUNCTIONAL PHYSICAL EDUCATION (0)
Prerequisite to all courses except Beginning Swimming. Stresses importance of optimum fitness for daily living and provides experiences directed toward a better understanding of physical activity and its relationship to the individual. Evaluation of physical fitness.

PEB 102-129. TEAM SPORTS, CONDITIONING, DANCE, RECREATION (0)
Fundamental experiences in team and group activities. Physical conditioning and self-expression through team competition, rhythmic activities and recreational skills.

102 BASKETBALL AND VOLLEYBALL (M) (W)
106 FIELD HOCKEY AND TRACK & FIELD (W)
112 SOFTBALL AND VOLLEYBALL (M) (W)
113 SOCCER AND SPEEDBALL (M) (W)
116 SPECIAL CONDITIONING (M) (W)
   Required of those falling below the 25th percentile on motor fitness.
119 FOLK AND SQUARE DANCE (C)
   Recommended for elementary education majors.
122 SOCIAL DANCE (C)
126 BEGINNING RIDING (C)
129 PROFICIENCY (content to be certified by Physical Education Division)

PEB 130-149. AQUATIC SPORTS (0)
Essential aquatic skills and knowledges vital to individual and group survival, safety and recreation.

130 BEGINNING SWIMMING (C)
132 INTERMEDIATE SWIMMING (C)

* Additional fee is required for these courses.
134 ADVANCED SWIMMING (C)
136 LIFE Saving (C)
138 SCUBA DIVING (C)
140 WATER SAFETY INSTRUCTION (C)
142 SYNCHRONIZED SWIMMING (C)
144 CANOEING AND SAILING (C)
149 PROFICIENCY (content to be certified by Physical Education Division)

PEB 150-180. INDIVIDUAL AND DUAL ACTIVITIES (0)
Basic instruction in recreational sports, fundamental sport skills, individual development and acquisition of dance techniques and skills. Development of desirable levels of strength, endurance, agility, balance and poise.

150 ARCHERY (C)
152 BADMINTON (C)
156 BOWLING (C)*
158 FENCING (C)
160 GOLF (C)
164 HANDBALL AND PADDLEBALL (C)
168 TENNIS (C)
169 WRESTLING (M)
170 GYMNASTICS (C)
178 WEIGHT TRAINING (M)
179 PROFICIENCY (content to be certified by Physical Education Division)

PHYSICS
Faculty: Oleson, chairman; Aubel, Bloch, Brooker, Clapp, Deans, Flynn, Forman, Kendall, Kruschwitz, R. Mitchell, Turbeville.

PHY 211-212. GENERAL PHYSICS (3:1)
First quarter of general physics and lab for science students. Must be taken concurrently.

PHY 213-214. GENERAL PHYSICS (3:1)
PR: PHY 211-212. Second quarter of general physics and lab for science students. Must be taken concurrently.

PHY 215-216. GENERAL PHYSICS (3:1)
PR: PHY 211-212. Third quarter of general physics and lab for science students. Must be taken concurrently.

PHY 221-222. GENERAL PHYSICS (3:1)
PR: MTH 203. First quarter of general physics and lab for physics majors and engineering students. Must be taken concurrently.

PHY 223-224. GENERAL PHYSICS (3:1)

PHY 225-226. GENERAL PHYSICS (3:1)
PR: PHY 221-222. CR: MTH 303. Third quarter of general physics and lab for physics majors and engineering students. Must be taken concurrently.

PHY 305. THERMODYNAMICS (3)
PR: MTH 305 and either prerequisite PHY 225 or corequisite PHY 315. Heat, the kinetic theory of gases, the laws of thermodynamics and introduction to statistical mechanics. First quarter of the sequence PHY 305-405.

PHY 307. MECHANICS I (3)
CR: MTH 305 and either prerequisite PHY 225 or corequisite PHY 315. Kinematic and dynamic principles.

* Additional fee is required for these courses.
matics and dynamics of a particle, of a system of particles and of a solid body.
First quarter of the sequence PHY 307-407-507.

PHY 309. ELECTRICITY AND MAGNETISM I (4)
PR: MTH 305, PHY 341. Direct and alternating circuits, thermoelectricity, instrumentation, electrostatics, electrokinesis and laboratory. First quarter of the sequence PHY 309-409-509.

PHY 315. MATHEMATICAL ANALYSIS OF PROBLEMS IN MECHANICS AND ELECTRICITY (3)
PR: One year of non-calculus general physics. CR: MTH 305. A course designed for physics majors and engineering students who have taken a non-calculus, general physics course. Not open to students who take PHY 221 through 226 or equivalent.

PHY 323. MODERN PHYSICS (4)

PHY 331. OPTICS (4)

PHY 341. INTERMEDIATE LABORATORY—GENERAL (1)
CR: Physics course of 300 level or above. Experiments related to various areas of physics.

PHY 371. CONTEMPORARY PHYSICS (3)
PR: Junior standing. A qualitative investigation of physics, emphasizing its influence on life today. (No credit for physics majors.)

PHY 405. KINETIC THEORY AND STATISTICAL MECHANICS (3)
PR: PHY 305. Continuation of the sequence PHY 305-405.

PHY 407. MECHANICS II (3)

PHY 409. ELECTRICITY AND MAGNETISM II (3)

PHY 421. SOLID STATE PHYSICS I (3)

PHY 437. QUANTUM MECHANICS I (3)
PR: PHY 407, MTH 401 or CC. Schrodinger’s equation, one-dimensional potentials, and the hydrogen atom. First quarter of sequence PHY 437-537.

PHY 441. ADVANCED LABORATORY (1)
PR: PHY 341. Experiments related to nuclear physics.

PHY 481. UNDERGRADUATE RESEARCH (1-6)
PR: Senior or advanced junior standing and CC. Individual experimental work under supervision of instructor.

PHY 491. PHYSICS SEMINAR (1)
PR: Senior or advanced junior standing or CC. May be repeated once.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

PHY 501. NUCLEAR PHYSICS (3)
PR: PHY 323 and MTH 401. Stable nuclei and isotopes, radioactivity, nuclear reactions, binding energies, fission and fusion.

PHY 507. MECHANICS III (3)

PHY 509. ELECTRICITY AND MAGNETISM III (3)

PHY 521. SOLID STATE PHYSICS II (3)
PR: PHY 421. Continuation of the sequence PHY 421-521.
PHY 523. ELECTRONICS (4)
PR: PHY 409 and PHY 341. Vacuum and gas-discharge tubes and associated circuits, electron dynamics, thermionic emission, space charge phenomena, electronic circuit analysis and laboratory.

PHY 537. QUANTUM MECHANICS II (3)
PR: PHY 437. Continuation of the sequence PHY 437-537.

PHY 551. MODERN PHYSICS (3)
PR: PHY 215 or 225. Electron dynamics, X-rays, Bohr-Sommerfeld atom and photoelectricity (No credit for physics majors.).

PHY 583. SELECTED TOPICS IN PHYSICS (1-6)
PR: Senior or advanced junior standing and CC. Each topic is a course in directed study under the supervision of a faculty member. The following courses are contemplated: plasma physics, relativity and atomic and molecular structure, theoretical physics.

FOR GRADUATE STUDENTS ONLY

PHY 601. ATOMIC SPECTRA (3)
PR: PHY 437 or CC. Quantitative study of molecular, atomic, and nuclear structure and spectra.

PHY 607. CLASSICAL MECHANICS I (3)
PR: PHY 407 or CC. Review of vectors, tensors, and matrices; dynamics of particles and systems of particles; the equations of Hamilton and Lagrange; fluid mechanics. First quarter of the sequence PHY 607-608-609.

PHY 608. CLASSICAL MECHANICS II (3)
PR: PHY 607 or CC. Continuation of PHY 607-608-609.

PHY 609. CLASSICAL MECHANICS III (3)

PHY 631. ELECTROMAGNETIC THEORY I (3)
PR: PHY 409 or CC. Electrostatics and magnetostatics; potential and boundary value problems; Maxwell’s equations, electromagnetic waves. First quarter of the sequence PHY 631-632-633.

PHY 632. ELECTROMAGNETIC THEORY II (3)
PR: PHY 631 or CC. Continuation of PHY 631-632-633.

PHY 633. ELECTROMAGNETIC THEORY III (3)

PHY 637. QUANTUM MECHANICS III (3)
PR: PHY 437 or CC. The theory of non-relativistic quantum mechanics.

PHY 641. EXPERIMENTAL PHYSICS (1)
PR: Graduate standing. The practice of laboratory techniques.

PHY 681. GRADUATE RESEARCH (1-9)
PR: CC.

PHY 683. SELECTED TOPICS IN PHYSICS (1-6)
PR: CC. Each topic is a course in directed study under the supervision of a faculty member.

PHY 691. GRADUATE SEMINAR (1)
PHY 699. MASTER’S THESIS (1-9)
PR: PHY 641.

POLITICAL SCIENCE

Faculty: M. O’Donnell, chairman; S. Barber; E. Black; F. Horrigan; R. Johnston; J. Jreisat; A. Kelley; D. Knab; R. Nichols; M. Nwanze; J. Snook; W. Young.
POL 199. INTRODUCTION TO POLITICAL SCIENCE (4)
A survey of the basic concepts in government and politics, theories and methods of political science and the American political system as well as materials.

POL 201. AMERICAN NATIONAL GOVERNMENT (4)
Basic principles and procedures of the American governmental system with emphasis on current issues and trends.

POL 203. STATE AND LOCAL GOVERNMENT (4)
Analysis of the structure and function of state and local governments, of the social and political influences that shape them, and of the dynamics of their administrative processes.

POL 311. COMPARATIVE POLITICS (4)
Analysis of political systems using the concepts and methods of comparative politics. Studies of selected countries will be included.

POL 331. INTERNATIONAL RELATIONS (4)
Contemporary international affairs, including analysis of politics among nations; control of national foreign policies, sovereignty, nationalism and diplomacy; technology, public opinion and war in international relations.

POL 333. INTERNATIONAL ORGANIZATION (4)
The problem of achieving peace through existing international structures, both within and outside the United Nations. The background, achievement and organizational problems of these agencies.

POL 341. POLITICAL PARTIES (4)
PR: POL 201 or CI. The development, structure, operation and significance of political parties in the American system of government.

