

Course Descriptions

Listed alphabetically by academic department

Accounting

- ACCT 100 Financial Accounting** 3 cr.
A basic survey course emphasizing financial statements (Balance Sheet, Income Statement and Statement of Cash Flows) which are the output of the accounting process. Standard setting, financial analysis and auditing also explored. Variable. *NOT OPEN TO ACCOUNTING MAJORS/MINORS OR BUSINESS ADMINISTRATION MAJORS.*
- ACCT 201 Introductory Accounting I** 3 cr.
Fundamentals of accounting theory and practice. Accounting for basic transactions, adjustments, closing entries, preparation of classified financial statements, merchandising systems, current assets, other topics. Every semester.
- ACCT 202 Introductory Accounting II** 3 cr.
Fundamentals of accounting theory and practice, sequel to ACCT 201. Preparation of financial statements for partnerships and corporations, corporate owners' equity, bonds, investments, Cash Flow Statement, financial statement analysis, other topics. Every semester. *Prerequisite: C grade or better in ACCT 201.*
- ACCT 301 Intermediate Accounting I** 3 cr.
Application of accounting theory and techniques to the accounting process, financial statement preparation, time value of money, current assets, plant assets and intangible assets. Every semester on the main campus and fall on the Hagerstown campus. *Prerequisite: C grade or better in ACCT 202.*
- ACCT 302 Intermediate Accounting II** 3 cr.
Application of accounting theory and techniques, sequel to ACCT 301. Liabilities, investments, stockholders' equity, pensions, leases, Cash Flow Statement, other current topics. Every semester on the main campus and spring on the Hagerstown campus. *Prerequisite: C grade or better in ACCT 301.*
- ACCT 305 Accounting Systems** 3 cr.
Modern accounting systems, computer applications in accounting problems and systems design. Lab/Lecture. Variable. *Prerequisites: C grades or better in ACCT 202 and COSC 100.*
- ACCT 310 Managerial Accounting for Business** 3 cr.
Accounting as a tool for decision making, control and evaluation. Volume-cost-profit analysis, budgeting, standard costing, variance analysis and product costing. Variable. *NOT OPEN TO ACCOUNTING MAJORS.* Every semester. *Prerequisite: ACCT 202.*
- ACCT 315 Cost Accounting** 3 cr.
A functional approach to managerial decision making with an emphasis on product costing, budgeting and standards, variance analysis, cost behavior, capital budgeting, cost allocation. Spring only. *Prerequisite: C grade or better in ACCT 202.*
- ACCT 316 Advanced Cost Accounting** 3 cr.
A functional approach to managerial decision making, sequel to ACCT 315. Relevance of costs, decision models, managerial performance evaluation and motivation. Cost accumulation for financial reporting purposes. Fall only. *Prerequisites: ACCT 305 and ACCT 315.*
- ACCT 325 Auditing** 3 cr.
Fundamentals of auditing theory and practice. Ethics, legal liability, generally accepted auditing standards, the conceptual framework underlying auditing and reporting. General approaches to auditing financial statements, other services provided by public accountants. Spring only. *Prerequisites: C grades or better in ACCT 302 and ACCT 305.*
- ACCT 326 Advanced Auditing** 3 cr.
Advanced topics in auditing theory and practice. Specific methods and procedures used in auditing financial statements. Review of Statements on Auditing Standards. Preparation of audit case. Variable. *Prerequisite: C grade or better in ACCT 325.*
- ACCT 330 Governmental and Nonprofit Accounting** 3 cr.
Accounting and financial reporting for state and local governments, and nonprofit organizations such as hospitals and colleges. Variable. *Prerequisites: C grades or better in ACCT 301 and ACCT 305.*
- ACCT 340 Financial Reporting Issues** 3 cr.
Investor's use of financial statements, management motives in issuing statements, internal financial versus reporting decisions, economic significance of accounting reports, and the evolution and variety of accounting principles. Dissection of corporate accounting reports required by the financial markets, creditors, and regulatory authorities. Variable. *Prerequisites: 42 credits and C grade or better in ACCT 202.*
- ACCT 380 Business Law for Accountants** 3 cr.
The legal responsibility of accountants, contracts, personal property, documents of title, performance of sales contracts, passage of title and risk of loss, remedies of a seller and buyer, warranties, negotiable instruments and bankruptcy. Variable. *NOT OPEN AS AN ACCOUNTING ELECTION FOR MAJORS OR MINORS WITHOUT DEPARTMENT PERMISSION. Prerequisite: ACCT 202.*
- ACCT 401 Advanced Financial Accounting I** 3 cr.
Business combinations, consolidated financial statements using purchase and pooling methods, accounting errors and changes, other current topics. Variable. *Prerequisites: C grades or better in ACCT 302 and ACCT 305.*
- ACCT 402 Advanced Financial Accounting II** 3 cr.
Note that ACCT 401 is not a prerequisite for this course. It includes the application of accounting theory and techniques to partnerships, nonprofit entities, installment sales, consignments, interim reports, SEC reporting, bankruptcy, multinational entities, estates and trusts. Variable. *Prerequisites: C grades or better in ACCT 302 and ACCT 305.*
- ACCT 420 Tax** 3 cr.
Federal income taxation of individuals and corporations. Introductory tax research. Fall only. *Prerequisites: 60 credits and C grade or better in ACCT 202.*
- ACCT 421 Advanced Tax** 3 cr.
Partnerships, S corporations, advanced topics in individual taxation, other topics such as computer tax preparation packages and Maryland taxes at the discretion of the instructor. Variable. *Prerequisites: C grade or better in ACCT 305 and ACCT 420.*
- ACCT 425 Volunteer Income Tax Assistance** 2 cr.
Guided work experience in tax preparation of federal and state returns provided as a community service. Requires a minimum of 50 hours of experience and completion of IRS and campus training program. Spring only. Repeatable up to 4 credits. Does not fulfill ACCT major electives requirement. *Prerequisites: ACCT 420 or permission of instructor.*
- ACCT 491 Seminar in Accounting** 3 cr.
Advanced topics in accounting chosen under supervision of instructor. Research paper submitted for seminar analysis. Discussion leadership expected. Variable. *Prerequisites: senior standing and a C grade in ACCT 305.*

ACCT 494 Field Experience in Accounting 3 or 6 cr.
Guided work experience in public accounting, industry, government or non-profit accounting. Minimum of 135 clock hours of experience. Academic component consists of two research papers on experience-related topics and a detailed report on the field experience. Credit hours determined by departmental Field Experience/Internship Committee. Previous experience not acceptable for credit. Repeatable up to 6 credits. Spring and Summer. *Prerequisites: Junior or Senior standing, 12 cr. in accounting, departmental approval.*

ACCT 495 Internship in Accounting 9 or 15 cr.
Guided work experience in public accounting, industry, government or non-profit accounting. Minimum of 360 clock hours on internship for 9 credits. Minimum of 600 clock hours (full-time work) for 15 credits. Academic component consists of two research papers on internship-related topics and a detailed report on the internship. Credit hours determined by departmental Field Experience/Internship Committee. Credit hours cannot be used toward accounting major requirements. Previous experience not acceptable for credit. Graded P/F. Spring and Summer. *Prerequisites: Junior or Senior standing, 12 cr. in accounting, departmental approval.*

African American Studies

AAST 200 Introduction to African American Studies 3 cr.
Overview of critical aspects of the history and culture of African Americans. Employs various interdisciplinary perspectives to explore the experience of Africans uprooted from their land, ways in which these African Americans have adjusted to their new society, and contributed to its growth and development. Variable.

AAST 300 Traditional Africa 3 cr.
The African pre-colonial states: their governments, economic systems, cultural patterns, achievements, and relations with other African and non-African peoples. Also offered as HIST 301. Variable.

AAST 400 Africans of the Diaspora 3 cr.
Study of contemporary issues concerning Africans of the Diaspora. Examines, in seminar format, some historical challenges to African Americans, along with adjustments made and initiatives taken in the face of various Euro-American systems and institutions. Variable.

Art

ART 100 Art Appreciation 3 cr.
Introduction to the appreciation and understanding of the visual arts. GEP LAC Group A. Every semester.

ART 104 Foundational Studies I 3 cr.
Introduction to art as an intellectual, perceptual process. Critical study, art vocabulary, use of multi-media; visual organization and formalistic analysis of two- and three-dimensional design. Required of all art majors and minors. Two hr. lecture, 2 hr. lab. Fall only.

ART 105 Foundational Studies II 3 cr.
Visual organization and formalistic analysis of two- and three-dimensional design. Critical study and the development and use of multi-media. Required of all art majors and minors. Two hr. lecture, 2 hr. lab. Spring only.

ART 110 Visual Imagery 3 cr.
An introduction to the visual arts through theory and practice; exploring basic aesthetic concepts, modes of visual communication, expressive

meaning of various materials, theoretical components and symbol systems. GEP LAC Group A. Every semester.

ART 111 Honors: Art Appreciation 3 cr.
Introduction to the appreciation and understanding of the representational and visual arts. Focus includes the visual arts' relationship to civilizations' ideas, cultural developments in the humanities, and iconography. GEP LAC Group A. Fall semester only. *Prerequisite: acceptance into the Honors Program or permission of instructor.*

ART 202 Ceramics 3 cr.
Introduction to ceramic processes, history, and aesthetics of ceramic form; an exploration of functional and sculptural ceramics. Studio performance stressed. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisites: ART 105 or permission of instructor.*

ART 207 Graphic Design 3 cr.
Fundamentals of applied design. Graphics problems in advertising and commercial art; class problems in communication arts; commercial processes and techniques; use of professional materials. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisites: ART 104 and ART 212, or permission of instructor.*

ART 209 Crafts Workshop 3 cr.
A variety of crafts such as textiles, weaving, mosaics, leather, and metalwork. Two hr. lecture, 2 hr. lab. Variable.

ART 212 Drawing 3 cr.
Drawing as a creative process. Study and representation of objects and natural forms, visualization and composition; graphic images, both figurative and non-figurative, in various media. Two hr. lecture, 2 hr. lab. Every semester.

ART 221 Painting 3 cr.
Introduction to painting — color, form, shape, and texture; problems in formal and expressive relationships. Studio performance stressed. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisites: ART 104 and ART 212, or permission of instructor.*

ART 232 Printmaking 3 cr.
Introduction to relief, intaglio, planographic, and serigraphic processes. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisites: ART 104 and ART 212, or permission of instructor.*

ART 235 Photography 3 cr.
Introduction to still photography: basic camera use, exposure control, and darkroom procedure. Final portfolio of work required. Two hr. lecture, 2 hr. discussion, and one 3-hr. darkroom period per week. Every semester.

ART 236 Digital Imaging 3 cr.
Introduction to photography and image manipulation using digital processes. Students will study the basics of traditional still photography, but enhance the learning experience through digital production on the Macintosh computer. An introduction to the computer as a tool in fine arts: camera use, scanning, digital manipulation and output. Variable. *Prerequisites: ART 104 or permission of instructor.*

ART 240 Sculpture 3 cr.
Introduction to classical and contemporary concepts of form and media of sculpting. Physical properties of structure and the nature of materials. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisites: ART 105 or permission of instructor.*

ART 291 Core Review 0 cr.
Graded P/N. May be taken no more than three times. Every semester.

ART 301 Artistic Traditions: Asia 3 cr.
Survey of cultures outside the European tradition. An iconographic and aesthetic analysis of Asian traditions: Buddhist, Hindu, and Islamic. Variable.