POL 345. PRIVATE GROUPS AND PUBLIC POLICY (4)
Role of non-party groups in the American society and their impact on public policy; growth of interest groups, internal politics, and formation of public policy.

POL 351. INTRODUCTION TO PUBLIC ADMINISTRATION (4)
PR: Upper level standing. An examination of the administrative principles and processes by which public policies are implemented in a democratic society.

POL 410. POLITICAL SYSTEMS OF SOUTHEAST ASIA (4)
PR: Upper Level Standing. Comparative analysis of political systems and practices in Southeast Asian countries with emphasis on the nature of nationalism, political development and revolutionary processes in the region.

POL 411. SOUTHEAST AND SOUTH ASIA IN WORLD POLITICS (4)
Survey of international politics of Southeast and South Asia.

POL 415. MILITARY POWER IN INTERNATIONAL POLITICS (4)
PR: POL 331, Upper Level Standing or CI. A study of the role of military power affecting war and peace in modern international politics. Among the issues covered are, limited war, nuclear deterrence, balance of power, conventional war, guerrilla warfare, disarmament and nuclear proliferation.

POL 421. GOVERNMENT AND POLITICS OF THE FAR EAST (4)
Development of political ideas and institutions in Japan and China with emphasis on 20th century issues.

POL 431-432. CONSTITUTIONAL LAW (4, 4)

POL 441. THE AMERICAN PRESIDENCY (4)
The presidency as an institution of American democracy; constitutional status and powers, administrative responsibilities, legislative and political leadership, decision-making process.

POL 443. POLITICAL BEHAVIOR (4)
PR: Upper level standing and SSI 301 or CI. Economic psychological and social dimensions of political behavior; political participation, leadership and elites; political attitudes; voting behavior and decision-making processes.
POL 445. CONTEMPORARY AMERICAN FOREIGN POLICY (4)
Analysis of the development and scope of United States foreign policy, focusing upon our aims, decision-making, application of policies, and alternatives for specified problem areas in foreign affairs.

POL 453. URBAN GOVERNMENT (4)
An introduction to the theory of urbanism, formal and informal structures that govern urban areas, new patterns and policy emphases of urban government.

POL 454. URBAN POLITICS (4)
PR: Upper level standing, POL 203 or equivalent. An examination of the political processes and systems in urban and suburban communities in America.

POL 455. THE AMERICAN LEGISLATIVE PROCESS (4)
Intensive analysis of the nature of the legislative process in the United States; organization, procedure, leadership, relation with other governmental agencies, group tactics, decision-making process in the formation of policy.

POL 457. PROBLEMS OF PUBLIC FISCAL ADMINISTRATION (4)
PR: POL 351 or CI. Analysis of problems in the growth and development of public budgets with emphasis on principal techniques and theories of fiscal administration.

POL 461. CLASSICAL POLITICAL IDEAS (4)
PR: POL 199 or CI. Basic political ideas from the works of Plato, Aristotle, Cicero, St. Augustine, St. Thomas Aquinas and other leading Greek, Roman, and Medieval-Christian political philosophers.

POL 462. CLASSICAL POLITICAL IDEAS (4)
PR: POL 199 or CI. Basic political ideas from the works of Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham and other leading modern political philosophers.

POL 463. AMERICAN POLITICAL THOUGHT (4)
PR: Upper level standing. American political thought from the Colonial period to the present with emphasis on recent contributions.

POL 481. INDIVIDUAL RESEARCH (1-4)
PR: 3.0 average in Political Science and CC. Investigation of some aspect of political science culminating in the preparation of an original research paper.

POL 491. SENIOR SEMINAR (4)
PR: Senior Standing and completion of all preceding core program in Political Science. Designed to give the student an opportunity to examine and apply various concepts and methods in the field of political science to some integrated problem area. A partial requirement for this course is the successful completion of a comprehensive examination over the core program.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

POL 520. ADMINISTRATION OF URBAN AFFAIRS (4)
An analysis of the role of the administrator at the municipal level stressing the division of functions, policy formation, alternative governmental structures and their effect on administrative processes.

POL 525. PROBLEMS OF PUBLIC PERSONNEL ADMINISTRATION (4)
An analysis of recruitment, testing, training, employee and human relations in the public service.

POL 527. COMPARATIVE PUBLIC ADMINISTRATION (4)
Comparison of certain aspects of public administrative systems of various governments, emphasizing such writers as Siffin, Hadari, Appleby, Hu, Simon and Riggs.

POL 530. LEGAL AND REGULATORY PROCESSES (4)
Systematic study of the political-judicial factors in the regulatory process of administrative agencies.
POL 540. THE CHANGING SOUTH (4)
The study of various phases of political systems in the southern states.

POL 550. METHODOLOGICAL AND CONCEPTUAL PROBLEMS IN COMPARATIVE POLITICS (4)
Examination of problems and concepts in the study of comparative politics, emphasizing theoretical and empirical relations, and relative advantages of different levels and units of comparative analysis.

POL 561. POLITICS OF THE DEVELOPING AREAS (4)
An analysis of the ideologies, governmental structures, and political processes of selected nations of the non-Western world.

POL 571. FIELD WORK (4)
PR: 3.0 average in Political Science and CI. Application of research models now employed in governmental agencies; including developing a structured research proposal, preparing a network program comprising the elements making up the proposal and a research paper. Designed to give the student practical experience in the administrative and political processes.

POL 573. GOVERNMENT AND POLITICS OF CONTEMPORARY AFRICA (4)
PR: POL 311 or CI. Development and growth of emerging African political systems and their relations with each other and with states outside of Africa.

FOR GRADUATE STUDENTS ONLY

POL 600. SCOPE AND METHODS OF POLITICAL SCIENCE (4)
Advanced study of the scope and methodologies of political science, including their applications to different research areas.

POL 620. URBAN POLICY ANALYSIS (4)
Systematic examination of the organizational and administrative characteristics of planning, program development and reporting activities conducted at local levels by various state, regional, and federal agencies.

POL 623. URBAN FINANCIAL ADMINISTRATION (4)
Examination of organizational structure and administrative processes of urban fiscal agencies, sources of revenue, expenditures and indebtedness, and current problems in budgeting.

POL 625. PROBLEMS IN URBAN POLITICS (4)
Analysis in depth of pressure group behavior and its role in municipal policy formulation, including the study of community power approaches advanced by Rossi, Sofen, Kammriner, Martin and others.

POL 627. ADMINISTRATIVE BEHAVIOR AND PUBLIC POLICY FORMATION (4)
Analysis of the formal, informal and societal characteristics of public bureaucracies and their impact on public policy.

POL 640. POLITICAL SOCIALIZATION (4)
Seminar in selected phases of the political socialization process.

POL 643. CONTEMPORARY POLITICAL IDEAS AND BEHAVIOR (4)
Study of certain phases of political philosophy and theories of modern political analysis.

POL 650. SEMINAR IN POLITICAL REVOLUTION AND CHANGE (4)
Analysis of selected contemporary problems relating to political revolution and change.

POL 660. SEMINAR IN DEMOCRATIC GOVERNMENTS AND POLITICS (4)
Research into various phases of democratic governments and their political systems.

POL 661. SEMINAR IN TOTALITARIAN OR DICTATORIAL GOVERNMENTS AND POLITICS (4)
Research into various phases of totalitarian or dictatorial governments and their political systems.
POL 665. SEMINAR IN INTERNATIONAL ORGANIZATIONS AND ADMINISTRATION (4)
Analysis of various phases of international organizations and their administrative systems.

POL 667. SEMINAR IN INTERNATIONAL RELATIONS (4)
Investigation of selected phases of international relations in world politics.

POL 670. SEMINAR IN AMERICAN GOVERNMENT AND POLITICS (4)
Analysis of selected current problems in American government and politics.

POL 675. SEMINAR IN URBAN PROBLEMS (4)
Systematic analysis and evaluation of various problem areas of contemporary urban governments.

POL 677. SEMINAR IN ADMINISTRATIVE PROCESS
Analysis of various administrative processes emphasizing policy formulation/implementation, programming, new concepts of management in a public service environment.

POL 680. INDIVIDUAL RESEARCH (4)
Study in depth of a special problem in political science approved by a thesis committee.

POL 690. MASTER'S THESIS (1, 9)

PSYCHOLOGY

Faculty: Kimmel, chairman; Achenbach, Ball, Barnard, Clement, Dertke, Edwards, Hawkins, Hite, LaBarba, McKitrick, Merin, Mourer, Nelson, Schmidt, Sistrunk, Strong, Toth.

PSY 201. INTRODUCTION TO PSYCHOLOGY (4)
A survey of major topics in psychology (learning, perception, thinking, intelligence, etc.), and an introduction to methods used in psychological investigation.

PSY 213. APPLIED PSYCHOLOGY (4)
PR: CBS 201 or PSY 201. The application of psychological principles and the functions of psychologists in education, government, industry, and clinical practice.

PSY 311. RESEARCH METHODS IN PSYCHOLOGY (4)
PR: PSY 201 and SSI 301. Scientific research methods and their application to psychology. Topics include experimental planning, control procedures, and interpretative principles.

PSY 323. PERCEPTION (4)
PR: PSY 201 and SSI 301. How man perceives his environment. Topics include sensory bases of perception, physical correlates of perceptual phenomena, and the effects of individual and social factors on perception. Primary emphasis on vision and audition. lec-lab.

PSY 325. INDUSTRIAL PSYCHOLOGY (4)
PR: SSI 301. Application of psychological principles to industry. Topics considered: Man-machine systems, development of skills, training, employee attitudes, worker motivation, accident prevention, fatigue and monotony.

PSY 331. SOCIAL PSYCHOLOGY (4)
PR: PSY 201. Behavior of the individual human being as affected by the social and cultural influences of society. lec-lab.

PSY 335. PSYCHOLOGY OF ADJUSTMENT (4)
PR: PSY 201. Genetic, organic and learned factors involved in the processes of personal adjustment; applications of mental health principles to everyday living.

PSY 341. CHILD PSYCHOLOGY (4)
PR: PSY 201 or EDF 305. Developmental and psychosocial aspects of childhood,
including hereditary, maturational, psychological, and social determinants of child behavior.

**PSY 411. EXPERIMENTAL DESIGN AND ANALYSIS (4)**
PR: SSI 301 and PSY 311. Detailed coverage of those research designs and statistical techniques having the greatest utility for research problems in psychology. Emphasis upon topics from analysis of variance.

**PSY 413. INTRODUCTION TO PSYCHOLOGICAL TESTING (4)**
PR: SSI 301. A consideration of the instruments for intellectual, achievement, and personality assessment including their applications, development, and potential abuses. Students may not receive credit for both PSY 413 and EDF 303 Introduction to Measurement and Evaluation.

**PSY 431. ABNORMAL PSYCHOLOGY (4)**
PR: PSY 433 or 335. A study of the classifications of variant behavior and some of the hypotheses used to explain such behavior.

**PSY 433. PERSONALITY (4)**
PR: 8 hours in PSY courses. Methods and findings of personality theories and an evaluation of constitutional, biosocial, and psychological determinants of personality. lec-lab.

**PSY 481. INDIVIDUAL RESEARCH (1-4)**
PR: Upper division standing and CI. The student plans and conducts an individual research project under the supervision of a staff member. May be repeated with a maximum of eight hours credit.

**PSY 485. DIRECTED READING (1-4)**
PR: Upper division standing and CI. A reading program of topics in psychology is conducted with the supervision of a psychology staff member. May be repeated with a maximum of eight hours credit.

**PSY 491. SENIOR SEMINAR IN PSYCHOLOGY (4)**
PR: Senior standing and completion of the core program in psychology. Designed to give the advanced undergraduate student an opportunity to integrate concepts within the field of psychology and relate these to other areas of study.

**FOR SENIOR LEVEL AND GRADUATE STUDENTS**

**PSY 501. PHYSIOLOGICAL PSYCHOLOGY (4)**
PR: PSY 311 or CI. Gross neural and physiological components of behavior. Structure and function of the central nervous system as related to emotion, motivation, learning, and theory of brain functions. lec-lab.

**PSY 503. HISTORY AND SYSTEMS OF PSYCHOLOGY (4)**
PR: PSY 311 plus three other upper level PSY courses. The historical roots of modern psychological theories, investigation of the various schools of psychology such as behaviorism, Gestalt psychology, psychoanalysis, and phenomenological psychology.

**PSY 505. CONDITIONING AND INSTRUMENTAL LEARNING (4)**
PR: PSY 311. Survey of methods, empirical findings and theoretical interpretations in conditioning and instrumental learning. lec-lab.

**PSY 506. VERBAL LEARNING AND INFORMATION PROCESSING (4)**
PR: PSY 311. Survey of methods, empirical findings and theoretical interpretations of verbal learning and retention, concept learning and information processing. lec-lab.

**PSY 507. SENSORY PHYSIOLOGICAL PSYCHOLOGY (4)**
PR: PSY 201. The structure and function of the sensory systems and attendant peripheral nervous system with regard to their determination of the behavioral capacity of organisms.

**PSY 508. AUDITION (4)**
PR: CI. Theories of hearing. Theoretical principles and developments relating to hearing and its disorders.
PSY 509. COMPARATIVE PSYCHOLOGY (4)
PR: PSY 201. The study of the evolution of behavior, similarities and differences in capacities for environmental adjustment and for behavioral organization among the important types of living beings, from plants and unicellular organisms to the primates including man.

PSY 523. ADVANCED INDUSTRIAL PSYCHOLOGY I (4)
PR: PSY 325 or CI. Application of psychological principles, research, and research methods to the problem of business and industry; work methods, fatigue, job analysis, selection and training, performance measurement.

PSY 524. ADVANCED INDUSTRIAL PSYCHOLOGY II (4)
PR: PSY 523 or CI. Application of psychological principles, research, and research methods to the problem of business and industry: leadership, motivation and morale, communication, job environment, interviewing.

FOR GRADUATE STUDENTS ONLY

PSY 601, 602. RESEARCH METHODS I & II (5, 5)
Two-quarter sequence designed to cover research methods and strategies and their application to psychology. Topics include theory of measurement, design and analysis of experiments, inference.

PSY 603. PERCEPTION (5)

PSY 605. PERSONALITY THEORY (5)
Review of the development of personality theories and consideration in depth of Freudian psychology and other personality theories influencing modern psychological thought.

PSY 606. ADVANCED SOCIAL PSYCHOLOGY (5)
PR: CI. Review and evaluation of the content and theory of social psychology, emphasizing the integration of diverse content within the major theoretical systems.

PSY 608. EXPERIMENTAL SOCIAL PSYCHOLOGY (5)
PR: CI. Analysis and laboratory experience in research methods of social psychology, with particular consideration of attitude measurement, systematic observational methods, sociometrics, stimulation of social behavior, interviewing, and content analysis. lec-lab.

PSY 609. MOTIVATION AND EMOTION (5)
A detailed examination of human motivation and emotion from both the physiological and psychological viewpoints. Emphasis will be given to current research.

PSY 610. OPERANT BEHAVIOR (5)
PR: CI. Review of the basic literature of operant conditioning and major areas of research and application. Supervised laboratory experience in programming basic schedules of reinforcement.

PSY 611. PSYCHOPATHOLOGY (5)
Exploration of current approaches to the understanding of pathological behavior and implications for theories of personality. A survey of treatment methods is included.

PSY 613. BEHAVIORAL DISORDERS OF CHILDREN (5)
Causative factors in behavior deviations common to children and adolescents. Thorou ... techniques for treating childhood behavior difficulties. Students may not receive credit for both PSY 613 and EDS 513 Behavior Disorders in the Schools.

PSY 615. PERSONALITY ASSESSMENT (5)
PR: PSY 617. Interview, case history, objective and projective tests are surveyed.
together with a critical review of the history and theory of assessment. Special consideration is given to study of interrelations between research, diagnostic data, and personality theory.

**PSY 617. INDIVIDUAL INTELLIGENCE TESTING** (5)
History and objectives of intelligence testing. Methods used in the construction of individual intelligence tests. Intensive experience in the administration and interpretation of the Wechsler tests, Stanford-Binet, and Grace Arthur tests. Students may not receive credit for both PSY 617 and EDF 617 Measurement Individual Intelligence.

**PSY 619. INTRODUCTION TO COUNSELING AND PSYCHOTHERAPY** (5)
Examination of theory and practices in counseling and psychotherapy. The role of the counselor and the nature of the therapeutic relationship is emphasized. Professional and ethical issues are considered.

**PSY 620. SUPERVISED RESEARCH** (1-5)
Consent of instructor and department chairman. May be repeated for credit. The student works in close collaboration with a faculty member in designing, conducting and interpreting experiments.

**PSY 650. ELECTROPHYSIOLOGICAL METHODS** (5)
PR: PSY 501 or 507. Introduction to the use of electrophysiological methods in psychological research. This will involve actual experience in use of oscilloscopes, polygraphs, EEG techniques, stereotaxic procedure, stimulation and lesioning techniques, use of microtome, and staining and mounting of tissue sections. lec-lab.

**PSY 682. PRACTICUM IN PSYCHOLOGY** (5)
Supervised observation and training in various community and university clinic, research and/or industrial settings.

**PSY 689. GRADUATE SEMINAR IN LEARNING** (5)
May be repeated for credit.

**PSY 690. GRADUATE SEMINAR IN PERCEPTION** (5)
May be repeated for credit.

**PSY 691. GRADUATE SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY** (5)
May be repeated for credit.

**PSY 692. GRADUATE SEMINAR IN SOCIAL PSYCHOLOGY** (5)
May be repeated for credit.

**PSY 693. GRADUATE SEMINAR ON ISSUES IN CLINICAL PSYCHOLOGY** (5)
May be repeated for credit.

**PSY 694. GRADUATE SEMINAR IN DEVELOPMENTAL PSYCHOLOGY** (5)
May be repeated for credit.

**PSY 695. GRADUATE SEMINAR IN PERSONALITY** (5)
May be repeated for credit.

**PSY 696. GRADUATE SEMINAR IN COGNITIVE PROCESSES** (5)
May be repeated for credit.

**PSY 697. GRADUATE SEMINAR IN QUANTITATIVE METHODS** (5)
May be repeated for credit.

**PSY 698. GRADUATE SEMINAR IN INDUSTRIAL PSYCHOLOGY** (5)
May be repeated for credit.

**PSY 699. THESIS**
A study in depth of a problem in psychology approved by a thesis committee. Student stands an oral examination on the thesis.

**RELIGIOUS STUDIES**

Faculty: Deer, acting chairman; Gessman, Gould, Smith.

**REL 310. OLD TESTAMENT STUDIES** (4)
An introduction to the critical study of the Old Testament against the backgrounds
of the ancient Near East, emphasizing the history and religion of the Hebrew people.

REL 315. NEW TESTAMENT STUDIES (4)
An introduction to the critical study of the New Testament in the context of the first century A.D. Stress is placed upon the Gospel accounts of the life and teachings of Jesus, Paul’s interpretations of faith and problems faced by the early Christian movement.

REL 325. HISTORY OF JUDAISM (4)
The historical development of Judaism and its ideas from Biblical time to the 20th century with emphasis on its formative years from the Great Prophets to the close of the Talmud.

REL 327. HISTORY OF CHRISTIANITY (4)
The historical development of Christianity, its ideas and institutions, from New Testament time to the present.

REL 350. WORLD RELIGIONS (5)
An introduction to the ideas and institutions of some of the major religions of the world, such as Hinduism, Janaism, Buddhism, Islam, Confucianism, Taoism, and Shinto.

REL 383. SELECTED TOPICS (credits vary)
PR: CI. Course contents depend on students’ need and instructor’s interest.

REL 385. DIRECTED READINGS (credits vary)
PR: CI. Individual guidance in concentrated reading on a selected topic.

REL 481. UNDERGRADUATE RESEARCH (credits vary)
PR: Junior standing and CI. Individual investigations and faculty supervision.

REL 483. SELECTED TOPICS (credits vary)
PR: Junior standing and CI. Course contents depend on students’ need and instructor’s interest.

REL 583. SELECTED TOPICS (2-5)
PR: Senior standing and CI. Course contents depend on students’ need and instructor’s interest.