- ART 302 Artistic Traditions: Africa and the Americas** 3 cr.
Survey of cultures outside the European tradition. An iconographic and aesthetic analysis of the arts of Africa, Pre-Columbian America and the indigenous populations of North America. Variable.
- ART 307 Computer Graphics** 3 cr.
Introduction to terminology, methods, processes, craft, and technology of the computer graphic designer; emphasis on theory and application of the Macintosh computer system. May be taken only one time for credit. Two hr. lecture, 2 hrs. lab. Every semester. *Prerequisite: ART 207.*
- ART 360 Western Art History** 3 cr.
Survey from the prehistoric to the modern. The theoretical evolution of classicism and anti-classicism as evidenced in painting, sculpture and architecture. Every semester.
- ART 370 Women/Gender and the Visual Arts** 3 cr.
A survey and analysis of the roles of women and gender in artistic production, spectatorship, and critical discourse. Painting, sculpture, and photography. Spring, even-numbered years.
- ART 380 19th-Century Art History** 3 cr.
Survey of major artistic developments in Europe and America from the time of the French Revolution until World War I. This course presents the broad context of 19th century art. Fall, even-numbered years.
- ART 402 Advanced Ceramics** 3 cr.
Continued study of clays and glazes, potter's wheel and handbuilding techniques; critical analysis and research into historical and contemporary trends. At advanced levels, departmental majors will be involved in research and development of concepts culminating in a final senior exhibition or an internship. May be taken no more than 4 times for credit. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisites: ART 202 and ART 412, or permission of instructor.*
- ART 407 Advanced Graphic Design: Print & Video Media** 3 cr.
Continued study of print media and an introduction to video media. Students will solve a variety of design problems using Macintosh computers combined with traditional layout and illustration techniques. Lectures, demonstrations and class critiques demonstrate historical and functional use of a professional quality portfolio, culminating in a final senior exhibition or an internship. May be taken no more than 2 times for credit. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisites: ART 207, ART 307 and ART 412, or permission of instructor.*
- ART 408 20th-Century Art History** 3 cr.
Survey of major developments from post-impressionism to post-modernism and the contemporary: Europe and the United States. Variable.
- ART 411 Senior Portfolio** 3 cr.
Continued investigation and development of studio work and concepts, culminating in a professional portfolio. Co-registration in ART 491 required. Every semester. *Prerequisite: Passage of core review and senior status.*
- ART 412 Advanced Drawing** 3 cr.
Continued study of drawing media. Students will be involved in research and development of concepts. Two hr. lecture, 2 hr. lab. Every semester. *Prerequisite: ART 212.*
- ART 414 Advanced Graphic Design: Multimedia Design** 3 cr.
Continued advanced study of graphic design with emphasis on interactive design. Processes include digital imaging, digital video and audio production, animation, and interface design and scripting. Lectures, demonstrations, and critiques will focus on the formal, historical, and sociological aspects of interactive design. At the advanced level, departmental majors will be involved in research and development of concepts culminating in a professional quality portfolio, a final senior exhibition or an internship. May be taken no more than 2 times for credit. Every semester. *Prerequisites: ART 407 (twice).*
- ART 415 Art Criticism** 3 cr.
Problems in describing, analyzing, interpreting, and evaluating art. History, purposes, conceptual bases, and methods of art criticism; critical performance. Variable. *Prerequisites: ART 360 or ART 408, junior or senior standing.*
- ART 416 Illustration** 3 cr.
Exploration of illustrative techniques and media, both 2- and 3-D, and their application to graphic design, science, fashion, technology and industry. Problem-solving and topics in rendering, creative conception, media exploration, style, pre-production and printing methods, and career-oriented portfolio pieces. Two hrs. lecture, 2 hrs. lab. Variable. *Prerequisites: ART 212 and ART 412.*
- ART 421 Advanced Painting** 3 cr.
Continued study of painting and painting materials through individual problem-solving in objective and non-objective painting; critical analysis and research into historical and contemporary trends. At advanced levels, departmental majors will be involved in research and development of concepts culminating in a final senior exhibition or internship. May be taken no more than 4 times for credit. Two hr. lecture, 2 hrs. lab. Every semester. *Prerequisites: ART 221 and ART 412, or permission of instructor.*
- ART 430 Greek and Roman Art** 3 cr.
A social and art historical analysis of Greco-Roman visual representation. Sculpture and painting. Spring, odd-numbered years.
- ART 432 Advanced Printmaking** 3 cr.
Continued study of printmaking processes, refinement of media, and individual expression; critical analysis and research into historical and contemporary trends. At advanced levels, departmental majors will be involved in research and development of concepts culminating in a final senior exhibition or internship. May be taken no more than 4 times for credit. Two hr. lecture, 2 hrs. lab. Every semester. *Prerequisites: ART 232 and ART 412, or permission of instructor.*
- ART 435 Advanced Photography** 3 cr.
In-depth photographic exploration of selected subject matter. Unified photographic thesis required; critical analysis and research into historical and contemporary trends. At advanced levels, departmental majors will be involved in research and development of concepts culminating in a final senior exhibition or internship. May be taken no more than 4 times for credit. Two hr. lecture, 2 hrs. lab. Every semester. *Prerequisite: ART 235.*
- ART 440 Advanced Sculpture** 3 cr.
Continued study of functional and non-functional sculpture, and individual expression; critical analysis and research into historical and contemporary trends. At advanced levels, departmental majors will be involved in research and development of concepts culminating in a final senior exhibition or internship. May be taken no more than 4 times for credit. Two hr. lecture, 2 hrs. lab. Every semester. *Prerequisites: ART 240 and ART 412, or permission of instructor.*
- ART 452 Ceramic Glaze Research** 3 cr.
Exploration of ceramic glaze components, glaze calculation, glaze surfaces and firing temperatures. Two hrs. lecture, 2 hrs. lab. Variable. *Prerequisites: ART 202, ART 402 or permission of instructor.*
- ART 460 Renaissance and Baroque Art History** 3 cr.
The evolution of humanism and realism in the *quattrocento*, mannerism in the *cinquecento*, and caravaggism and classicism in the *seicento*. Fall, odd-numbered years.
- ART 490 Special Topics in Art** 1-6 cr.
Concepts or media not regularly presented, using special resources. Lecture and studio or lecture only. Variable. *Prerequisite: permission of instructor.*
- ART 491 Senior Review** 0 cr.
Graded P/N. Co-registration in ART 411 required. Every semester.

ART 492 Internship Seminar 3 cr.
Academic component of internship. Requires co-registration in 495. Graded A-F. Every semester.

ART 495 Internship in Art 6 or 12 cr.
Experiential component of internship: guided work experience in conjunction with 492; must directly relate to academic program. Full-time interns register for 3 credits in 492 and 12 credits in 495 and may not enroll in other courses. Part-time interns register for 3 credits in 492 and 6 credits in 495. Graded P/F. Every semester. *Prerequisites: senior status, in good academic standing; submission of Internship Agreement form prior to registering; enrollment for a full year as FSU student; permission of focus supervisor and Department Chair; 3 advanced courses in the focus.*

ART 499 Independent Study 1-3 cr.
Intensive individual study, staff-directed, in an area of special interest. *Prerequisite: permission of instructor.*

Biology

BIOL 109 Human Biology and the Environment 4 cr.
Study of the human species with emphasis on the interdependence of humans, other forms of life, and the physical environment. Three hrs. lecture, 2 hrs. lab. Not for majors or minors. GEP LAC Group C. Both semesters.

BIOL 149 General Biology I 4 cr.
Biological principles and concepts. The life processes, development and relationship among organisms. Three hrs. lecture, 2 hrs. lab. GEP LAC Group C. Both semesters.

BIOL 150 General Biology II 4 cr.
Plant and animal groups and the ecosystem. Emphasis on physiology and morphology. Three hrs. lecture, 2 hrs. lab. Required for majors. Both semesters. *Prerequisite: BIOL 149.*

BIOL 200 Scientific Investigation and Communication 3 cr.
Problem solving and communication in the natural sciences. Emphasis on analytical reasoning, application of concepts and principles, and values of language, order, and measurement to scientific thought. Three hrs. lecture/discussion. Both semesters. *Prerequisite: BIOL 149, MATH 209, and sophomore standing or permission of instructor.*

BIOL 201 Anatomy and Physiology I 4 cr.
The structure and function of the human body. Includes its organization, the musculoskeletal system and the nervous system. Two hrs. lecture and two 2-hr. labs. Not for majors. Fall only. *Prerequisite: BIOL 149.*

BIOL 202 Anatomy and Physiology II 4 cr.
The structure and function of the human body. Includes the endocrine, circulatory, respiratory, digestive, excretory, and reproductive systems, and human development. Two hrs. lecture and two 2-hr. labs. Not for majors. Spring only. *Prerequisite: BIOL 201 or permission of instructor.*

BIOL 230 Wildlife Techniques 3 cr.
Study and management of wildlife species. Capture, marking, physiological indices, food habits and nutrition, sex and age, population and habitat analysis. Current management practices. Two hrs. lecture, 3-hrs. lab. Fall only. Not open to students who have credit for former BIOL 330. *Prerequisite: BIOL 150.*

BIOL 302 Animal Physiology 4 cr.
Mammalian physiology, with emphasis on basic physiology. Two hrs. lecture, two 2-hr. labs. Both semesters. *Prerequisite: BIOL 149, CHEM 102.*

BIOL 303 Plant Physiology 4 cr.
Higher-plant growth and differentiation. Case-study method. Topics include general differentiation, photometabolism, translocation, and water

relations. Three hrs. lecture, 3 hrs. lab. Spring only. *Prerequisites: BIOL 150 and CHEM 102. CHEM 301 recommended.*

BIOL 304 Microbiology 4 cr.
Microorganisms, especially their form, structure, reproduction, physiology, metabolism, and identification, will be studied with emphasis on their distribution in nature, their beneficial and detrimental effects on humans, and the physical and chemical changes they make in the environment. Two hrs. lecture and two 2-hr. labs. Both semesters. *Prerequisites: BIOL 149, CHEM 102.*

BIOL 305 Dendrology 3 cr.
Collection, identification, and study of native and introduced woody plants in summer and winter conditions. One hr. lecture, two 2-hr. labs. Fall only. *Prerequisite: BIOL 149.*

BIOL 306 Vertebrate Embryology 4 cr.
Development of the vertebrate from gametogenesis to the establishment of organ systems. Two hrs. lecture and two 2-hr. labs. Spring only, odd-numbered years. *Prerequisites: BIOL 150, BIOL 327.*

BIOL 309 General Entomology 4 cr.
Identification, morphology, physiology, development, geological history, ecology, and control of insects. Two hrs. lecture, two 2-hr. labs. Fall only, odd-numbered years. *Prerequisite: BIOL 150.*

BIOL 310 Cell Biology 4 cr.
Dynamics of cells and their life processes. Ultrastructure, organization, thermodynamic and metabolic processes. Recommended for biology majors immediately following BIOL 150. Three hrs. lecture, one 2-hr. lab. Fall only. *Prerequisites: BIOL 150, CHEM 102. Corequisite: CHEM 301 or permission of instructor.*

BIOL 311 Morphology of the Thallophytes 4 cr.
Morphology, taxonomy, evolution, and life histories of algae and fungi; photosynthetic bacteria, mycorrhizae, and lichens. Emphasis on organisms important to the human race; plant and animal pathogens, and organisms of economic and ecological importance. Two hrs. lecture, two 2-hr. labs. Fall only. *Prerequisite: BIOL 150.*

BIOL 312 Morphology of the Embryophytes 4 cr.
Morphology, taxonomy, evolution, and life histories of bryophytes and vascular plants. Comparative study of the major organs of each group. Two hrs. lecture, two 2-hr. labs. Spring only. *Prerequisite: BIOL 150.*

BIOL 314 Plant Taxonomy 3 cr.
Classification of flowering plants, gymnosperms, and ferns. Emphasis on collection, identification, and preparation of herbarium specimens. One hr. lecture, two 2-hr. labs. Once per year. *Prerequisite: BIOL 149.*

BIOL 327 Comparative Anatomy 5 cr.
Emphasis on structural relationships among fish, amphibians, reptiles, birds and mammals based on the evolution and development of organ systems. Dissection of representative chordates. Two hrs. lecture, two 3-hr. labs. Both semesters. *Prerequisite: BIOL 150.*

BIOL 334 General Animal Behavior 3 cr.
Behavior of animals from an evolutionary approach. Research project required. Three hr. lecture. Spring only, odd-numbered years. *Prerequisite: BIOL 150 or permission of instructor.*

BIOL 340 General Ecology 4 cr.
Environmental relationships of plants and animals. Field laboratory experience. Measuring environmental variables in terrestrial and aquatic ecosystems. Two hrs. lecture, one 4-hr. lab. Fall and summer. Not open to students who have credit for former BIOL 405. *Prerequisite: BIOL 150, CHEM 102, MATH 209.*

BIOL 350 Genetics 3 cr.
Laws and molecular basis of inheritance. Genetic patterns and changes at the molecular, organismal, and population levels. Three hrs. lecture.