ROMANCE LANGUAGES

Faculty: Milani, Neugaard.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ROM 517. ROMANCE PHILOLOGY (3)
The phonological-lexical development of the Romance languages from Vulgar Latin to modern times, with special emphasis on French, Italian and Spanish.

ROM 518. ROMANCE PHILOLOGY (3)
PR: ROM 517. The morphological-syntactical changes of the Romance languages, with special attention to French, Italian and Spanish.

ROM 583. SELECTED TOPICS (2-5)
PR: Senior standing and CI. Course contents depend on students’ need and instructor’s interest.

RUSSIAN

Faculty: Artzybushev, Sokolsky, Suchovy.

Basic courses listed under Basic Studies.

RUS 221. SCIENTIFIC RUSSIAN (4)
Primarily for students majoring in science or those desiring help in learning to read texts and research material in a specialized field.
RUS 301. ADVANCED COMPOSITION (4)
To improve the student’s ability in reading and writing Russian; practice in free and fixed composition.

RUS 303. ADVANCED CONVERSATION AND PRONUNCIATION (4)
To develop fluency and correctness in spoken Russian.

RUS 305. SURVEY OF RUSSIAN LITERATURE (3)
Development of Russian literature from the Eleventh century to the Eighteenth century.

RUS 306. SURVEY OF RUSSIAN LITERATURE (3)
From the Eighteenth century to N. V. Gogol.

RUS 307. SURVEY OF RUSSIAN LITERATURE (3)
From N. V. Gogol to present.

RUS 383. SELECTED TOPICS (varied)
Course content depends upon student demand and instructor’s interest.

RUS 483. SELECTED TOPICS (varied)
PR: CI. Junior standing. Course content depends upon student demand and instructor’s interest.

RUS 491. SENIOR SEMINAR (3)
Study in depth of a specific writer or literary movement as chosen by the instructor. Individual research required of students.

FOR SENIOR LEVEL AND GRADUATE STUDENTS
PR: Rus 305, 306, 307

RUS 515. HISTORY OF THE RUSSIAN LANGUAGE (3)
Changes in Russian morphology, syntax, phonetics and style.

RUS 516. HISTORY OF THE RUSSIAN LANGUAGE (3)
PR: RUS 515. Continuation of RUS 515.

RUS 541. RUSSIAN DRAMA OF THE 19TH CENTURY (3)
Griboyedov, Pushkin, Ostrovsky, Tolstoy, Turgenev and Chekhov.

RUS 542. RUSSIAN POETRY OF THE 19TH AND 20TH CENTURY (3)
Classical Russian poetry of the 19th century and new poetic movements of the 20th century (symbolism, acmeism, futurism).

RUS 551. RUSSIAN NOVEL OF THE 19TH CENTURY (3)
Study of the works of Gogol, Turgenev and Goncharov.

RUS 552. RUSSIAN NOVEL OF THE 19TH CENTURY (3)
Life and works of Leo N. Tolstoy.

RUS 553. RUSSIAN NOVEL OF THE 19TH CENTURY (3)
Life and major novels of F. M. Dostoyevsky.

RUS 561. RUSSIAN LITERATURE 1880-1917 (3)
Lectures, reading and analysis of the works of A. P. Chekhov and Maxim Gorky.

RUS 562. RUSSIAN LITERATURE 1880-1917 (3)
Lectures, reading and analysis of the works of A. I. Kuprin, L. N. Andreyev, D. S. Merezhkovsky and I. A. Bunin.

RUS 563. RUSSIAN SOVIET LITERATURE (3)
Revolutionary and post-revolutionary Soviet literature including V. V. Mayankovsky, A. N. Tolstoy, A. Serafimovich, A. A. Fadeev, N. A. Ostrovsky and L. M. Leonov.

RUS 564. RUSSIAN SOVIET LITERATURE (3)
Literary works of M. M. Zoschenko, M. A. Sholokhov, B. L. Pasternak, A. Solzhenitsyn and others.

RUS 583. SELECTED TOPICS (var.)
The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.
SOCIAL SCIENCES (Interdisciplinary)


SSI 301. SOCIAL SCIENCE STATISTICS (4)
Topics selected from the following: measures of central tendency and variability probability and the normal curve, correlations, curve fitting, scale and index number theory, polling, interview and survey techniques, content analysis. Students who successfully complete this course may not also receive credit for either ECN 331 Business and Economic Statistics or MTH 345 Introductory Statistics.

SSI 311. COMMUNICATION (4)
The theories, modes and processes of communication, its history as an instrument of social change and its role in human behavior.

SSI 315. PUBLIC OPINION AND PRESSURE MECHANISM (4)
The content and formation of public opinion, properties of opinions and attitudes, and the principles and mechanisms of their formation and change.

SSI 321. HUMAN RELATIONS AND PRODUCTIVITY (4)
Topics to be selected from the following: the relation of science, technology, resources, energy and population change to social, economic, cultural and political change; social implications of research findings from the social, behavioral and management sciences.

SSI 325. PSYCHOLOGY AND THE SOCIAL ORDER (4)
Topics to be selected from the following: the quest for personal identity in modern mass society, the problems of mass culture and mass education, the problems of alienation and anomie in the 20th century, psychological factors in political and industrial conflict, man versus the machine in modern life.

AREA STUDIES

The following four courses (SSI 341, 343, 345 and 347), dealing with one or more countries of a given region, will select and emphasize subject matter from the following topics: its history, its people and their cultures, its social psychology and national characteristics, its resources, its economic and industrial characteristics, its literature, religion and dominant values, its political framework and outlook, its social structure, and its current problems.

Each course may be repeated once when countries of concentration vary, but the same country may not be repeated for credit.

SSI 341. LATIN AMERICA (4)
SSI 343. ASIA (4)
SSI 345. AFRICA (4)
SSI 347. THE MIDDLE EAST (4)
SSI 361. COMMUNISM IN THE MODERN WORLD (4)
An interdisciplinary approach to the nature of Communism, its philosophic bases, its anti-religious bias, its economic, social and political theories and practices, the arts and sciences under Communist ideology, its conduct of foreign affairs and associated programs and techniques. Emphasis will be on Soviet and Chinese Communism.

SSI 411. SOCIAL ISSUES OF OUR TIME (4)
Topics to be selected from the following: automation and cybernation and the social problems they generate; special problems of a technological civilization; the implications of changing social patterns of Western culture and opportunities for social re-construction.
SSI 413. LEISURE IN SOCIETY (4)
Facts and trends of changing leisure-time patterns in the USA and other countries; various conceptualizations of leisure; relationships of non-work time to work attitudes, personality, family, community, sub-cultures, religion, value systems, social class, and the functions of government.

SSI 415. COMMUNITY PLANNING (4)
Topics to be selected from the following: varied concepts of community; enviromental, social, psychological, economic and medical problems accompanying large-scale urbanization; objectives, methods and technologies for community planning.

SSI 449. THE EMERGING NATIONS (4)
This course examines the processes and problems involved when an under-developed country seeks to develop a modern industrial civilization.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

SSI 503. CONTEMPORARY AMERICAN CULTURE (4)
A social analysis of the leading characteristics, ideals, and values of American life. An effort will be made to deal with a variety of contexts in which American cultural themes, standards and practices receive expression.

SSI 505. SOCIAL VALUES AND SOCIAL ORDER (4)
Topics to be selected from the following: the value-patterns of modern societies; social bases for a world order; the aims and functions of social planning; international transformation created by science and technology.

FOR GRADUATE STUDENTS ONLY

SSI 601. SOCIAL PATHOLOGY (4)
An examination of the variety of social criticism which has been leveled at Western society and of some of the defenses which have been made in its behalf. Materials will be chosen from several of the social sciences.

SOCIOLOGY


SOC 201. INTRODUCTION TO SOCIOLOGY (4)
Nature and application of sociological concepts, theories and methods; analysis of societies, associations and groups; social processes and social change.

SOC 251. MARRIAGE (4)
Study of pre-marital and marital relations. Social, cultural and personal factors related to success and failure in mate selection and marriage.

SOC 261. SOCIAL PROBLEMS (4)
Descriptive and analytical consideration of major social problems in modern industrial societies, with emphasis on American society.

SOC 301. INTRODUCTION TO SOCIAL WELFARE (4)
PR: SOC 201 or CI. The historical and contemporary development of organized social services and institutions to meet human needs.

SOC 321. SOCIAL INVESTIGATION (4)
PR: SOC 201, SSI 301. Methods and techniques of social research. Design of sociological studies, collection of data, and interpretation of results.

SOC 331. SOCIAL PSYCHOLOGY (4)
PR: PSY 201 or SOC 201. Behavior of the individual human being as affected by social and cultural influences of modern society.
SOC 341. SOCIAL ORGANIZATION (4)
PR: SOC 201 or CI. Social organization in the broadest sense, including institutions and associations, as well as variations in role and status.

SOC 345. SOCIAL STRATIFICATION (4)
PR: SOC 201 or CI. Social status and social stratification, social class as a factor in behavior, social mobility.

SOC 351. THE FAMILY (4)
PR: SOC 201 or CI. Principles of family organization, social adjustment and control. Maturation, socialization and stability of the family.

SOC 371. RACIAL AND ETHNIC RELATIONS (4)
PR: SOC 201 or CI. Comparative study of interracial relations, social tensions, attitudes, and modes of adjustment in various areas of the world.

SOC 373. SOCIOLOGY OF RELIGION (4)
PR: SOC 201 or CI. Religious behavior of individuals and groups in relation to other aspects of personality and culture.

SOC 481. INDIVIDUAL RESEARCH (1-4)
PR: Four courses in sociology, including SOC 321, upper division standing or CI. Content and method dependent upon interests and competence of the student.

SOC 491. SENIOR SEMINAR (4)
For seniors majoring in sociology or other social sciences. Major issues in sociology, stressing theory and research.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

SOC 505. COMMUNITY WELFARE RESOURCES (4)
PR: SOC 301 or CI; upper division standing. Emphasis upon voluntary programs and their development, planning and coordination.

SOC 515. FOUNDATIONS OF THEORY (4)
PR: SOC 201 or CI; upper division standing. Consideration of selected theories of sociology and procedures of systematic theory construction.

SOC 531. SOCIAL INTERACTION (4)
PR: SOC 331, or PSY 331, or CI; upper division standing. Theory and research, including interpersonal influence, complex behavior, role, conflict, and social situational factors.