Spring only. *Prerequisite: BIOL 150; CHEM 102; MATH 209. Recommended: BIOL 304 and 310; CHEM 301.*

BIOL 401 Genetics Laboratory 1 cr.
Techniques of collection and analysis of genetic data, including molecular, chromosomal, Mendelian, and population genetics. One 2-hr. lab. Variable. *Prerequisite or corequisite: BIOL 350.*

BIOL 402 Evolution 3 cr.
Theories, evidences, and mechanisms of evolution. Three hrs. lecture. Fall only, odd-numbered years. *Prerequisite: BIOL 150.*

BIOL 404 Histology 4 cr.
Microscopic structure and function of the tissues and selected organs of vertebrates. Basic laboratory preparative techniques and tissue recognition. Two hrs. lecture, two 2-hr. labs. Spring only, even-numbered years. *Prerequisites: BIOL 150; CHEM 101.*

BIOL 406 Ornithology 4 cr.
Anatomy, physiology, behavior, ecology, and evolution of birds. Laboratory emphasis on identification of regional birds at the species and family level. Two hrs. lecture, one 4-hr. lab. Binoculars required. Spring only. *Prerequisite: BIOL 149.*

BIOL 407 Biological Systematics 3 cr.
Principles, concepts, and methodologies used in systematic biology. Methods for reconstructing the evolutionary relationships of plant and animal taxa (including phenetic and cladistic analyses). Procedures for description, classification, and analysis of the earth's biodiversity. Three hrs. lecture. Spring only, odd-numbered years. *Prerequisite: BIOL 402 or permission of instructor.*

BIOL 410 Plant Diseases 3 cr.
Nature, cause and control of disease in plants. Plant pathogens: nematodes, viruses, bacteria and fungi in greenhouse, field and forest plants. Laboratory emphasis on identification and preparation of specimens according to phytopathological principles. Two hrs. lecture, one 2-hr. lab. Spring only, odd-numbered years. *Prerequisite: BIOL 150.*

BIOL 411 Invertebrate Zoology 4 cr.
Structure, physiology, life history, and natural history of invertebrate groups. Emphasis on local fauna. Two hrs. lecture, two 2-hr. labs. Spring only. *Prerequisite: BIOL 150.*

BIOL 412 General Parasitology 4 cr.
Principles of parasite structure, function, life cycles and host-parasite relationships. Two hrs. lecture, two 2-hr. labs. Fall only, even-numbered years. *Prerequisites: BIOL 150; CHEM 102.*

BIOL 414 Quantitative Analysis of Vertebrate Populations 3 cr.
A survey of quantitative techniques used to describe, analyze, and model wildlife population phenomena and interactions between populations. Three hrs. lecture. Spring only. *Prerequisites: MATH 120 or a course in calculus, MATH 209, BIOL 150.*

BIOL 417 Ichthyology 3 cr.
The study of fishes, with emphasis on structure and function, development, behavior, ecology, and systematics. Two hrs. lecture, one 2-hr. lab. Fall only. *Prerequisite: upperclass standing in biology or wildlife/fisheries management.*

BIOL 420 Fish Management and Culture 3 cr.
Contemporary problems in fisheries management. The study of fish culture; alternatives of commercial harvest and culture. Field trips. Three hrs. lecture. Spring only. *Prerequisite: senior or graduate standing; MATH 209 or permission of instructor.*

BIOL 421 Sample Design and Analysis of Plant Communities 3 cr.
Ecology of plant communities in the mid-Atlantic; plant community concepts and attributes; environmental factors influencing the distribution and abundance of plants: light, temperature, fire, soil, water; methods of

sampling vegetation; quantitative analysis of vegetation data; multivariate methods of data interpretation including classification and ordination; collection and interpretation of field data; emphasis on modern computer methods. Two hrs. lecture, one 3-hr. lab. Every Fall. *Prerequisites: BIOL 314, BIOL 340.*

BIOL 422 Herpetology 3 cr.
The structure, behavior, ecology, evolution, and taxonomy of amphibians and reptiles. Laboratory emphasis on identification, anatomy, and ecology of local species; techniques of collecting, estimating population sizes, home ranges. Two hrs. lecture, one 3-hr. lab. Every spring. *Prerequisite: BIOL 150.*

BIOL 423 Mammalogy 4 cr.
The structure, taxonomy, behavior, ecology, evolution and public health significance of mammals, and history of the science of mammalogy. Laboratory emphasizes anatomy, identification, capture techniques, habitat analysis, and home-range and population characterization. Three hrs. lecture, one 3-hr. lab. Fall only. *Prerequisite: BIOL 150.*

BIOL 425 Forest Science 3 cr.
Forest resources, soils, and ecology. Silviculture: cutting methods, stand improvement, reforestation, genetic tree improvement. Forest protection, utilization; measuring, harvesting, and developing forest products. Forest management and administration. Forests of Maryland. Forest research; world resources. Two hrs. lecture, one 2-hr. lab. Fall only. *Prerequisite: upperclass or graduate standing.*

BIOL 426 Vertebrate Zoology 4 cr.
The biology of vertebrates: origin, evolution, classification, structure, ecology, reproduction. Identification of regional examples. Three hrs. lecture, one 2-hr. lab. Spring only. *Prerequisite: BIOL 150.*

BIOL 430 Introductory Limnology 4 cr.
Inland waters; physical, chemical, and biological aspects. An overview of hydrobiology. Laboratory emphasis on basic analysis of data from aquatic environments. Two hrs. lecture, two 2-hr. labs. Fall only. *Prerequisite: BIOL 340.*

BIOL 435 Molecular Biology 4 cr.
Modern molecular concepts and techniques such as molecular cell function, DNA replication, PCR, protein synthesis, restriction enzyme analysis, DNA sequencing and DNA fingerprinting. Two hrs. lecture, two 2-hr. labs a week. Variable. *Prerequisite: BIOL 304.*

BIOL 436 Electron Microscopy for Biologists 4 cr.
Principles and techniques of electron microscopy; thin and thick sectioning, positive staining. Use of the transmission and the scanning electron microscopes for animal and plant tissues, micro-organisms, and particulates. One hr. lecture, two 3-hr. labs. Spring only, odd-numbered years. Enrollment limited to 6, preference to students with an active research project. *Prerequisites: BIOL 310, PHYS 216, CHEM 302; cumulative G.P.A. 3.0; permission of instructor.*

BIOL 437 Molecular Biology Seminar 1 cr.
Current topics in molecular biology presented by students, faculty, and invited speakers coupled with in-depth analysis and discussion. One hour. Required for biology majors in biotechnology concentration. Fall semester *Prerequisite: junior or senior standing; BIOL 435.*

BIOL 438 Biotechnology Laboratory 1 cr.
Advanced techniques in molecular biology. Topics vary depending on instructor. Topics include cell culture methods, immunocytochemistry, electrophoretic separation and analysis. Repeatable to 4 credits when topics are substantially different, 3 credits required for biotechnology concentration. Both semesters. Ten 3 hr. lab sessions per semester. *Prerequisite: junior or senior standing; BIOL 435.*

BIOL 439 Environmental Toxicology 3 cr.
Interdisciplinary study of the major classes and properties of pollutants, ecotoxicology testing methods and their effects on living organisms and the ecosystem. Two hrs. lecture, two hrs. lab. Variable. *Prerequisites: BIOL 149 and BIOL 150.*

BIOL 440 Developmental Biology 4 cr.
Classical and modern study of processes producing structural and functional changes during the development of plants and animals. Three hrs. lecture, two hrs. lab. Variable. *Prerequisites: BIOL 149 and BIOL 150.*

BIOL 445 Immunology 4 cr.
Introduction to the complex network of cells and soluble mediators that recognize and react to substances foreign to the individual. Principles of immunity, techniques resulting from the study of this system, and pathologies resulting from its malfunction. Two hrs. lecture, two 2-hr. labs. Fall only. *Prerequisite: BIOL 304.*

BIOL 450 Ecology and Management of Wildlife Populations 3 cr.
Study of the factors that determine the distribution and abundance of wildlife populations and current management practices used to manipulate wildlife populations. Two-three field trips will be used to gain knowledge of regional management practices. Three hrs. lecture. Fall only. *Prerequisites: BIOL 340, and one from 406, 423 or 426.*

BIOL 460 Forestry Field Practice 3 cr.
A field-oriented overview of basic forestry. Includes field dendrology, silvics, elements of surveying and mapping, orienteering, log scaling, silviculture, timber cruising, and wildlife techniques. Numerous field trips to regional forests. Summer Session I. 1 cr. lecture, 2 cr. lab. *Prerequisites: BIOL 305, BIOL 425.*

BIOL 465 Environmental Health 3 cr.
Investigation of the relationship between human exposure to environmental pollutants and resultant adverse health effects. Consideration of epidemiology, exposure assessment, risk assessment and risk management. Variable. Also offered as GEOG 465. *Prerequisite: completion of two laboratory science courses.*

BIOL 490 Special Topics in Biology 2 to 4 cr.
A "one time only" course on a special topic selected by the instructor. Variable. Repeatable on a different topic. *Prerequisite: permission of instructor.*

BIOL 492 Wildlife-Fisheries Seminar 1 cr.
Integration of biological, social, political, economic, and philosophic fish-and-wildlife problems. For majors in wildlife-fisheries management. One hr. Variable. *Prerequisite: senior or graduate standing in biology or wildlife/fisheries management.*

BIOL 494 Field Experiences in Biological Sciences 2 to 6 cr.
Work experience with a federal, state or private organization, or industry, with job-related activities directly related to the student's major. Department committee approval and final report by the student required. Variable. *Prerequisites: biology and wildlife/fisheries majors only; junior or senior standing.*

BIOL 497 Readings in Biology 1 cr.
Discussion of readings on selected topics. One period per week. Repeatable to 2 credits. Variable. *Prerequisites: junior or senior standing, biology major or minor, permission of the instructor, completion of request form before registering.* (The department allows only a total of 2 credits in the readings courses 497 and/or 498.)

BIOL 498 Honors Program — Readings in Biology 1 cr.
Discussion of readings on selected topics. One period per week. Repeatable to 2 credits. Variable. *Prerequisites: senior standing, biology major, 3.0 average in major and completion of request form before registering.* (The department allows only a total of 2 credits in the reading courses 497 and/or 498.)

BIOL 499 Special Problems in Biology 2 or 3 cr.
Experimental research directed by a staff member. Variable. *Prerequisites: 20 credits in biology, junior or senior standing, permission of instructor, approval of the Department Chair, completion of request form before registering.*

Business Administration

BUAD 100 Introduction to Business 3 cr.
Introduction to the internal and external environment of contemporary business and a survey of basic concepts, principles, and practices of business organizations. Basic business terminology and concepts for beginning students seeking an introduction to the business world or assistance in making career decisions. Does not count for business or accounting majors. Every semester.

BUAD 291 Legal Environment of Business 3 cr.
The workings, importance, and origins of legal institutions; the law as a system of social thought and social action. Private property and contract in free enterprise; the evolution of legal attitudes toward business. Every semester. *Prerequisite: sophomore standing.*

BUAD 301 Personal Finance 3 cr.
Practical guidance in analyzing and making personal financial decisions: budgeting; borrowing; savings and investments; life, health and casualty insurance. How to get the most from your income, increasing your income, and planning for retirement. Does not count for business or accounting majors. Variable.

BUAD 303 Principles of Finance 3 cr.
Introduction to basic principles of the three traditional divisions of finance: financial markets and institutions, investment and portfolio analysis, and corporate finance. Does not count for business or accounting majors. Variable. *Prerequisites: ECON 200 or ECON 202 and ACCT 100 or ACCT 202.*

BUAD 320 Microcomputer Applications in Business 3 cr.
Managerial applications of the microcomputer most often encountered in business. Word processing for report writing, spreadsheets for financial modeling, graphics for presentations, and managerial data base applications using commercial programs. Three hrs. lecture/lab. Every semester. *Prerequisite: COSC 220.*

BUAD 330 International Business 3 cr.
Introduction to foreign commerce; survey of the environmental, economic, political and social constraints on doing business abroad; discussion of issues and problems facing managers when firms do business with and within foreign countries. Variable. *Prerequisite: 42 credits, or permission of instructor.*

BUAD 351 Management of Organizations 3 cr.
The practice of managing in today's dynamic environment; the purpose and processes of organizations; managing individuals and groups in organizations. Emphasis is placed on skills needed for managerial success. Every semester. *Prerequisite: 42 credits, or permission of instructor.*

BUAD 352 Employment Law 3 cr.
The law as it pertains to the process of Human Resource Management, with special emphasis on equal employment law. Variable. *Prerequisite: BUAD 291.*

BUAD 355 Operations Management 3 cr.
Introduction to the operations function of a business; the actual provision of services and /or production of goods. A range of analytical tools and techniques are introduced which are useful in planning, organizing, scheduling, and controlling operations. Every semester. *Prerequisites: BUAD 351 and MATH 209.*