SOC 533. COLLECTIVE BEHAVIOR (4)
PR: SOC 201 or CI; upper division standing. Study of the development of group and mass behavior—crowds, social movements.

SOC 535. SOCIOLOGY OF SMALL GROUPS (4)
PR: SOC 201 or CI; upper division standing. Theory of small group structure, mechanics of interaction, observation of small groups.

SOC 541. SOCIAL CHANGE (4)
PR: SOC 201 or CI; upper division standing. Major theories of social and cultural change, and mechanisms of change in various societies.

SOC 543. URBAN SOCIOLOGY (4)
PR: SOC 201 or CI; upper division standing. The social structure of the community in modern industrial societies. Analysis of selected aspects of community change.

SOC 553. SOCIOLOGY OF THE ARTS (4)
PR: SOC 201 or CI; upper division standing. The creation distribution and use of arts from a sociological perspective; the social roles involved.

SOC 561. CRIMINOLOGY (4)
PR: SOC 201 or CI; upper division standing. Etiology of criminal behavior; law enforcement, crime in the United States; penology and prevention.
SOC 563. JUVENILE DELINQUENCY (4)  
PR: SOC 201 or CI; upper division standing. Theories of delinquency as a social product, individual factors, patterns of delinquent behavior, methods of control and treatment.

SOC 571. POPULATION (4)  
PR: SOC 201 or CI; upper division standing. Sociological determinants of fertility, mortality, and migration; theories of population change.

SOC 575. INDUSTRIAL SOCIOLOGY (4)  
PR: SOC 201 or CI; upper division standing. Interaction, communication and authority in economic organizations; the factory as a social system.

FOR GRADUATE STUDENTS ONLY

SOC 611. CONTEMPORARY SOCIOLOGICAL THEORY (4)  
PR: Undergraduate course in sociological theory or CI. Emphasizes logical and conceptual dimensions of theory and theory construction.

SOC 621. METHODS OF RESEARCH (4)  
PR: Course in Social Investigation or CI. Logic and practice of research; problems of observation and data collection, data processing, and evaluation.

SOC 623. SOCIOLOGICAL STATISTICS (5)  
PR: SSI 301 or CI. Logic and application of parametric and nonparametric statistical analysis for sociological data.

SOC 631. SOCIAL PSYCHOLOGY SEMINAR (4)  
PR: Course in Social Psychology or CI. Stresses contemporary developments in social psychological theory and empirical research.

SOC 641. COMMUNITY ANALYSIS (4)  
PR: Course in Urban Sociology or CI. Theories of community and community organization. Methods of community study; problems of urban areas.

SOC 643. COMPLEX ORGANIZATIONS (4)  
PR: Course in Social Organization or CI. Organizational theory, bureaucratic models, authority, power, legitimation, and types of formal organization.

SOC 651. FAMILY ANALYSIS (4)  
PR: Course in Family or CI. Theory of interpersonal relations and interaction in the modern family. Analysis of functions and roles.

SOC 661. SOCIAL CONTROL (4)  
PR: Course in criminology or juvenile delinquency or CI. Theories of control and deviance with research application in problem areas.

SOC 671. SOCIAL GERONTOLOGY (4)  
PR: Four courses in social sciences with two in sociology, or CI. Theory of aging. Social correlates of aging, retirement, and personality modification.

SOC 681. INDIVIDUAL RESEARCH (1-4)  
PR: CI. Content and method dependent upon interest and competence of student.

SOC 691. THESIS AND THESIS SEMINAR (5)  
PR: Degree candidate. Equivalent of 16 quarter hours in the student’s graduate program, SOC 623, 621.

SOC 692. THESIS AND THESIS SEMINAR (5)  
PR: Degree candidate. Equivalent of 16 quarter hours in the student’s graduate program, SOC 623, 621. May be taken concurrently with SOC 691.

SPANISH

Faculty: Hunter, McLean, Milani, Neugaard, Payas, Sparks, Tatum.
Basic course listed under Basic Studies.
History of Romance Languages listed under Romance Languages.
SPA 301. ADVANCED SPANISH COMPOSITION (4)
To improve student's ability in writing Spanish, to increase his accuracy in
comprehension and use of the grammatical elements; practice in both free and
fixed composition.

SPA 303. ADVANCED SPANISH CONVERSATION (4)
To develop fluency and correctness in spoken Spanish for non-native speakers.

SPA 305. SURVEY OF SPANISH LITERATURE (3)
Spanish literature from the Twelfth Century through the Sixteenth Century.

SPA 306. SURVEY OF SPANISH LITERATURE (3)
Spanish literature of the Seventeenth and Eighteenth Centuries.

SPA 307. SURVEY OF SPANISH LITERATURE (3)
Spanish literature of the Nineteenth and Twentieth Centuries.

SPA 310. HIGHLIGHTS OF HISPANIC LITERATURE IN TRANSLATION
A study in English of the most outstanding literary works of Spain and Spanish
America. Elective for students in all departments (except Spanish majors).

SPA 383. SELECTED TOPICS (varied)
Course content depends upon student demand and instructor's interest.

SPA 403. SPANISH PHONETICS & DICTION (2)
Spanish phonology with emphasis on phonic groupings; correction of the in
dividual student's errors in diction.

SPA 483. SELECTED TOPICS. (varied)
PR: Cl. Junior standing. Course content depends upon student demand and
instructor's interest.

SPA 491. SENIOR SEMINAR (3)
Study in depth of a specific writer or literary movement as chosen by the
instructor. Individual research required of students.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

Prerequisite: SPA 305, 306, 307

SPA 516. STYLISTICS (3)
A study of syntax, grammar and stylistic devices of the Spanish language based on
analysis of literary style.

SPA 523. GOLDEN AGE LITERATURE (3)
Lope de Vega and his contemporaries.

SPA 524. GOLDEN AGE LITERATURE (3)
Dramatists of the latter part of the Golden Age.

SPA 525. GOLDEN AGE LITERATURE (3)
Lyric poetry, the mystics, the picaros the and their novel of the Golden Age.

SPA 526. CERVANTES (3)
A study of the life and works of Cervantes, with special emphasis on the
Quijote

SPA 540. SPANISH ROMANTICISM (3)
A study of Spanish drama and poetry of the first part of the Nineteenth
Century.

SPA 541. REALISTIC DRAMA AND POETRY OF THE NINETEENTH
CENTURY (3)
a study of the drama and poetry of the latter part of the Nineteenth Century.

SPA 542. NINETEENTH CENTURY LITERATURE (3)
Costumbrismo and the early Realists: Alarcon, Valera and Pereda.

SPA 543. NINETEENTH CENTURY LITERATURE (3)
The later Realists: Galdos, Palacio Valdes and Naturalism.

SPA 546. GENERATION OF 1898 (3)
Novel of Generation of 1898.
SPA 551. MODERN SPANISH POETRY (3)
A study of Spanish verse of the Twentieth Century from the Generation of 1898 to the present.

SPA 552. TWENTIETH CENTURY SPANISH LITERATURE (3)
Prose since the Generation of 1898.

SPA 561. SURVEY OF SPANISH-AMERICAN LITERATURE (3)
Modern Spanish-American poetry. Main currents of poetry since the Romantic period with brief introduction to the major poets of the Colonial period.

SPA 562. SURVEY OF SPANISH-AMERICAN LITERATURE (3)
Modern Spanish-American novel. Main currents of the novel since the Independence period, with brief discussion of origins of the novel in Spanish America.

SPA 563. SURVEY OF SPANISH-AMERICAN LITERATURE (3)
Modern Spanish-American short story. Main currents of the short story of the last 100 years, with brief discussion of the origins of the genre in Spanish America.

SPA 583. SELECTED TOPICS IN HISPANIC STUDIES (varied)
The content of the course will be governed by student demand and instructor interest. It will examine in depth a recurring literary theme or the work of a small group of writers.

FOR GRADUATE STUDENTS ONLY

SPA 601. OLD SPANISH (3)
An analysis of the development of Spanish from Vulgar Latin to the Renaissance.

SPA 602. MEDIEVAL SPANISH LITERATURE (3)
PR: SPA 601.
A study of Spanish literature of the Middle Ages, with special emphasis on the Poema de Mio Cid, Berceo, Juan Ruiz, Alfonso el Sabio and the ballads.

SPA 603. RENAISSANCE (3)
A study of Spanish literature of the late Fifteenth and the Sixteenth Centuries; from the Celestina through the immediate precursors of Lope de Vega.

SPA 624. CALDERON (3)
A seminar on representative plays by Calderon. Critical, analytical and research papers required.

SPA 643. GALDOS (3)
A seminar in representative novels and plays of Perez Galdos.

SPA 645. GENERATION OF 1898 (3)
A study of the philosophical writings of Ganivet, Unamuno, Ortega y Gasset, Azorin, and some of the minor writers.

SPA 647. NATURALISMO (3)

SPA 651. GARCIA LORCA AND HIS CONTEMPORARIES (3)
A study of the Vanguard movement and the new schools of thought: ultraismo and creacionismo.

SPA 652. TREMENDISMO (3)
A study of the post war novelists with special emphasis on Jose Cela.

SPA 661. MODERNISMO (3)
A study of the writing of Ruben Dario and other writers of Modernismo.

SPA 662. PROBLEMS IN THE SPANISH-AMERICAN NOVEL (3)
In-depth studies of selected themes, techniques, or historical periods in the Spanish-American novel.

SPA 663. MEXICAN LITERATURE (3)
A study of the literature of Mexico from the colonial period to the present.

SPA 689. SPANISH BIBLIOGRAPHY (0)
Training in use of library materials for graduate research and study. Lectures
by library staff on general use of research material and by specialists on specific areas of Spanish literature. Required of all candidates for the M.A. in Spanish.

SPA 691. GRADUATE SEMINAR (3)
Study of an author or authors or a literary movement. Extensive research, class discussion and papers required. Subject chosen to be announced one quarter in advance.

**SPEECH**

Faculty: J. Popovich, chairman; Brady, Galati, Kelly, Lucoff, Saret, Scheib, Schneider, Sisco, Steck, Stelzner, Webb, Weinfeld.