- BUAD 356 Leadership and Interpersonal Skills** 3 cr.
Utilization of behavioral approaches in the process of self-development as a leader, understanding leadership as a mind set and as a tool. Emphasis is placed on applications of leadership qualities and interpersonal skills required for managerial success and organizational effectiveness. Every semester. *Prerequisite: BUAD 351 or permission of instructor.*
- BUAD 357 Human Resources Management** 3 cr.
Effective utilization of human resources in organizations: Emphasis on principles, practices and legal aspects of job analysis, recruitment and selection, training, compensation, safety and health, employer-employee rights, union-management relations; current issues in the field. Every semester. *Prerequisite: BUAD 351 or permission of instructor.*
- BUAD 359 Total Quality Management** 3 cr.
The Total Quality Management concept; relationship between quality and competitiveness; developing a quality culture through establishing a customer focus, total employee involvement and empowerment, team building, education and training; total quality tools; implementing total quality management. Variable. *Prerequisite: BUAD 351.*
- BUAD 361 Principles of Marketing** 3 cr.
Introduction to marketing and the fundamentals involved in the marketing process. Functions, institutions, and channels of distribution of goods and services from producer to consumer; the components of marketing strategy and their interrelationships. Every semester. *Prerequisite: 42 credits, or permission of instructor.*
- BUAD 363 Advertising** 3 cr.
Overview of advertising and sales promotion; their relation to social and economic systems. Processes for developing and implementing effective advertising programs, including promotional planning, media selection, and layout. Variable. *Prerequisite: BUAD 361.*
- BUAD 364 Retail Management** 3 cr.
Management of the retail function viewed as a separate business operation and as a part of the marketing strategy. Developing a retail strategy: organization, layout, merchandise planning and management, customer service, and pricing. Variable. *Prerequisite: BUAD 361.*
- BUAD 365 Principles of Selling** 3 cr.
Introducing students to the fundamentals of selling which include the selling process from preapproach to post-sale service. Variable. *Prerequisite: BUAD 361 or permission of instructor.*
- BUAD 366 Consumer Behavior** 3 cr.
Concepts and theories of consumer behavior; psychological and sociological influences on consumers. The relation of these theories to marketing strategies; consumer behavior in the segmentation of markets. Variable. *Prerequisite: BUAD 361.*
- BUAD 370 Corporate Finance** 3 cr.
Principles of financial management within business enterprises. Topics covered generally include, but are not limited to, basics of stocks and bonds valuation, financial analysis, capital budgeting, dividend policy, and both short-term financing and long-term capital structure decisions. Every semester. *Prerequisites: ACCT 202 and ECON 202; junior standing or permission of instructor.*
- BUAD 371 Principles of Insurance** 3 cr.
The nature of risk and its effect on the business enterprise. Various types of insurance, underwriting practices, actuarial and contractual problems, and government regulations. Variable. *Prerequisite: sophomore standing.*
- BUAD 373 Commercial Bank Management** 3 cr.
Operation and management of our commercial banks. Techniques and principles followed by commercial banks; managerial practices common to banking operations. Variable. *Prerequisite: BUAD 370.*
- BUAD 375 Financial Institutions Management** 3 cr.
Concepts of financial intermediation, characteristics of institutions within the financial services industry, regulation, and financial innovation. Management of liquidity, credit, interest rate, and other risks in a global economic environment. Variable. *Prerequisite: BUAD 370.*
- BUAD 376 Financial Management** 3 cr.
Financial planning and performance evaluation in the business enterprise; obtaining and investing funds. Case-study approach to financial decision-making; basic financial analysis, working capital management, capital budgeting, long-term financing, leasing, mergers, acquisitions, and bankruptcy. Every semester. *Prerequisites: BUAD 370 or both ACCT 302 and 315.*
- BUAD 377 Pension Fund Management** 3 cr.
Retirement income savings planning. Characteristics of various private pension plans and 401(K) plans. Management of defined contribution plans and defined benefit plans, investment of pension assets and performance evaluation of pension funds. Variable. *Prerequisites: 3 credits of accounting and 3 credits of economics.*
- BUAD 381 Principles of Real Estate** 3 cr.
Industry principles and factors influencing the real estate business. Contracts, deeds, valuation, financing, and government regulation. Meets requirements of Regulation 19, Maryland Real Estate Commission, Department of Licensing and Regulation, for real estate salespersons. Variable. *Prerequisite: sophomore standing.*
- BUAD 415 New Business Ventures** 3 cr.
Development of new ideas and opportunities into new businesses, potential problems and requirements for success, sources of venture capital, development of business plans. Course will use a case study approach requiring both oral and written presentations. Every semester. *Prerequisites: BUAD 351, 361, and 303 or 370, or permission of instructor.*
- BUAD 450 International Management** 3 cr.
Study of international and comparative management theories, concepts and practices; managing in a global environment, cross-cultural management practices, managing human resources in international corporations, unique challenges in managing transnational organizations, and contemporary issues facing global managers. Variable. *Prerequisite: BUAD 330.*
- BUAD 452 Staffing and Development** 3 cr.
The role of human resource professionals at every stage of the employment process from prehiring to postfiring, staffing policies, internal and external recruitment, HR development strategies and training program development, career management, outplacement programs. Variable. *Prerequisite: BUAD 357.*
- BUAD 455 Management Information Systems** 3 cr.
Relation of MIS to the management functions of planning, control, and decision making. Concepts that underlie a MIS: systems management, data bases, computers, telecommunications, and general systems design and implementation. Variable. *Prerequisites: BUAD 351 and COSC 220 or BUAD 320.*
- BUAD 456 Compensation Management** 3 cr.
The principles of compensation management, job analysis and evaluation, establishment and administration of pay systems, employee benefits, executive compensation. Variable. *Prerequisite: BUAD 357.*
- BUAD 457 Labor Relations** 3 cr.
The role of management and unions in our society, labor-management problems and their resolution, the collective bargaining process, the legal framework of labor-management relations, administration of the labor contract. Variable. *Prerequisite: BUAD 357.*
- BUAD 460 International Marketing** 3 cr.
Study of the marketing function from an international perspective. Discussion of the cultural, legal, political and economic aspects of international marketing, in addition to international marketing policies and strategies. Comparison of markets and marketing techniques in the U.S.

and foreign markets. Problems and techniques of export marketing are highlighted. Variable. *Prerequisite: BUAD 361.*

BUAD 461 Integrated Marketing Communications 3 cr.
Study of theory and practice of integrating advertising, personal selling, sales promotion, public relations and other marketing communication tools to send to target audiences a consistent, persuasive message that promotes organizational goals. Variable. *Prerequisite: BUAD 363.*

BUAD 462 Marketing Research 3 cr.
Design, collection, and analysis of marketing data relating to consumer, product, and market demands. Statistical designs, sampling techniques, Bayesian decision theory, and development of market information systems. Variable. *Prerequisite: 6 cr. in marketing, including BUAD 361, MATH 209; 2nd semester junior standing.*

BUAD 463 Marketing Research II: Field Surveys 3 cr.
Field applications of marketing research techniques through design, implementation, analysis and reporting of questionnaires relating to current marketing situations. Variable. *Prerequisites: BUAD 462.*

BUAD 465 Marketing Strategies 3 cr.
Market analysis, product planning, channels of distribution, pricing, and promotional decision making; analysis of environmental constraints and market opportunities. Variable. *Prerequisites: 9 cr. in marketing and 2nd semester junior standing.*

BUAD 466 Services Marketing 3 cr.
Discussion of marketing theory and methods in the management of services. Elements of the service marketing mix are emphasized. Variable. *Prerequisite: BUAD 361.*

BUAD 469 Marketing Plans Development 3 cr.
Development of complete and formal marketing plans for existing or new consumer products. Structure encompasses all aspects of a contemporary marketing plan from situational analysis through implementation and control. Variable. *Prerequisites: Senior standing and BUAD 363, 366, 462, 465 or permission of instructor.*

BUAD 470 International Financial Management 3 cr.
Analysis of financial management in a multinational enterprise. Management of foreign exchange risks, translation and transaction exposure, participation in global financial markets, foreign asset management, political risks. Variable. *Prerequisite: BUAD 370.*

BUAD 475 Securities Investment 3 cr.
Investment opportunities in financial instruments. Valuation of fixed income, equity, and derivative securities. Evaluation of mutual funds. Investment strategies for portfolio management: portfolio selection, diversification, and performance analysis. Variable. *Prerequisite: BUAD 370 or senior standing.*

BUAD 478 Options and Futures 3 cr.
Study of financial futures, options and techniques of financial engineering. Institutional features, and basic valuation principles of futures contracts on interest rates, foreign currencies, and stock market indices. Valuation and application of put and call options. Options on futures and recent developments in financial engineering. Variable. *Prerequisite: BUAD 475 or permission of the instructor*

BUAD 479 Financial Policy 3 cr.
Advanced topics in corporate financial policy. Extensive case study and readings-based approaches to developing and implementing financial policy. Short-term financial planning, advanced capital budgeting, valuation of the firm, long-term strategic financial planning and issues of corporate restructuring. Variable. *Prerequisites: 9 crs. in finance and senior standing.*

BUAD 480 Business and Society 3 cr.
The relationship of business with society; stakeholder relationships; social, ethical and public issues affecting business and managerial ap-

proaches for dealing with these issues. Emphasis on the social responsibilities of business. Variable. *Prerequisite: 6 crs. of business course work and senior standing.*

BUAD 485 Business Policy and Strategy 3 cr.
Strategy and policy formulation and implementation; effects on various levels of management. Integrating the functions of the enterprise within the social, political, legal and economic environment. A case-study approach requiring both written and oral presentations of case problems. Every semester. *Prerequisites: senior standing and 18 hrs. of business administration, including BUAD 351, 361, and 370.*

BUAD 490 Special Topics in Business Administration 3 cr.
A detailed study of a limited topic, problem, or period. Topics vary from semester to semester. Variable. *Prerequisites: Senior standing and 18 hrs. of business administration course work, or permission of instructor.*

BUAD 491 Seminar in Business Administration 3 cr.
Advanced topics in business administration. Under the selected theme of the seminar, each student presents research papers for critical analysis by seminar participants. Variable. *Prerequisite: senior standing and 18 hrs. of business administration course work.*

BUAD 492 Internship Research Paper 3 cr.
The separately graded academic component of the internship, required in conjunction with 495. Graded A through F. The entire internship (495 and 492) is for a total of 15 credits for full-time interns and 9 credits for part-time interns. Variable. *Corequisite: BUAD 495.*

BUAD 494 Field Experience in Business Administration 3 cr.
Supervised field experience for majors, relating to operations in commercial or government organizations. Detailed report on the experience required. No more than one field experience may be applied toward graduation. Variable. *Prerequisites: junior or senior standing; minimum of 12 hrs. in business administration; approval of the department Internship Committee.*

BUAD 495 Internship in Business Administration 6 or 12 cr.
Guided work experience with an academic component. Work must be directly related to academic program. Full-time interns register for 12 credits and may not enroll in any other courses (except 492, required). Part-time interns register for 6 credits. The experiential component is graded P/F. Variable. *Prerequisites: junior or senior status, in good academic standing; submission of a completed Internship Agreement form to the departmental internship director prior to registering. Corequisite: BUAD 492.*

BUAD 499 Independent Study in Business Administration 1 - 3 cr.
Research and report on a specific topic not covered by regularly rostered courses. Topic will be defined by the student in conjunction with faculty sponsor. Proposals must be approved prior to registration. Every semester. Course may be repeated for a maximum of 4 credits. *Prerequisites: 18 credits of BUAD course work, senior standing and permission of department chair.*

Chemistry

CHEM 100 Chemistry and Society 4 cr.
Examines the modes of research, the development of modern chemical principles, and the application and subsequent impact of these developments on society. Not intended for natural science majors. Three hrs. lecture, one 2-hr. lab. GEP LAC Group C. Both semesters.

CHEM 101 General Chemistry I 4 cr.
Atomic and molecular structure, theories of covalent and ionic bonding, chemical reactions, states of matter, gas laws, solutions, reaction rates, stoichiometry, and thermochemistry. Three hrs. lecture, one 3-hr. lab. GEP LAC Group C. Both semesters. *Prerequisite: Algebra competence as*

demonstrated by a placement test administered by the University, successful completion of a college level algebra-based math course, or permission of instructor.

CHEM 102 General Chemistry II 4 cr.
Acid-base concepts, equilibria, thermodynamics, electrochemistry, reaction rates, coordination compounds, and organic, nuclear, and descriptive chemistry. Three hrs. lecture, one 3-hr. lab. Both semesters. *Prerequisite: CHEM 101.*

CHEM 103 Foundations of Chemistry 3 cr.
Introduction to fundamental concepts, methodology and nomenclature of chemistry, including data analysis, atomic structure, inorganic and organic compounds, chemical equations and reactions, stoichiometry, states of matter, solutions, reaction rates and equilibrium. No laboratory. Web delivered. Variable.

CHEM 110 Modern Chemistry and Society 3 cr.
Non-mathematical approach to chemical principles, modes of chemical research, current applications, effects on the environment, and impact on society. For non-science majors. Three hrs. lecture. Variable.