SPE 103. SPEECH FOR FOREIGN STUDENTS (5)
A special course for students learning English as a second language. Intensive study and drill in American English pronunciation and listening comprehension. May be taken in conjunction with CBS 100—English for Foreign Students.

SPE 201. FUNDAMENTALS OF SPEECH (5)
The nature and basic principles of speech; emphasis on improving speaking and listening skills common to all forms of oral communication through a variety of experiences in public discourse.

SPE 203. SPEECH IMPROVEMENT AND PHONETICS (5)
Designed to improve vocal quality and expressiveness, articulation, and pronunciation, and to give instruction and practice in using the International Phonetic Alphabet for speech improvement.

SPE 241. INTRODUCTION TO BROADCASTING (5)
PR: SPE 201 or 203. Introduction to the principles, tools and skills involved in radio and television broadcasting.

SPE 320. ISSUES AND INTERPRETATION (2)
The study of literature through analyses of printed textual materials and of the visual-aural textual performance of them. May be repeated.

SPE 321. FUNDAMENTALS OF ORAL READING (5)
PR: SPE 201 or 203. Designed to develop proficiency in the understanding and oral communication of literary and other written materials.

SPE 322. ORAL INTERPRETATION PERFORMANCE (2)
PR: SPE 321 or CI. The study, rehearsal, and performance of literature for Readers Theatre and Chamber Theatre productions. May be repeated (maximum total of 6 hours).

SPE 343. BROADCAST SPEECH (5)
PR: SPE 203. The development of skills required for effective announcing, acting, newscasting and other speaking before microphone and camera.

SPE 345. THE MASS MEDIA AND SOCIETY (5)
The mass communication process and influence of the mass media upon society.

SPE 347. RADIO PRODUCTION AND DIRECTION (5)
PR: SPE 241. Radio production and direction, laboratory and broadcasting experience.

SPE 351. INTRODUCTION TO AUDIOLOGY AND SPEECH PATHOLOGY (5)
PR: SPE 203. The nature, causes and principles of treatment of speech and hearing disorders.

SPE 360. CURRENT ISSUES AND RHETORIC (2)
An analysis of significant current speakers and issues. May be repeated.

SPE 361. GROUP DISCUSSION AND CONFERENCE METHODS (5)
PR: SPE 201 or CI. Principles and methods of leading and participating in various types of group discussion and conference. Emphasis on reflective thinking and group dynamics.
SPE 362. TECHNICAL COMMUNICATION (5)
Investigation and application of methodology and effective technical communication for effective oral presentation of technical reports.

SPE 363. PUBLIC SPEAKING (5)
PR: SPE 201 or CI. Study of selected public addresses as aids in speaking extemporaneously and from manuscript. The relationship between public speaking and public policy formulation.

SPE 365. PUBLIC DISCUSSION: ARGUMENTATION AND PERSUASION (5)
PR: SPE 201. Advanced study of factors involved in changing beliefs and behavior of audiences. Rhetorical analysis of public addresses; the study of effective organization and presentation of public questions through panel discussions, symposia, forums and debate.

SPE 366. FORENSICS (2)
PR: SPE 365 or CI. The study, library research and investigation, and practice in forensics. Application of the principles of rhetoric to the current debate and discussion topics. May be repeated (maximum of 6 hours).

SPE 367. FORMS OF PUBLIC ADDRESS (5)
PR: SPE 363 or 365. An advanced course emphasizing arrangement and style in informative, persuasive and ceremonial public address.

SPE 369. PARLIAMENTARY SPEAKING (3)
PR: Junior standing and CI. Principles of parliamentary procedure and practice in conducting and participating in meetings governed by parliamentary rules.

SPE 381. UNDERGRADUATE RESEARCH (credits vary)
PR: Junior standing and CI. Individual investigations and faculty supervision.

SPE 383. SELECTED TOPICS (credits vary)
PR: Junior standing and CI.

SPE 385. DIRECTED TOPICS (credits vary)
PR: Junior standing and CI.

SPE 411. SPEECH BEHAVIOR AND PROCESSES (5)
PR: SPE 203 or CI. Study of the theories of the simple and complex acoustical phenomenon of speech; intensive analysis of the stimulus-feedback variables of speech.

SPE 441. TELEVISION PRODUCTION AND DIRECTION (5)
PR: SPE 241. An introductory course in the techniques of producing and directing television programs.

SPE 442. ADVANCED TELEVISION PRODUCTION AND DIRECTION (5)
PR: SPE 441. Intensive study and practice of the techniques of television production and direction with emphasis on both creative and administrative aspects.

SPE 481. UNDERGRADUATE RESEARCH (credits vary)
PR: Senior standing and CI. Individual investigations with faculty supervision.

SPE 483. SELECTED TOPICS (credits vary)
PR: Senior standing and CI.

SPE 485. DIRECTED TOPICS (credits vary)
PR: Senior standing and CI.

SPE 491. SENIOR SEMINAR: PROBLEMS IN ORAL COMMUNICATION (2)
PR: Senior Standing. Exploration of problems in all aspects of speaking and listening with emphasis upon an overview of the arts and sciences of oral communication.

SPE 492. SENIOR SEMINAR: PROBLEMS IN ORAL COMMUNICATION (3)
PR: SPE 491. Intensive analysis of the complexities of scholarly investigation in special areas of the arts and sciences of oral communication.

FOR UPPER LEVEL AND GRADUATE STUDENTS

SPE 501. SPEECH BEHAVIOR AND PROCESSES (5)
PR: Upperclass standing. Study of the theories of the simple and complex acousti-
cal phenomenon of speech; intensive analysis of the stimulus-feedback variables of speech.

**SPE 503. APPLIED PHONETIC TRANSCRIPTION (5)**

**SPE 511. EXPERIMENTAL PHONETICS (5)**
PR: SPE 203. Understanding and application of experimental methods in analyzing speech sounds. Emphasis upon important research findings, instruments and methodologies in the laboratory study of normal speech. Development of phonetic skills of discrimination and reproduction of speech sounds.

**SPE 521. ORAL INTERPRETATION OF DRAMATIC LITERATURE (5)**
PR: SPE 321 or CI. Critical appreciation and Oral Interpretation of special textual materials which are inherently dramatic in nature and poetry, narrative prose, drama, biography, and history.

**SPE 522. ORAL INTERPRETATION OF POETRY (5)**
PR: SPE 321 or CI. Critical appreciation of lyric and narrative poetry and communication of that appreciation to an audience. Study of poetic theory and prosodic techniques.

**SPE 523. LITERARY ADAPTATION AND ORAL INTERPRETATION (5)**
PR: SPE 521. Practice in composition and adaptation of literary materials for oral presentation; an investigation of the more advanced problems in oral interpretation as in Choral Speaking and Chamber Theatre.

**SPE 565. HISTORY AND CRITICISM OF PUBLIC ADDRESS (5)**
PR: SPE 363 or CI. The principles of rhetorical criticism applied to selected great speeches of Western civilization.

**SPE 581. RESEARCH (credits vary)**
PR: Senior or graduate standing and CI.

**SPE 583. SELECTED TOPICS (credits vary)**
PR: Senior or graduate standing and CI.

**SPE 585. DIRECTED READINGS (credits vary)**
PR: Senior or graduate standing and CI.

**SPE 593. LANGUAGE AND SPEECH FOR CHILDREN (5)**
PR: SPE 203 or CI. A diagnostic study of language development; the analysis of speech behavior and oral language needs of children; techniques of speech improvement for children.

**FOR GRADUATE STUDENTS ONLY**

**SPE 621. HISTORY AND THEORIES OF ORAL INTERPRETATION (5)**
A study of the history, critical writings, uses, and development of the art of oral interpretation, with analysis of the principles and practices.

**SPE 611. COMMUNICATION: ANALYSIS AND MEASUREMENT (5)**
A study of selected modes of communication. Includes analysis of communication symbology, and presents the theory and application of selected instruments for measuring and producing speech.

**SPE 661. CLASSICAL RHETORIC (5)**
Greek and Roman theory and practice; emphasis on Aristotle, Plato, Cicero, and Quintilian, selected other readings.

**SPE 662. MODERN RHETORICAL THEORY (5)**
Studies of Eighteenth and Nineteenth Century theorists and the historical and cultural forces influencing them; relationship to contemporary theory and practice.

**SPE 665. HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS (5)**
Criticism of selected speeches and speakers of American public address, studied against a background of political, social, and intellectual issues.
SPE 667. CONTEMPORARY RHETORICAL THEORY (5)
Studies in Speech and language; Speech as symbol, theories of meaning, the relation of language, thought, and action.

SPE 668. EXPERIMENTAL RESEARCH IN ORAL COMMUNICATION (5)
Critical examination of research design, procedures, and reporting of experimental studies in small group communication and persuasive discourse.

SPE 681. GRADUATE RESEARCH (1-5)
Directed study in special projects. Recommended only when material cannot be studied in scheduled courses.

SPE 683. SELECTED TOPICS IN SPEECH (1-5)

SPE 685. DIRECTED READINGS (1-5)

SPE 691. GRADUATE SEMINAR IN ORAL COMMUNICATION (5)

SPEECH PATHOLOGY AND AUDIOLOGY

Faculty: Webb, Director; Edwards, Francis, Gray, Glover, Holloway, Husband, Kasan, Kinde, Jackson, MacPherson, York.

SAI 371. INTRODUCTION TO COMMUNICATION DISORDERS (4)
Survey of etiologies, nature and prevention. Professional settings for the management of communication disorders.

SAI 471. INSTRUMENTATION FOR COMMUNICATION DISORDERS (4)
PR: SAI 371 or CI. Operation, maintenance, principles in use of electronic and mechanical equipment associated with management and diagnosis of communication disorders.

SAI 571. EVALUATION OF ORAL COMMUNICATION DISORDERS (4)
PR: SAI 371 or CI. Articulation, voice, language, and stuttering disorders. Reporting, case management, referral, and professional relationships.

SAI 572. EVALUATION OF AUDITORY COMMUNICATION DISORDERS (4)
PR: SAI 371 or CI. Auditory and visual communication skills of the hearing impaired. Hearing aid consultation, nonorganic hearing loss testing and reporting of hearing evaluation.