CHEM 111 Modern Chemistry and Society Laboratory 1 cr.
Non-mathematical laboratory experiments applicable to modern chemistry. For non-science majors. One 2-hr. lab. Variable. *Prerequisite or corequisite: CHEM 110.*

CHEM 113 Honors: Chemistry and Society 4 cr.
Examines the models of research, the development of modern chemical principles, and the application and subsequent impact of these developments on society. Both reading and writing components will be more challenging than those in CHEM 100. Three hrs. lecture, 2 hrs. lab and 1 hr. recitation. GEP LAC Group C. Spring only. *Prerequisite: Admission to Honors Program or permission of instructor.*

CHEM 300 Computational Techniques in Chemistry 2 cr.
Introduction to and application of the fundamental methods, tools and techniques essential to solve chemical problems. Regular topics include statistical, mathematical and computational tools; data analysis, and use of chemical sources. Additional topics explored will augment student needs and supplement area of current interest in chemistry. One 2-hr lab. Fall semester. *Prerequisites: 12 cr. in Chemistry, MATH 226 or equivalent, or permission of the instructor.*

CHEM 301 Organic Chemistry I 5 cr.
Chemistry of the compounds of carbon. Classes and nomenclature of compounds, structure, reactions, mechanisms, spectroscopy, and stereochemistry. Three hrs. lecture, one 4-hr lab. Fall semester. *Prerequisites: CHEM 101 and 102 or equivalent.*

CHEM 302 Organic Chemistry II 5 cr.
Continued study of compounds of carbon. Three hrs. lecture, one 4-hr lab. Spring semester. *Prerequisite: CHEM 301 or equivalent.*

CHEM 320 Quantitative Analytical Chemistry 4 cr.
Theory, methods, and treatment of data pertaining to chemical analysis. Gravimetric, volumetric, potentiometric, electroanalytical, and spectrophotometric applications in the laboratory. Three hrs. lecture, one 3-hr lab. Fall semester. *Prerequisites: CHEM 101 and 102; MATH 120 or equivalent. Corequisite: PHYS 215 or equivalent, or permission of instructor.*

CHEM 411 Advanced Inorganic Chemistry 4 cr.
Covers the application of symmetry operations and group theory in order to elucidate the bonding and spectroscopy of transition metal complexes. Selected topics in inorganic reaction mechanisms, photochemistry, catalysis and bio-inorganic chemistry will then be examined using these theoretical approaches. Three hrs. lecture, one 3-hr. lab weekly. Fall, even numbered years. *Prerequisite or corequisite: CHEM 441 or permission of instructor.*

CHEM 420 Environmental Chemical Analysis 4 cr.
Explores applications of wet chemical, electroanalytical (potentiometric and amperometric), spectroscopic (UV-Vis, spectrofluorimetry and AA) and chromatographic (HPLC, GC, GCMS, TLC) techniques for standard and trace analyses of water, soil, and tissue materials. Emphasis on application of standard protocols, development of experimental technique and sample preparation. Two 3 hr. lectures/lab. Spring, even-numbered years. *Prerequisites: CHEM 101 and CHEM 102.*

CHEM 421 Instrumental Analysis 4 cr.
Theory and applications of modern instruments for chemical analysis. Electronics, spectroscopic, electrochemical, and chromatographic techniques. Laboratory use of NMR, IR, UV, AA, and GC instruments. Three hrs. lecture, one 3-hr. lab. Disallows credit for CHEM 321. Spring semester. *Prerequisite: 16 cr. in chemistry including CHEM 320, 441, and 445, or permission of instructor.*

CHEM 438 Advanced Organic Chemistry 3 cr.
Structure and bonding in organic compounds, reactivity, mechanisms of reactions, and application to reaction types. Three hrs. lecture. Variable. *Prerequisites: CHEM 301 and 302.*

CHEM 441 Physical Chemistry Lecture I 3 cr.
Theory and applications of the principles of physical chemistry. Equilibria, gas laws, thermodynamics, electrochemistry, structures, and properties. Three hrs. lecture. Fall semester. *Prerequisites: 16 cr. in Chemistry from the following: CHEM 101, 102, 301, 302, 320; MATH 227, 228 and 320 or 432; and PHYS 215 and 216 or equivalent or permission of instructor.*

CHEM 442 Physical Chemistry Lecture II 3 cr.
Quantum theory, statistical thermodynamics, chemical dynamics, spectroscopy, and structures. Three hrs. lecture. Spring semester. *Prerequisite: CHEM 441.*

CHEM 445 Physical Chemistry Laboratory I 1 cr.
Experimental physical chemistry. One 3-hr. lab. Fall semester. *Prerequisite or corequisite: CHEM 441.*

CHEM 446 Physical Chemistry Laboratory II 1 cr.
Continuation of CHEM 445. One 3-hr. lab. Spring semester. *Prerequisite or corequisite: CHEM 442.*

CHEM 455 Biochemistry I 3 cr.
The chemistry and metabolism of biological compounds, biochemical thermodynamics, enzyme mechanisms, and kinetics. Three hrs. lecture. Fall semester. *Prerequisites: CHEM 301 and 302; BIOL 149 or permission of the instructor.*

CHEM 456 Biochemistry Laboratory 1 cr.
Qualitative and quantitative laboratory experiments on the nature and properties of biological materials. One three-hr. lab. Spring semester only. *Prerequisite or corequisite: CHEM 455.*

CHEM 457 Biochemistry II 3 cr.
A continuation of Biochemistry I. Metabolic processes and their conservation among widely divergent organisms. Cell processes, their interrelation and regulation. Biochemical techniques and their applications to a variety of current biological problems. Three hrs. lecture. Spring semester. *Prerequisite: CHEM 455 or equivalent.*

CHEM 460 Environmental Chemistry 3 cr.
An investigation into the chemical nature of the environment. Development of the chemical interactions found in the atmosphere, hydrosphere, lithosphere, and biosphere. Energy and energy usage also discussed. Three hrs. lecture. Variable. *Prerequisites: CHEM 101, 102, and any of the following: BIOL 430, GEOG 432, CHEM 320 or 420.*

CHEM 490 Selected Topics in Chemistry 1 to 3 cr.
Specialized topics such as theoretical organic chemistry, spectroscopy, photochemistry, quantum chemistry, or stereochemistry. Repeatable on a different topic. Variable. *Prerequisite: 24 credits in chemistry or permission of instructor.*

- CHEM 491 Seminar in Chemistry I** 1 cr.
Current topics in chemistry presented by students, faculty, and invited guests. One period weekly. Required for majors. Fall semester. *Prerequisite: junior or senior standing.*
- CHEM 492 Seminar in Chemistry II** 1 cr.
Sequel to CHEM 491. One period weekly. Required for majors. Spring semester. *Prerequisite: junior or senior standing.*
- CHEM 493 Advanced Chemical Research** 1 to 8 cr.
Original student investigations in analytical, inorganic, physical, organic, and biochemistry involving both library and laboratory work, planned and executed under faculty guidance. A formal, publication-quality report and a seminar presentation are required. Research projects must be approved by the department and the instructor prior to registration in the course. Repeatable for credit. *Prerequisite: CHEM 302, junior standing in chemistry, and permission of department chair.*
- CHEM 499 Special Problems in Chemistry** 1 to 6 cr.
Methods and techniques of basic research. Repeatable to 6 credits. Both semesters. *Prerequisite: permission of department chair.*

Communication Studies

You may not receive credit for both a CMST course and the same course formerly labelled CMAT.

- CMST 100 Communication Practicum** ½ to 1 cr.
Entry level work experience in applying communication theory. Opportunities announced in Undergraduate Schedule Booklet every semester. Repeatable to 4 credits; may not be applied to fulfillment of major requirements. *Prerequisite: permission of instructor.*
- CMST 102 Introduction to Human Communication** 3 cr.
Fundamental theory and practice of human communication in dyadic, small-group, and public situations. Not open to students who have credit for former CMAT 102. Every semester.
- CMST 112 Honors: Introduction to Human Communication** 3 cr.
Fundamental theory and practice of human communication in dyadic, small-group, and public situations. Student-led discussions, activities. Not open to students who have credit for former CMAT 112. Variable. *Prerequisite: admission to Honors Program or written permission of instructor.*
- CMST 122 Introduction to Public Speaking** 3 cr.
Introduction to, and guided application of, basic principles which underlie effective public speaking and listening in informative, persuasive, and ceremonial speeches. Yearly.
- CMST 132 Introduction to Interpersonal & Small Group Communication** 3 cr.
Development of critical thinking, problem-solving, and relational skills in one-on-one and small group settings. Yearly.
- CMST 215 Small Group Communication** 3 cr.
Principles and practice of communication in small, task-oriented groups. Interaction of task and social dimensions. Problem-solving groups and decision-making principles and methods. Yearly.
- CMST 225 Interviewing** 3 cr.
Communication in informational, appraisal, employment, and persuasive interviews. Selecting and structuring questions to achieve specific objectives. Yearly. *Prerequisite: CMST 102/112.*
- CMST 300 Interpersonal Communication** 3 cr.
Study of the face-to face dyad as the fundamental human communication relationship. Implications for other communication modes and settings.
- Not open to students who have credit for former CMAT 300. Yearly. *Prerequisite: CMST 102/112 or CMST 132 or permission of instructor.*
- CMST 302 Argumentation and Advocacy** 3 cr.
Analysis, construction, and communication of logical arguments in a variety of decision-making contexts. Alternate years. *Prerequisite: CMST 102/112 or CMST 122 or permission of instructor.*
- CMST 312 Language Behavior and Communication** 3 cr.
Processes of human language that enhance or limit thought and expression; development of language and symbolizing; relationship of thought to language; effects of language behavior. Every semester. *Prerequisite: CMST 102/112 or permission of instructor.*
- CMST 322 Presentational Communication** 3 cr.
Theory and practice of orally presenting ideas to reach audience-centered goals. Use of technology in activities common to communication-related careers. Not open to students who have credit for former CMAT 322. Alternate years. *Prerequisites: CMST 102/112 or CMST 122, or permission of instructor.*
- CMST 335 Organizational Communication** 3 cr.
Theory, practices and analysis of communication in the context of complex organizations. Agendas, briefings, meetings, conferences, presentations. Assessment and intervention techniques. Alternate years. *Prerequisite: Permission of instructor.*
- CMST 422 Seminar in Communication Analysis** 3 cr.
Criteria and methods of analysis of significant public discourse. Application to traditional and contemporary modes of public communication. Not open to students who have credit for former CMAT 422. Alternate years. *Prerequisite: 9 hrs of Communication Studies Core Courses, or permission of instructor.*
- CMST 451 Seminar in Communication Theory** 3 cr.
Examination of classical and contemporary concepts and methods by which the human communication process is explained.. Application to realistic settings. Not open to students who have credit for former CMAT 451. Alternate years. *Prerequisite: 9 hrs of Communication Studies Core Courses, or permission of instructor.*
- CMST 485 Issues and Responsibilities of Communication** 3 cr.
Study of ethical perspectives and legal constraints on communication as practiced in interpersonal, public, mass media, and artistic situations. Yearly.
- CMST 490 Special Topics in Communication Studies** 3 cr.
Study, research or applied experience related to an announced selected topic. Variable. *Prerequisite: permission of instructor.*
- CMST 492 Internship Project** 3 cr.
Academic component of internship experience, in conjunction with CMST 495. Graded A through F. Every summer. *Corequisite: CMST 495.*
- CMST 494 Communication Studies Practicum** 1 to 3 crs.
Supervised field experience for Communication Studies majors. Participation in the communication operations of a commercial, governmental, or educational organization. Repeatable but only 3 credits may be applied for the completion of the major. Every semester. *Prerequisite: Junior/Senior standing, a minimum of 12 credits in Communication Studies courses, and permission of the instructor.*
- CMST 495 Internship in Communication** 6 or 12 crs.
Experiential component of internship: guided work experience directly related to student's academic program. Full-time interns register for 12 credits in 495, 3 credits in 492, and may not enroll in any other courses. Part-time interns must register for 6 credits in 495 and 3 credits in 492. Graded P/F. Summer only. *Prerequisites: Junior/Senior status, not on probation; declared major in communication studies, minimum 12 cr. in communication studies, and 2.5 GPA in major; Internship Agreement Form approved by department internship director before registering.*

CMST 499 Directed Study 1 to 6 crs.
Intensive study through faculty-directed projects or papers. Hours arranged. Variable. *Prerequisite: permission of Department Chair.*

Computer Science

COSC 100 Introduction to Computer Science 3 cr.

A survey of the historical, technological, and societal aspects of computing with a practical component involving contemporary software applications. Topics include past and future computing, hardware, software, computer systems, data representation and processing, and social and ethical concerns of computing. Practical applications include word processors, spreadsheets, graphics packages, Email, Internet, and web page development basics. Every semester.

COSC 110 Honors: Introduction to Computer Science 3 cr.

A survey of the historical, technological, and societal aspects of computing with a practical component involving contemporary software applications and a programming component using a modern, high-level language. Topics include past and future computing, hardware, software, algorithms, computer systems, data representation and processing, and social and ethical concerns of computing. Practical applications include word processors, spreadsheets, programming languages, graphics packages, Email, Internet and Web page development basics. Fall only. *Prerequisite: acceptance into the Honors Program or permission of instructor.*

COSC 120 Introduction to Cyberspace 3 cr.

Survey of Cyberspace including all Internet services, communications and networking, Internet protocols, file types, multimedia and a summary of Web programming techniques. The practical component covers e-mail, chat, teleconferencing, file transfer, newsgroups, mailing lists, and the World Wide Web. For a semester project, you will search for and develop a basic Web site presenting Internet resources in your major discipline; this site should be a valuable personal reference that can be updated throughout your education and career. Every semester.

COSC 130 Introduction to Programming 3 cr.