SAI 573. METHODS FOR AUDITORY COMMUNICATION DISORDERS (4)
PR: SAI 572 or CI. Speech reading, auditory training, electronic aids, and acoustic environment modification for the hearing impaired.

SAI 574. METHODS FOR ORAL COMMUNICATION DISORDERS (4)
PR: SAI 571 or CI. Classic and experimental approaches to and systems of evaluation of therapy in the management of speech impaired individuals.

SAI 575. MANAGEMENT OF COMMUNICATION DISORDERS (4)
PR: SAI 573 or SAI 574 or CI. Coordination, planning, and structuring of programs for individuals with communication disorders.

SAI 576. COMMUNICATION DISORDERS: VOICE (4)
PR: CI. Research and clinical literature on voice and voice disorders.

SAI 577. COMMUNICATION DISORDERS: ARTICULATION (4)
PR: CI. Research and clinical literature on articulation and articulation disorders.

SAI 578. COMMUNICATION DISORDERS: STUTTERING (4)
PR: CI. Research and clinical literature on stuttering and related disorders.

SAI 579. COMMUNICATION DISORDERS: HEARING (4)
PR: CI. Research and clinical literature on hearing disorders.

SAI 580. COMMUNICATION DISORDERS: LANGUAGE (4)
PR: CI. Research and clinical literature on language disorders.

SAI 598. INTRODUCTION TO SPEECH PATHOLOGY PRACTICUM (1-12)
PR: CI. Introductory Practicum for clinical Speech Pathology and Audiology.
SAI 673. PEDIATRIC AUDIOLOGY (4)
PR: CI. Survey of available procedures for the early identification of hearing loss with a pediatric population.

SAI 674. DIFFERENTIAL AUDIOMETRY (4)
PR: CI. Knowledge and skills regarding speech reception, malingering, GSR and EDG systems of hearing testing.

SAI 675. TECHNIQUES OF SPEECH READING (4)
PR: CI. Knowledge and skill regarding methods of teaching lip reading to hard-of-hearing and deaf individuals.

SAI 676. DIAGNOSIS OF HEARING PROBLEMS (4)
PR: CI. The use, coordination and interpretation of hearing test data as regards diagnosis of hearing problems.

SAI 677. HEARING CONSERVATION (4)
PR: CI. Information regarding prevention of hearing loss in children and adults in industry, schools, and other settings.

SAI 683. SELECTED READINGS (Topic) (4), (4), (4).
PR: CI. Attention to specific diagnostic categories such as cleft palate, aphasia, cerebral palsy and other diagnostic categories.

SAI 698. PRACTICUM IN SPEECH PATHOLOGY (1-12)
PR: CI. Field experience in Speech Pathology and Audiology practicum. Conducted in community facilities for speech, hearing and language impaired individuals.

SAI 699. THESIS (1-9)

THEATRE ARTS

Faculty: Whaley, chairman; Belt, A. Golding, Lorenzen, Mecham, O'Sullivan, Zachary.

TAR 203. INTRODUCTION TO THEATRE (3)
The nature of theatre as an art form. "How does a play mean?" Orientation and identification for the understanding of theatre. Open to all students and required of Theatre Arts majors.

TAR 211. FUNDAMENTALS OF STAGE PERFORMANCE (3)
Elementary principles and methods of stage performance with emphasis on inner creativity and physical expression.

TAR 212. STAGE MOVEMENT AND SPEECH (3)
PR: TAR 211 or CI. An exercise investigation of the nature and possibilities of human movement and sound in the theatre.

TAR 221. STAGECRAFT (3)
Basic design practice, color and drafting as applied to stage and television settings. Practical exercises in construction, painting, and mounting of scenery, with participation in performance productions.

TAR 252. STAGE MAKE-UP (1)
History, theory, and practice of make-up for the stage.

TAR 303. MODERN THEATRE PRACTICE (5)
Initial readings and exercises in theatre; play analysis, performance, and technical theatre. For non-theatre majors.

TAR 311. ACTING I (3)
PR: TAR 211, 212, or CI. Intermediate principles and methods of stage performance: mime, improvisation, speech, deportment, and characterization.

TAR 313. DIRECTING I (3)
PR: TAR 411. Staging the play, including script analysis, business, composition, movement and rhythm; rehearsal procedures and general organization. Lecture-laboratory using illustrative exercises and scene work.
TAR 321. TECHNICAL DIRECTING (3)
PR: TAR 221. Mounting the physical production. Lecture-lab using selected readings and practical problems in planning and producing the technical aspects of production.

TAR 322. STAGE PROPERTIES (3)
An investigation of historic architecture, decor, and furnishings for the theatre designer and director with practical exercises in duplication for the stage.

TAR 339. HISTORY OF THE THEATRE (5)
A survey of the chronological development of world theatre.

TAR 352. PERFORMANCE (1)
The study, rehearsal, and performance of major theatrical works. Open to all University students by audition on a credit or non-credit basis. Credit members subject to critical examination. May be repeated.

TAR 361. INTRODUCTION TO PUPPETRY (3)
Principles and methods of puppetry with an historical survey of major forms and practical problems with laboratory production.

TAR 411. ACTING II (3)
PR: TAR 311 or CI. Intermediate exercises in stage performance with special emphasis on problems of genre, style, and interpretation.

TAR 413. DIRECTING II (3)
PR: TAR 313. Problems in directing. Script interpretation, composition and movement for genre and period, coaching the actor, designing the mise en scène.

TAR 421. SCENE DESIGN I (3)
PR: TAR 321 or CI. Aesthetics and theories of stage design with an historical study of the development of the physical theatre and scenery. Practical design problems.

TAR 422. SCENE DESIGN II (3)
PR: TAR 421. Continuation of Scene Design.

TAR 423. COSTUME DESIGN I (3)
Aesthetics, design, and techniques of stage costuming. A survey of fashion of the Western World and its interpretation as costume for the stage.

TAR 424. COSTUME DESIGN II (3)
PR: TAR 423. Continuation of Costume Design.

TAR 425. STAGE LIGHTING I (3)
PR: TAR 321. Theories and techniques of lighting as they relate to play production and theatre architecture.

TAR 426. STAGE LIGHTING II (3)
PR: TAR 425. Continuation of Stage Lighting, with emphasis on lighting design.

TAR 431. THEATRE LITERATURE OF MYTH AND RITUAL: CLASSIC (3)
A study of the development of dramatic form out of early religious rites and its full flowering in the works of Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, and Terrence.

TAR 432. THEATRE LITERATURE OF MYTH AND RITUAL: MEDIEVAL (3)
The rebirth of drama in the ancient Christian Church and a study of the theatre literature which grew out of these early beginnings.

TAR 433. LITERATURE OF THE RENAISSANCE THEATRE (3)
Historical study of Renaissance drama; readings from the plays of Machiavelli, Goldoni, Lope de Vega, Calderon, Marlowe, Jonson, Corneille, Moliere, and Racine.

TAR 435. LITERATURE OF THE EIGHTEENTH CENTURY THEATRE (3)
A study of English and Continental theatre literature from the restoration of the English monarchy to the fall of Napoleon.

TAR 436. LITERATURE OF THE NINETEENTH CENTURY THEATRE (3)
A study of theatre literature from the late Romanticism of Hugo to the “Free Theatre” movement of the continent.
TAR 437. LITERATURE OF THE MODERN AND CONTEMPORARY THEATRE (3)
Readings of contemporary American, British, and Continental drama from Ap­
polonaire to Albee.

TAR 443. PLAYWRITING I (3)
PR: TAR 503 or equivalent, 3 hours of creative writing, and CI. Basic dramatic writing practices and conventions. Evaluation of student work in conferences. Study of selected readings. May be repeated.

TAR 444. PLAYWRITING II (3)
PR: TAR 443. Continuation of Playwriting. May be repeated.

TAR 454. EXPERIMENTAL THEATRE PERFORMANCE (2)
PR: TAR 211, 212, 352, or CI. The study, rehearsal, and laboratory performance of new and experimental works for the theatre. May be repeated to a total of 6 credits.

TAR 471. THEATRE MANAGEMENT (3)
A study of commercial, community, and educational theatre operation with special emphasis on box office management, production costs, contracts, publicity, and public relations.

TAR 473. ADVANCED THEATRE MANAGEMENT (3)
PR: TAR 471 or CI. A study of production company organization and operation and of program selection and schedule.

TAR 481. DIRECTED STUDIES (1-6)
PR: CC. Independent studies in the various areas of Theatre Arts. Course of study and credits must be assigned prior to registration.

TAR 483. REPERTORY PERFORMANCE (1-9)
PR: CC. Advanced performance, theory, and practice, with practical examination. All course work is by directed study and must relate to Department Productions.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

TAR 501. DRAMATIC CRITICISM I (3)
A study of basic critical writings on the theatre from Aristotle to the present.

TAR 502. DRAMATIC CRITICISM II (3)
PR: TAR 501. Continuation of Dramatic Criticism.

TAR 511. STYLES OF ACTING (3)
PR: TAR 411 or CI. Exercises in the performance problems of the actor in pre-modern plays. May be repeated for a total of 9 hours.

TAR 515. PERFORMANCE PRODUCTION (3)
PR: TAR 413, majors only, CI. Actual production work in which members of the class prepare a play for project performance, teamed with designers from TAR 529.

TAR 529. TECHNICAL PRODUCTION (3)
PR: TAR 421-422, 423-424, 425-426, majors only, CI. Actual production work in which students design and execute scenery, costumes, properties, and lighting for project performance, teamed with playwrights and/or directors from TAR 515.

TAR 543. ADVANCED PLAYWRITING (3)
PR: TAR 443, 444, and CI. Concentration on the writing of the full length play form, with selected readings and analysis of dramatic structure. May be repeated.

TAR 544. WRITING FOR THE SCREEN (3)
PR: TAR 443, 444, and CI. Planning and writing of the film short and feature film from rough scenario to finished screenplay. Selected readings and critical analysis of screenplays by Agee, Bergman, Kurosawa, Hitchcock, etc. May be repeated.

TAR 552. ADVANCED PERFORMANCE (1)
PR: TAR 352 or CI. The study, rehearsal, and performance of major theatrical works. Admission by audition. May be repeated.
TAR 554. ADVANCED EXPERIMENTAL THEATRE PERFORMANCE (2)  
PR: TAR 454 or CI. The study, rehearsal, and laboratory performance of new and experimental works for the theatre. Admission by audition. May be repeated for a total of 6 hours.