Introduction to visual object-oriented computer programming; development of software stages, using Universal Modeling Language (UML); object-oriented concepts including object representation, and modularization. Strongly recommended for students with no programming experience prior to taking COSC 200. Every semester.

COSC 200 Computer Science I 3 cr.

An introduction to problem solving on digital computers, algorithm development and design. Fundamental computer programming concepts and constructs including sequence, selection, iteration, subprograms, data types and arrays. A thorough study and programming experience with a high-level structured programming language. Every semester. *Prerequisite: COSC 130 or prior programming experience.*

COSC 201 Computer Science II 3 cr.

Design and implementation of data structures used in programming such as linked lists, stacks and queues. Internal sorting, searching, and merging algorithms. Recursion. Performance analysis of algorithms. Every semester. *Prerequisite: COSC 200.*

COSC 220 Introduction to Software Applications 3 cr.

Survey of hardware, introduction to software used in business applications, microcomputer operating system, graphics, word processing, spreadsheet, database management systems, and network communication software for microcomputers. Every semester. *Prerequisite: COSC 100 or COSC 110.*

COSC 300 Structured Systems Analysis and Design 3 cr.

Analysis and design of information processing systems. Topics include

system development life cycle: study phase, design phase, development phase, operation phase. Student will design and analyze a simple system. Spring only. *Prerequisite: COSC 200.*

COSC 305 Computer Ethics 3 cr.

Ethical issues related to computing. Includes topics such as responsibility of the computing professional, computerized crime, technology and employment, equitable access to computing, national databases and privacy, software ownership, and responsibilities of the computing profession. Every semester. *Prerequisite: COSC 200.*

COSC 310 Data Structures and File Organization 3 cr.

Design and implementation of advanced data structures for computer applications. Topics include trees, graphs, external sorting, hash table and file organization management. Fall only. *Prerequisite: COSC 201.*

COSC 320 Business Programming 3 cr.

Design and implementation of business programming using COBOL. Writing programs to generate reports from sequential data files. Report formatting and paging techniques; edited PIC clauses; control breaks, sorting table and table processing, sequential, indexed, and relative files. Every semester. *Prerequisite: COSC 200.*

COSC 325 Software Engineering 3 cr.

Techniques and methodologies of software engineering. Topics include quality assurance, software protection and security. Every semester. *Prerequisite: COSC 201.*

COSC 330 Web Design and Development 3 cr.

A practical study of the design and development of Web sites, covering design principles, authoring applications, authoring languages, hypermedia, techniques for user interactivity, and Web programming. The practical component gives hands-on experience with each of these topics and introduces scripting with JavaScript; these lab exercises provide the expertise to complete, as a course project, a Web site presenting an advanced aspect of Web technology that the student researches. Every semester. *Prerequisite: COSC 120 or permission of the instructor.*

COSC 335 Network Architecture Design 3 cr.

An introduction to the design of networks. Topics include network architectures, protocols, Ethernet LANS, token ring LANS, established networks, network relays, repeaters, bridges, routers, network administration, inter-network design, and advanced network architectures. Fall only. *Prerequisite: COSC 201.*

COSC 345 The Internet and Multimedia Communications 3 cr.

An introduction to protocols and applications of multimedia communications. Topics include multimedia networks, compression methods, network protocols, end to end multicast, and multimedia application. Spring only, even-numbered years. *Prerequisite: COSC 365.*

COSC 350 Computer Organization and Assembly Language 3 cr.

An introduction to the logical architecture of the computer and to machine organization fundamentals such as bus structures and microcode as viewed by the assembly language programmer. Every semester. *Prerequisite: COSC 200.*

COSC 365 Digital Logic and Computer Design 3 cr.

Basic switching theory. Design and analysis of combinational logic circuits and synchronous sequential systems. Minimization techniques. Programmable logic and basic computer architecture. Register transfer language. Memory decoding, microprogramming, and bus structure and operation. Detailed study of an actual simple minicomputer or microcomputer system. Every semester. *Prerequisite: COSC 201. COSC 350 recommended.*

COSC 380 Computer-Based Information Systems 3 cr.

Computer information systems from a system planning perspective. Topics include digital communication evaluation, distributed resources, distributed processing and decision-making models. Several case studies are analyzed. Fall only. *Prerequisite: COSC 200.*

- COSC 390 Topics in Modern Programming Languages** 1 to 3 cr.
A modern programming language will be covered. Topics include the syntax and semantics of the language as well as the language programming environment. Example programs will deal with applications particularly suited to the chosen language. Students will be required to design and implement a major programming project. Variable. *Prerequisite:* COSC 201.
- COSC 410 Data and Computer Communication** 3 cr.
Fundamentals of data communications. Transmission media characteristics, data encoding, and multiplexing. Causes of transmission errors and data link control. Circuit switching, message packing and packet switching. Local area networks, introduction to terrestrial and satellite networks, ISDN, and future trends. Variable. *Prerequisite:* COSC 365.
- COSC 415 Computer Interfacing** 3 cr.
Basic digital computer interfacing, combining digital electronics, programming, and computer architecture. Topics include transducers, electronic amplification, D/A and A/D conversion, data sampling, data storage and retrieval, laboratory exercises in discrete and integrated software, survey of commercially available interface devices. Two hrs. lecture and 3 hrs. lab. per week. Variable. *Prerequisites:* COSC 200, PHYS 216 or PHYS 262 and PHSC 315 or PHYS 332 or permission of the instructor. Also offered as PHYS 415.
- COSC 420 Robotics and Computer Control** 3 cr.
Introduction to the field of robotics: applications, safety, sensors, Robotics Languages Model for Computer Aided Design (CAD), speech recognition and generation. Integration of robots with artificial intelligence. Variable. *Prerequisite:* PHYS 215 or PHYS 261, COSC core classes and permission of the instructor.
- COSC 430 Computer Education** 3 cr.
An investigation of topics relating to the use and teaching of computing technology for students with a computing background. Variable. *Prerequisite:* COSC 200.
- COSC 435 Network Implementation and Testing** 3 cr.
An introduction to the implementation and testing of networks. Topics include OSI layers, structured cabling, network operating systems, network devices, network connections, and the network file system. Variable. *Prerequisite:* COSC 365.
- COSC 440 Database Management Systems** 3 cr.
Introduction to database management systems. Topics include database design, database models such as entity-relationship and normalization. Practical use of data definition languages and data manipulation language of a commercial database management system such as Oracle. Variable. *Prerequisite:* COSC 201.
- COSC 445 Network and Distributed System Management** 3 cr.
An introduction to the management of Network and Distributed Systems. Topics include network technologies, monitoring distributed systems, OSI management model, network management protocols, network planning, security for management, and user administration and accounting. Variable. *Prerequisite:* COSC 365.
- COSC 450 Programming Language Structures** 3 cr.
Features of existing programming languages and underlying concepts. Syntax and semantics, simple statements, grouping of statements, scopes and storage allocations, subroutines. List processing and string manipulation languages. Fall only. *Prerequisite:* COSC 310.
- COSC 455 Artificial Intelligence** 3 cr.
An introduction to knowledge representation and inference, logic, semantic networks, frames and rule-based. Natural language processing; pattern recognition, pattern association and computer vision. Variable. *Prerequisite:* COSC 201.
- COSC 460 Operating Systems Concepts** 3 cr.
Detailed study of operating systems concepts. Process management, scheduling, time slicing, concurrency, mutual exclusion, semaphores, resource management, memory mapping, virtual systems, mass storage, file systems. Case studies of operating systems. Every semester. *Prerequisite:* COSC 201 and COSC 365.
- COSC 465 Computer Systems Architecture** 3 cr.
Architecture of large computing systems. Instruction set architecture and RISC. Design of high-speed arithmetic units, I/O subsystems, DMA, and channels. Interrupt structures. Horizontal vs. vertical microprogramming. Memory system hierarchy with emphasis on cache, virtual memory, and interleaving. Introduction to parallel processing and advanced architectural trends. Variable. *Prerequisite:* COSC 365.
- COSC 470 Compiler Designs and Constructions** 3 cr.
A detailed study of the concepts and techniques used in design and construction of a compiler. Topics include: lexical analysis, syntactic and semantic analysis, intermediate code generation, final code generation, and optimization techniques. Each student will be required to design and implement a functional compiler or interpreter for a given language. Spring only. *Prerequisites:* COSC 310 and COSC 365.
- COSC 475 Interactive Computer Graphics** 3 cr.
Concepts of computer graphics. Terminology and programming primitives, raster vs. vector hardware, interaction devices, software packages, geometrical transformations, two- and three-dimensional viewing, hidden line and surface removal, object hierarchy. Variable. *Prerequisite:* COSC 201.
- COSC 480 Knowledge-Based Systems** 3 cr.
Concepts of knowledge-based systems with an emphasis on expert systems. Topics include production systems, building of knowledge-based systems and future trends with expert systems. Variable. *Prerequisite:* COSC 380.
- COSC 485 Theory of Computation** 3 cr.
Basic theoretical principles embodied in formal languages, automata, computability, and computational complexity. Emphasis is placed on developing formal descriptions of computers and computational processes, and practical implications of theoretical results. Variable. *Prerequisites:* COSC 310, COSC 365 and MATH 200.
- COSC 491 Seminar in Computer Science** 1 to 6 cr.
Group study of advanced topics under faculty supervision; up to 3 credits may apply to major or minor in Computer Science. Every semester. *Prerequisites:* core courses and written permission of faculty supervisor. DEPARTMENTAL APPROVAL REQUIRED PRIOR TO REGISTERING.
- COSC 494 Field Experience in Computer/Information Science** 3 cr.
Work experience in industry, government, or small business providing an opportunity for practical application of academic training in computer/information science. The course requirements are: (1) A minimum of 90 hours of field experience; (2) A written report describing in detail the work performed in the field in conjunction with an oral presentation to interested faculty and students; (3) A project paper on a topic related to the work experience. Previous work experience may not be substituted for this course. More than one field experience may be completed, but the number of credits applied toward a Computer Science major is limited to 3. Every semester. *Prerequisite:* junior or senior standing and completion of the core courses in Computer Science. DEPARTMENTAL APPROVAL REQUIRED PRIOR TO REGISTERING.
- COSC 499 Individual Problems in Computer Science** 1 to 6 cr.
Individual advanced projects under faculty supervision; up to 3 credits may apply to major or minor in Computer Science. Students must submit a written, clear proposal to faculty supervisor and department. This proposal must be detailed enough to describe topics, time allocation and limitation, objectives, assignments and projects. Every semester. *Prerequisites:* core courses and written permission of faculty and supervisor. DEPARTMENTAL APPROVAL REQUIRED PRIOR TO REGISTERING.

Dance

You may not receive credit for both a DANC course and the same course formerly labelled PHEC.

- DANC 110 Dance Appreciation** 3 cr.
Dance forms, dance personalities, contemporary trends in dance. Not open to students who have credit for former PHEC 135. Every semester. GEP LAC Group A.
- DANC 105 Improvisation** 2 cr.
Exploration of spontaneous movement in response to various stimuli in solo and group settings. Two labs/week. Alternate years.
- DANC 131 Ballet I** 1 cr.
Basic ballet techniques and style. Not open to students who have credit for former PHEC111. Fall semester.
- DANC 142 Modern I** 2 cr.
Fundamental skills in modern dance. Not open to students who have credit for former PHEC 211. Fall semester.
- DANC 154 Jazz I** 1 cr.
Movement techniques in jazz dance; dance composition and improvisation. Not open to students who have credit for former PHEC112. Spring semester.
- DANC 209 Dance Composition I** 2 cr.
Exploration of movement materials through short problems dealing with rhythm, space, and dynamics. Two labs/week. *Prerequisite: DANC 105.* Alternate years.
- DANC 231 Ballet II** 2 cr.
Intermediate ballet techniques and terminology. Not open to students who have credit for former PHEC113. *Prerequisite: DANC 131 or permission of instructor.* Alternate years.
- DANC 242 Modern II** 2 cr.
Skills in intermediate modern dance. Not open to students who have credit for former PHEC213. *Prerequisite: DANC 142.* Alternate years.
- DANC 254 Jazz II** 2 cr.
Movement techniques, composition and improvisation in the jazz dance style. Not open to students who have credit for former PHEC114. *Prerequisite: DANC 154 or permission of instructor.* Alternate years.
- DANC 309 Dance Composition II** 2 cr.
The second of two courses in dance composition focusing on developing skill in the creative process. Exploration of more formal elements of composition with an emphasis on form and structure. Two labs/week. *Prerequisite: DANC 209.* Alternate years.
- DANC 332 Ballet III** 2 cr.
Study of advanced ballet technique, vocabulary, and style. Two labs/week. May be repeated for credit. *Prerequisite: DANC 231.* Alternate years.
- DANC 342 Modern III** 3 cr.
Advanced modern dance techniques; modern dance styles and personalities. Three labs/week. Not open to students who have credit for former PHEC 236. *Prerequisite: DANC 242.* Alternate years.
- DANC 360 Dance Repertory** 2 cr.
A dance repertory workshop for the intermediate/advanced. Lecture/lab. *Prerequisite: DANC 242 or DANC 231.* Alternate years. May be repeated for credit up to six credits.
- DANC 382 Dance History** 3 cr.
History of theatrical dance in Western Culture and the role of dance in humankind, a thematic approach. *Prerequisite: DANC 110.* Alternate years.
- DANC 408 Choreography and Production** 3 cr.
Procedures for choreographing, producing, and directing dance produc-

tions. Not open to students who have credit for former PHEC 431. Alternate years. *Prerequisite: Two credits in dance or permission of instructor.*

- DANC 429 Special Topics in Dance** 1 to 3 cr.
Advanced analysis and practice in dance movement; varying topics. A maximum of six credits combined can be earned in DANC 429 and the former PHEC 429. Repeatable to 6 credits. Yearly. *Prerequisite: 2 credits in dance technique or permission of instructor.*
- DANC 442 Modern IV** 3 cr.
An advanced/professional dance technique level in modern dance based on an eclectic fusion of movement vocabulary which has evolved from the early modern dance heritage with the inclusion of the instructor's own personal aesthetic. Three labs/week. *Prerequisite: DANC 342 or permission of instructor.* Yearly. May be repeated for credit.
- DANC 471 Principles of Teaching Dance** 3 cr.
Theory and practice of dance instruction including methods and materials. Two lectures and one lab/week. *Prerequisite: DANC 231 or DANC 242.* Alternate years.
- DANC 479 Teaching Practicum** 1 cr.
Application of theory and skills acquired in DANC 471. The student, under supervision, will teach dance in an authentic setting. *Prerequisite: DANC 471.* Alternate years.
- DANC 498 Senior Project** 1 cr.
Individual project performed under the supervision of a faculty member; the culminating experience for the dance major. Offered as needed.