TAR 581. DIRECTED STUDIES (1-9)  
PR: CC. Independent studies in the various areas of Theatre Arts. Course of study and credits must be assigned prior to registration.

ZOLOGY

See also Inter-disciplinary Biology.

Faculty: Briggs, chairman; Brown, Burns, Cowell, DeWitt, Friedl, Hopkins, Krivanek, Lawrence, Layne, Linton, Meyerriecks, Simon, Snyder, Woolfenden.

ZOO 311. *COMPARATIVE VERTEBRATE ANATOMY (6)  
PR: BIO 201-3. Anatomy of selected vertebrate types emphasizing evolutionary trends. lec-lab.

ZOO 312. *COMPARATIVE EMBRYOLOGY (6)  
PR: BIO 201-3. A comparative study of developmental processes among selected invertebrates and vertebrates with emphasis on experimental approaches, lec-lab.

ZOO 313. *INTRODUCTORY INVERTEBRATE ZOOLOGY (5)  
PR: BIO 201-3. An introduction to the major invertebrate groups, with emphasis on local marine forms. Field work will be required. lec-lab.

ZOO 319. FISH AND GAME MANAGEMENT (3)  
PR: BIO 201-203. An introduction to the principles of fish and game management and conservation.

ZOO 411. *HISTOLOGY (4)  
PR: ZOO 311 and/or ZOO 312. Comparative approach to the study of tissues and the relation of their structure and function. lec-lab.

ZOO 416. AQUATIC ENTOMOLOGY (4)  
PR: ZOO 415. Taxonomy, development, and ecology of aquatic insects with emphasis on local forms. lec-lab.

ZOO 446. TERRESTRIAL ANIMAL ECOLOGY (3)  
PR: BIO 445. Field and laboratory investigations of the basic principles of ecology as applied to terrestrial animals. lec-lab.

ZOO 447. MARINE ANIMAL ECOLOGY (5)  
PR: BIO 445 and ZOO 313. Investigations of community structure in local marine habitats. Field work is required. lec-lab.

ZOO 481. UNDERGRADUATE RESEARCH (1-6)  
PR: CI. Individual investigation with faculty supervision.

ZOO 483. SELECTED TOPICS IN ZOOLOGY (1-6)  
PR: CI. Each topic is a program in directed study under supervision of a faculty member.

ZOO 491. SEMINAR IN ZOOLOGY (1)  
PR: Upper division. May be repeated once.

FOR SENIOR LEVEL AND GRADUATE STUDENTS

ZOO 513. **PARASITOLOGY (5)  
PR: BIO 201-3. Fundamentals of animal parasitology and parasitism; the biology of selected animal parasites, including those of major importance to man. lec-lab.

* The purchase of a coupon book to cover breakage is required for these courses.
ZOO 514. INTRODUCTION TO ENTOMOLOGY (4)
PR: BIO 201-3. An introduction to general aspects of insect morphology, development and classification. The identification of local forms will be emphasized. lec-lab.

ZOO 515. LIMNOLOGY (4)
PR: CI. An introduction to the physical, chemical, and biological nature of freshwater environments. lec-lab.

ZOO 516. HERPETOLOGY (4)
PR: BIO 201-3. The biology of amphibians and reptiles with emphasis on taxonomy. lec-lab.

ZOO 517. ORNITHOLOGY (4)
PR: BIO 445 or CI. The biology of birds with emphasis on the local avifauna.

ZOO 518. MAMMALOGY (4)
PR: ZOO 311 or 312. The biology of mammals, including systematics, ecology, natural history, and geographical distribution.

ZOO 519. ICHTHYOLOGY (5)
PR: ZOO 311. Systematics of fishes, including major classification, comparative anatomy, embryology, and general distribution. lec-lab.

ZOO 521. COMPARATIVE PHYSIOLOGY (5)
PR: CI. The evolution of physiological mechanisms. lec-lab.

ZOO 523. PHYSIOLOGY OF MARINE ANIMALS (5)

ZOO 524. COMPARATIVE ENDOCRINOLOGY (5)
PR: ZOO 521 or CI. An analysis of the similarities and differences between the hormonal mechanisms of mammals, other vertebrates, and invertebrates. lec-lab.

ZOO 533. PHYSIOLOGY OF FISHES (4)
PR: ZOO 521 or CI. An analysis of the physiological mechanisms of metabolism and integration in fishes with emphasis on marine forms. lec-lab.

ZOO 545. ZOOGEOGRAPHY (3)

ZOO 546. MARINE INVERTEBRATE ZOOLOGY I (5)
PR: BIO 201 and CI. The lower invertebrate phyla. Field trips to local intertidal and subtidal habitats required. lec-lab.

ZOO 547. MARINE INVERTEBRATE ZOOLOGY II (5)
PR: BIO 201 and CI. The higher invertebrate phyla. Field trips to local intertidal and subtidal habitats required. lec-lab.

ZOO 561. ANIMAL SOCIAL BEHAVIOR (5)
PR: CI. An introduction to comparative ethology, with emphasis on social behavior and the evolution of behavior. lec-lab.

ZOO 562. MECHANISMS OF ANIMAL BEHAVIOR (5)
PR: BIO 201-3, CHM 331-333 and CI. A comparative approach to communication and orientation in animals including homing behavior and biological clocks. lec-lab.

FOR GRADUATE STUDENTS ONLY

ZOO 609. BIOCHEMICAL SYSTEMATICS (4)
PR: CI. A research oriented course on the acquisition and use of biochemical information in animal systematics. lec-lab.

ZOO 611. EXPERIMENTAL EMBRYOLOGY (5)
PR: ZOO 312, BIO 421-2 and CI. Lectures, laboratories, readings, and discussions relating to contemporary advances in the area of biochemistry of development. Experimental techniques will be studied. lec-lab.
ZOO 613. ADVANCED INVERTEBRATE ZOOLOGY (3)
PR: ZOO 313 or CI. An advanced zoological study of selected invertebrate groups with emphasis on regionally significant forms. Laboratory and field work required. lec-lab.

ZOO 614. PLANKTON ECOLOGY (4)
PR: ZOO 313 or ZOO 546 and ZOO 547. The relationships and distribution of planktonic organisms as affected by their physical, chemical, and biological environments. lec-lab.

ZOO 615. PLANKTON SYSTEMATICS (4)
PR: ZOO 313 or ZOO 546 and ZOO 547. The identification of plankton from different depth zones in the sea and from various oceanic regions. lec-lab.

ZOO 616. BIOMETRY (4)
PR: MTH 101 or CI. An introduction to statistical procedures for research in the biological sciences. Experimental design, analysis of data, and presentation of results are emphasized.

ZOO 617. SYSTEMATIC ORNITOLOGY (3)
PR: ZOO 517 and CI. The classification and distribution of the birds of the world. lec-lab.

ZOO 618. ADVANCED MAMMALOLOGY (4)
PR: ZOO 518. Important literature and developments in mammalogy. Students will undertake individual research problems. lec-lab.

ZOO 619. ADVANCED ICHTHYOLOGY (5)
PR: CI. Systematic ichthyology with particular reference to the important literature together with a historical introduction. Laboratory devoted to completion of a systematic problem by each student. lec-lab.

ZOO 620. FIELD ORNITOLOGY (3)
PR: ZOO 517 and CI. The use of local populations in the study of avian biology. lec-lab.

ZOO 621. PHYSIOLOGICAL ECOLOGY (5)
PR: CI. Effect of environmental factors on animal function at the cellular and organ system level with emphasis on control mechanisms. lec-lab.

ZOO 622. INVERTEBRATE PHYSIOLOGY (3)
PR: CI. A research-oriented study of selected topics in invertebrate physiology. Laboratory and field work required.

ZOO 631. ADVANCED GENETICS (5)
PR: BIO 332 and CI. A course in contemporary genetics, with special reference to molecular genetics, genetic fine structure analysis, and control of protein synthesis. lec-lab.

ZOO 661. ADVANCED ANIMAL BEHAVIOR (4)
PR: ZOO 561 and CI. Recent advances in comparative animal behavior (ethology). lec-lab.

ZOO 681. GRADUATE RESEARCH (1-9)
PR: CI. Directed research on non-thesis topics. May be repeated.

ZOO 683. SELECTED TOPICS IN ZOOLOGY (1-6)
PR: CI.

ZOO 691. GRADUATE SEMINAR IN ZOOLOGY (1)
PR: Graduate standing. May be repeated.

ZOO 699. M.A. THESIS (1-9)
PR: CI. May be repeated to a maximum of 9 credits.
GLOSSARY

An explanation of terms with which the reader may not be familiar.

Academic Year: Beginning of First Quarter to end of Fourth Quarter; usually considered as September 1 to August 31.

Admission: Acceptance of a student for enrollment.

Class Standing Codes:
1. Freshman
2. Sophomore
3. Junior
4. Senior
5. BA or BS degree holder
6. Student enrolled in master’s program
7. Student accepted to candidacy in master’s program
8. Master’s degree holder
9. Student enrolled in doctoral program

College: Unit within the University responsible for providing instruction in a given area of knowledge.

Course: A unit of instruction in a particular subject; usually one quarter in length.

Curriculum: A group of courses, forming a major field of study, required for a degree.

Elective: Any of a number of courses from which a student is allowed to select. A free elective is one not required in the student’s curriculum.

Faculty: Persons in teaching and research; the instructional staff of the University.

Grade Point Ratio (GPR): Ratio of grade points to quarter hours attempted.

Graduate Program: A course of study leading to an advanced degree.

Hour, Credit Hour, Quarter Hour: Unit of academic work. The number of quarter hours specified for a course is usually equal to the number of times the class meets each week.

Lower Level: A general term applying to courses and programs offered at the freshman and sophomore levels.

Major: Student’s academic area of concentration or field specialization.

Matriculation: The first registration following admission as a classified student.

Prerequisite: Prior study or authorization required to qualify for enrollment in a course.

Quarter: Period of instruction into which the academic year is divided.

Registration: Process of enrolling for classes.

Term: Period of instruction into which the academic year is divided (i.e., Quarter).

Upper Level: A general term applying to courses and programs offered at the junior and senior levels.

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