Economics

- ECON 200 Basic Economics** 3 cr.
Introductory survey course covering both Macro and Microeconomics designed to provide minimum competence for majors other than business, accounting, and economics. Every semester. GEP LAC Group D.
- ECON 201 Principles of Economics (Macro)** 3 cr.
An introduction to Principles of Economics focusing primarily on the forces determining the economy-wide levels of production, employment, and prices. Examines monetary and fiscal policy and alternative views of how the economy should be managed. Every semester. GEP LAC Group D.
- ECON 202 Principles of Economics (Micro)** 3 cr.
An introduction to Principles of Economics focusing primarily upon individual consumer and producer decision making behavior in various organized market structures; the price system, market performance, efficiency and government policy. Every semester. *Prerequisite: ECON 201.*
- ECON 211 Honors: Principles of Macroeconomics** 3 cr.
An introduction into the forces at work in the national economy including income, employment, and the monetary system. A variety of written research assignments on current topics in macroeconomics required. Every Fall. GEP LAC Group D. *Prerequisite: acceptance into the Honors program or permission of the instructor.*
- ECON 212 Honors: Principles of Microeconomics** 3 cr.
Examines markets, consumer behavior, market structures, resource pricing, income distribution, and general equilibrium. Every Spring. *Prerequisites: ECON 201 or 211.*
- ECON 300 History of Economic Thought** 3 cr.
The historical evolution of economic doctrines from early times to the present; the relation of economics to social issues. Views and significance of major schools of thought. Every Spring. *Prerequisites: ECON 201 and ECON 202.*

- ECON 301 Labor Economics** 3 cr.
The theory of labor supply and demand, labor force participation, investment in human capital, compensating wage differentials, government regulation, employment, unemployment, unionism, discrimination, wage-related income transfers and pensions. Every Spring. *Prerequisites: ECON 201 and ECON 202.*
- ECON 303 American Economic Development** 3 cr.
Development from colonial times to the present. The industrial revolution and the impact of technological change upon such areas as transportation, agriculture, business organization, unions, the banking system, and public policy. Fall of odd-numbered years. *Prerequisites: ECON 201 and ECON 202.*
- ECON 305 Managerial Economics** 3 cr.
Applications of microeconomic theory to management practices. Topics include production, pricing, market structures and special topics in firm decision making. Students participate in management simulation. Every semester. *Prerequisites: ECON 201 and ECON 202.*
- ECON 306 Money and Banking** 3 cr.
The nature and functions of money, credit, banking, and the Federal Reserve System. Institutions generating the money supply; the influence of monetary and fiscal policies on economic stability and growth. Every fall. *Prerequisites: ECON 201 and ECON 202.*
- ECON 307 Government and Business** 3 cr.
Economic aspects of the relation of government and business in the United States; antitrust, economic, and social regulation of business. Spring of even-numbered years. *Prerequisite: ECON 201 and ECON 202.*
- ECON 309 Comparative Economic Systems** 3 cr.
Analysis of ideology and problems in different economic systems: capitalism, Marxism, and socialism. Comparisons of centrally planned and unplanned economics; free market pricing and direct controls; private enterprise and nationalized industry. Spring of even-numbered years. *Prerequisites: ECON 201 and ECON 202.*
- ECON 313 Economics of Race and Gender** 3 cr.
Uses both micro- and macro-economic models to study race and gender issues such as discrimination and affirmative action. Both U.S. and international issues are discussed. Topics include occupational segregation, slavery, poverty. Fall of even-numbered years. *Prerequisites: ECON 200 or ECON 201 or ECON 202 or permission of instructor.*
- ECON 351 Intermediate Macro-Economics** 3 cr.
General theory, both Keynesian and post-Keynesian, of the growth of the economy as a whole. Monetary theory, fiscal policy, and review of macroeconomic issues. Every semester. *Prerequisites: ECON 201 and ECON 202.*
- ECON 352 Intermediate Micro-Economics** 3 cr.
Theory of consumer behavior and demand. Production and cost theory and firm behavior under varying circumstances. Distribution theory. Every semester. *Prerequisites: ECON 201 and ECON 202.*
- ECON 400 International Trade** 3 cr.
An explanation of the pure theory of international trade and its application to trade policy; comparative advantage; gains from trade; tariffs, quotas, and other barriers to trade. Every fall. *Prerequisites: ECON 201 and ECON 202. May not receive credit if taken as ECON 402.*
- ECON 401 International Finance** 3 cr.
The theory of international finance and its application to international monetary policy; international monetary and capital movements; the balance of payments and adjustment mechanisms; alternative exchange rate systems. Every spring. *Prerequisites: ECON 201 and ECON 202. May not receive credit if taken as ECON 402.*
- ECON 404 Public Finance** 3 cr.
Government taxes and expenditures for economic stability and growth; tax equity, efficiency, and incidence; government services; relationship of monetary and fiscal policies. Spring of odd-numbered years. *Prerequisites: ECON 201 and ECON 202.*
- ECON 405 Economic Growth & Development: The Developing Economies** 3 cr.
Survey of underdeveloped economies. Theories of economic development and their application; appraisal of programs in selected developing countries. Fall of odd-numbered years. *Prerequisites: ECON 201 and ECON 202.*
- ECON 407 Business Cycles and Forecasting** 3 cr.
Analysis of business conditions and measurement including theories of cycles; problems of data selection, modeling, and estimation; and forecasting. Fall of even-numbered years. *Prerequisites: ECON 351 or permission of the instructor.*
- ECON 408 Urban and Regional Economics** 3 cr.
Focuses on applied economic analysis of the regional economy and areas within the regional economy. Techniques introduced include economic base analysis, shift share analysis and input-output modelling. Every fall. *Prerequisites: ECON 201 and ECON 202.*
- ECON 410 Resource and Environmental Economics** 3 cr.
Economic analysis of problems and policies affecting natural resource industries and the environment. Economic framework, mineral, forest, energy industries and environmental use and misuse are analyzed. Fall of even-numbered years. *Prerequisite: ECON 202 or permission of the instructor.*
- ECON 450 Quantitative Economics** 3 cr.
Introduction to quantitative methods used in economic empirical research. Model-building, estimation of economic parameters, and the testing of hypotheses. Every spring. *Prerequisites: ECON 201 and ECON 202.*
- ECON 460 Econometrics** 3 cr.
Applies economic theory, mathematics, and statistical techniques for the purpose of testing hypotheses about economic phenomena, estimating coefficients of economic relationships, and forecasting economic events. Fall of odd-numbered years. *Prerequisites: ECON 201, ECON 202, and MATH 209.*
- ECON 490 Special Topics in Economics** 1-3 cr.
Applications of economic principles to a variety of specialized topics. May be repeated for a maximum of 6 credits. Variable. *Prerequisites: ECON 201 and 202 or permission of instructor.*
- ECON 491 Seminar in Economics** 3 cr.
Research papers on a selected theme for critical analysis by members of the seminar. Leadership in discussion expected. Designed primarily for economics majors. Every spring. *Prerequisites: ECON 201, ECON 202, ECON 351, ECON 352, and permission of the instructor or Department Chair.*
- ECON 492 Internship Research Paper** 3 cr.
Separately graded academic portion of the internship, required in conjunction with ECON 495. Graded A through F. The entire internship (492 and 495) is for a total of 15 credits for full-time interns and 9 credits for part-time interns. Variable. May be counted in the major/minor as an elective. *Corequisite: ECON 495.*
- ECON 494 Field Experience in Economics** 3 cr.
Supervised field experience for Economics majors and minors relating to operations in economic research, business economics, or governmental agencies. A detailed written and oral report on the experience is required. No more than one field experience may be applied towards graduation. Graded A-F. May be counted toward major/minor as an elective. Every semester. *Prerequisites: junior or senior standing; minimum of 12 hours in Economics; approval of the department internship committee.*
- ECON 495 Internship in Economics** 6 or 12 crs.
Guided work experience with an academic component. Work must be directly related to academic program. Full-time interns register for 12

credits and may not enroll in any other courses (except 492). Part-time interns register for 6 credits. This experiential component is graded P/F. May not be counted toward major or minor requirements. Variable. *Prerequisites: junior or senior status, in good academic standing; minimum of 12 hours in economics; submission of a completed Internship Agreement Form to the departmental internship director prior to registration. Corequisite: ECON 492.*

ECON 499 Individual Problems in Economics 1-6cr.
Individual research and formal report on a major topic not covered in regular course. Proposal must be submitted prior to registration. Variable. *Prerequisites: senior standing, at least 15 hours of economics, and consent of the Department Chair.*

Educational Professions

EDUC 100 Career Analysis in Education 1 cr.
Analysis of education in America and the potential roles to be played both in schools and in the wider community. A preliminary self assessment of how the students' interests and abilities match the demands of the educational profession. Portfolio development. Observations with reflections. Every semester. *Required: Taken prior to admission to Phase I. Recommended: Taken within first 2 semesters at Frostburg State University.*

ECED 150 Early Childhood Foundations 3 cr.
Introduction to profession of early childhood education. Includes growth and development of young children. Examines historic, theoretical and philosophical underpinnings of current early childhood programs. Explores play, learning environments and curriculum. Looks at the context of families and communities. Requires a reflective journal, field observations, and portfolio development. Every semester. *Taken prephase I or during Phase I of ECE/ELEM major's professional sequence as part of ECE specialization.*

EDUC 200 Phase I Teaching and Professional Assessment Laboratory 1 cr.
Through a series of short video-taped teaching sessions, students acquire skill in assessing their own strengths and weaknesses as teachers. Students will write instructional objectives, prepare lesson plans, and teach a series of ten minute lessons to their peers. Includes screening for selected teaching proficiencies. This course is required in all teacher education programs. Graded P/F. Every semester. *Prerequisite: Admission to Phase I. Corequisite: Enrollment in EDUC 202.*

EDUC 201 Students, Teachers, and Learning Environments 3 cr.
A study of students, teachers, and learning environments including the philosophical and historical foundations of the American educational system. Basis for further study in education including topics on legal and ethical issues and diversity. Controlled observations in educational settings. Every semester. May be taken concurrently with EDUC 200/202. *Prerequisite: completion of 30 hours.*

EDUC 202 Foundations of Learning and Instruction 3 cr.
The learning and teaching process in the American educational system. Human growth and development of students birth-21; learning theories and styles; instructional strategies and adaptations. Controlled observations in educational settings. Every semester. Concurrent enrollment required in EDUC 200. May be taken concurrently with EDUC 201. *Prerequisite: Admission to Phase I.*

EDUC 210 Educational Psychology 3 cr.
General principles of the psychology of learning and teaching; emphasis on laws of learning, conditions of learning, efficient learning, improving study habits, diagnosis and evaluation of the learner.

EDUC 290 Field Experiences in Education 1 to 3 cr.
Supervised field experiences for teacher education students in school and non-school settings focusing on specific problems identified by students. Repeatable to 6 credits. Graded P/F. Every semester. *Prerequisite: permission of instructor, with written proposal for a field problem approved prior to registering.*

ECED 293 Early Childhood Learning Environment 3 cr.
Examination and assessment of developmentally appropriate environments for young children birth to age eight. Includes planning of physically and psychologically safe and healthy learning environments. Taken during Phase I of ECE/ELEM major's professional sequence as part of ECE specialization. Every semester. *Prerequisite: Admission to Phase I or permission of Department Chair.*

EDUC 300 Phase II Teaching & Professional Assessment Laboratory .5 cr.
Video-taped teaching segments with students in school settings. Skills practice and analysis using various teaching models, classroom management techniques, and assessment practices. Participation in seminars on current topics in education. Screening for selected academic and instructional proficiencies. Graded P/F. Every semester. *Prerequisite: admission to Phase II and concurrent enrollment in Phase II methods and appropriate field work experiences.*

ELED 303 Integrated Curriculum & Methodology I: Curriculum Focus 4 cr.
Component course of the 13 credit integrated Block I, Phase II of the elementary teacher education program. Block I courses center on the acquisition and integration of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learning, and career awareness are modeled and utilized as integrating threads. Focuses on the study of the elementary school curriculum. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program.*

ELED 304 Integrated Curriculum & Methodology I: Methodology Focus 4 cr.
Component course of the 13 credit integrated Block I, Phase II of the elementary teacher education program. Block I courses center on the acquisition and integration of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learning, and career awareness are modeled and utilized as integrating threads. Focuses on the study of teaching methodology. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program.*

ELED 305 Integrated Curriculum & Methodology I: Diversity Focus 4 cr.
Component course of the 13 credit integrated Block I, Phase II of the elementary teacher education program. Block I courses center on the acquisition and integration of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learning, and career awareness are modeled and utilized as integrating threads. Focuses on the study of teaching diverse classroom populations. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program.*

ELED 306 Integrated Curriculum & Methodology I: Clinical Component 1 cr.
Clinical component of the 13 credit integrated Block I, Phase II of the elementary teacher education program. Block I courses center on the acquisition and integration of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learn-

ing, and career awareness are modeled and utilized as integrating threads. Focuses on the clinical observation and application of the concepts included in Block I courses. The clinical experiences are provided in the Teaching Laboratory and in area schools. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program.*

ELED 307 Block 1 Clinical and Professional Assessment Component 2 cr.

Supervised assisting at the early childhood, elementary, and middle school levels. Joint supervision by school system and university personnel. Daily, full day clinical experience. Graded P/F. Every semester. *Prerequisite: Admission to Phase II.*

EDUC 308 Art Education Methods for the Secondary Teacher 3 cr.
Examination of curriculum goals, content, and organization of secondary art education. Theories of visual development and artistic behavior in the adolescent and young adult; materials, resources, and processes for teaching art; classroom management, computer-assisted instruction and integrated technology. Two hr. lecture, 2 hr. lab. Fall only. *Prerequisite: admission to Phase II or permission of Department Chair; EDUC 308 and EDUC 392 recommended concurrently.*

EDUC 309 Art Education Methods for the Elementary Teacher 3 cr.
Examination of curriculum goals, content, and organization of elementary art education. Theories of visual development and artistic behavior of the child; materials, resources, and processes for teaching art; classroom management, computer-assisted instruction and integrated technology. Two hr. lecture, 2 hr. lab. Fall only. *Prerequisite: admission to Phase II or permission of Department Chair; EDUC 309 and EDUC 392 recommended concurrently.*

SCED 310 Secondary Methods and Curriculum 3 cr.
Evolution of the philosophy of secondary education. Current curricula, planning, issues, and instructional methodologies in all secondary teaching areas. Required for secondary education majors. Spring only. *Prerequisite: Phase II admission.*

SCED 311 English in the Secondary School 3 cr.
Subject methods course required for secondary certification in teaching English. Modern trends in curriculum and instruction. Fall only. *Prerequisite: Phase II admission or permission of Department Chair; EDUC 391 recommended concurrently.*

SCED 314 Mathematics in the Secondary School 3 cr.
Subject methods course required for secondary certification in teaching mathematics. Modern trends in curriculum and instruction. Fall only. *Prerequisite: Phase II admission or permission of Department Chair; EDUC 391 recommended concurrently.*

SCED 315 Methods of Teaching Modern Foreign Languages 3 cr.
A general methods course for foreign-language majors seeking certification at the secondary level or elementary education majors seeking certification in teaching a language at the elementary level. (Does not certify a secondary language major to teach the elementary level.) Fall only. *Prerequisites: Phase II admission or permission of Department Chair; EDUC 391 recommended concurrently.*

SCED 316 Business Education in the Secondary School 3 cr.
Methods of teaching shorthand, transcription, typing, accounting, business machines, and data processing. Curricular planning, instructional strategies, program organization, work experiences, careers and job requirements. Business career opportunities, job requirements, student organizations, and business surveys. Proficiency in the skill areas required. Fall only. *Prerequisites: Phase II admission or permission of Department Chair; EDUC 391 recommended concurrently.*

REED 317 Content Area Reading 3 cr.
Identification of the special reading demands in content areas and development of appropriate instructional activities. The reading process as it relates to content area learning. Research, best practices, and instruc-

tional strategies. Required for all secondary and K-12 approved programs. Every semester. *Prerequisite: appropriate Phase admission.*

REED 318 Reading and Writing Connections 3 cr.
Reading and writing activities in daily instruction. The role and use of authentic assessments in determining student reading performance and selection of materials appropriate to student ability levels. Taken with Secondary Block. Spring only. *Prerequisite: Phase II admission.*

SCED 319 Science in the Secondary School 3 cr.
Subject methods course required for secondary certification in teaching science. Modern trends in curriculum and instruction. Fall only. *Prerequisites: Phase II admission or permission of Department Chair; EDUC 391 recommended concurrently.*

SCED 320 Social Studies in the Secondary School 3 cr.
Subject methods course required for secondary certification in teaching social studies. Modern trends in curriculum and instruction. Fall only. *Prerequisites: Phase II admission or permission of Department Chair; EDUC 391 recommended concurrently.*

REED 323 Process and Acquisition of Reading 3 cr.
Process of language development, including impact of phonemic awareness, and how the brain responds to reading acquisition. Practical applications of research in language development, acquisition, and use. Understanding of the role of experiential background, prior knowledge, motivation, and personal significance to emerging readers. Every semester. *Prerequisite: Phase I admission.*

EDUC 346 Educational Technology Lab I 1 cr.
Experiences and practice in using technology to support any curriculum. Experiences are assimilated into professional practice. Emphasis on use of technology within the context of accomplishing authentic tasks. Every semester. May be satisfied by portfolio and performance assessment examination. *Prerequisite: Phase I admission or permission of department.*

EDUC 354 General Music Methods in the Elementary School 3 cr.
Music teaching, emphasizing the elementary school level: materials and techniques of instruction for general music classes; general educational theories and their relevance to music education; computer-assisted instruction and integrated technology; facility with accompanying folk instruments; and exposure to the Orff, Kodaly, and Dalcroze approaches to music education. Required in junior year of all students desiring certification in music. *Prerequisite: admission to Phase II of the Teacher Education Program and junior standing in the Music program.*

EDUC 355 General Music Methods in the Secondary School 3 cr.
Music teaching emphasizing the secondary school level: materials and techniques for general music classes; computer-assisted instruction and integrated technology; facility with accompanying folk instruments; historical and philosophic foundations of music education; and program development and instructional design. Required in junior year of all students desiring certification in music. *Prerequisites: EDUC 354 and admission to Phase II of the Teacher Education Program.*

SPED 361 Adapting Instruction in Diverse Classrooms 3 cr.
An understanding of the instructional and social development needs of the disabled and non-disabled students in inclusive classrooms. Special attention to collaboration, technology, legislation, educational programming, instructional strategies, inclusion models, and current research related to the students enrolled in secondary school inclusion programs (middle/senior high school) and K-12 programs. Every semester. *Prerequisite: Phase II admission.*

EDUC 376 Special and Multicultural Education 3 cr.
Characteristics of exceptional children. Understanding how exceptionalities, American culture, race, ethnicity, gender, socio-economic class, religion, age, language, and intellectual ability influence learning. Historical and legal influences on American schools and community agen-

cies. Applicable teaching methods. Controlled observations included. Every semester. *Prerequisite: Phase I admission.*

EDUC 391 Teaching Internship I: Secondary Education 2 cr.
Initial internship practicum at secondary school level. Joint supervision by school system and university personnel. Some assignments and responsibilities coordinated with concurrent secondary block courses. Minimum length of practicum equal to 30 half-days (120 clock hours). Graded P/F. Fall only. *Prerequisites: Successful completion of first semester of Phase II courses and concurrent enrollment in remaining Phase II course requirements.*

EDUC 392 K-12 Field Experience 1 to 2 cr.
Teacher assistantship in elementary and secondary settings. Requires 60 hours of in-school aide experience at each level. Assignments coordinated with other Phase II courses. Repeatable. Graded P/F. *Prerequisite: Phase II admission.*

EDUC 401 Nursery-Eighth Grade Field Experiences I 1½ cr.
Teacher assistantship in N-8 school setting. Requires 90 hours of in-school experience. Assignments coordinated with Block I methods courses. Graded P/F. Every semester. *Prerequisites: Phase II admission and concurrent enrollment in Block I.*

EDUC 402 Nursery-Eighth Grade Field Experiences II 1½ cr.
Teacher assistantship in N-8 school setting. Requires 90 hours of in-school experience. Assignments coordinated with Block II methods courses. Graded P/F. Every semester. *Prerequisites: Phase II admission and concurrent enrollment in Block II.*

EDUC 403 Assessment and Management of Learning 4 cr.
Design, implementation, and use of various assessment instruments. Qualitative analysis of student performance. Assessment of students, instructional activities, and environments. Communication of assessment data. Elements of developmentally appropriate classroom management. Management strategies for student behavior, curriculum, materials, and resources. *Prerequisite: successful completion of Block I.*

ELED 403 Assessment and Management of Learning 4 cr.
Component course of the 13 credit integrated Block II, Phase II of the elementary teacher education program. Block II courses center on the extension and refinement of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learning, and career awareness are modeled and utilized as integrating threads. Focuses on the evaluation of students and instructional activities. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program and recommendation of Phase I, Block I faculty team.*

ELED 404 Integrated Curriculum & Methodology II: Organization & Management Focus 4 cr.
Component course of the 13 credit integrated Block II, Phase II of the elementary teacher education program. Block II courses center on the extension and refinement of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learning, and career awareness are modeled and utilized as integrating threads. Focuses on the study of elementary school organization and management strategies. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program and recommendation of Phase I, Block I faculty team.*

EDUC 405 Leadership 2 cr.
Educational leadership in schools, communities, and professional organizations. Professionalism emphasized. Every semester. *Prerequisite: Phase III admission.*

ELED 405 Integrated Curriculum & Methodology II: Leadership Focus 4 cr.

Component course of the 13 credit integrated Block II, Phase II of the elementary teacher education program. Block II courses center on the extension and refinement of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learning, and career awareness are modeled and utilized as integrating threads. Focuses on instructional leadership in the elementary school. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program and recommendation of Phase I, Block I faculty team.*

EDUC 406 Leadership Seminar 2 cr.
Reflective self and peer evaluation of teaching performance in the classroom as a foundation for exploration of the leadership roles professional teachers are expected to play in the classroom, school, community, and profession. *Prerequisite: Phase III admission, concurrent enrollment in internship.*

ELED 406 Integrated Curriculum & Methodology II: Clinical Component 1 cr.

Clinical component of the 13 credit integrated Block II, Phase II of the elementary teacher education program. Block II courses center on the extension and refinement of basic concepts, skills, and information related to the teaching of mathematics, science, language arts, and social studies. The major program themes of technology, integration, teaming, performance-based instruction, professionalism, diversity, service learning, and career awareness are modeled and utilized as integrating threads. Focuses on the clinical observation and application of the concepts included in Block II courses. The clinical experiences are provided in the Teaching Laboratory and in area schools. Fall, Spring. *Prerequisite: Admission to Phase II of the Teacher Education Program and recommendation of Phase II, Block I faculty team.*

GUCO 406 Introduction to Guidance 3 cr.
History and philosophy of Guidance programs; the role, organization, and methods of guidance.

EDUC 410 Teacher Intern Seminar: N-8 3 cr.
A study of the research and materials for various models of teaching with the intent of securing objective feedback for making a sophisticated analysis of curriculum impact, teaching methods, and teacher/student interaction. Graded P/F. Every semester. *Prerequisite: Phase III admission.*

REED 416 Reading and Language 3 cr.
Practical applications of research in language development, acquisition, and use. Relevant to all education majors. Every semester. *Prerequisite: Phase II admission.*

REED 420 Assessment for Reading Instruction 3 cr.
Understanding of the use of national, state, local, and classroom reading assessment data to make ongoing instructional modifications as a strategy for prevention and intervention. Understanding of a variety of reading assessments and curriculum adjustments. Communicating assessment data about individual student reading performance to appropriate sources. Every semester. *Prerequisite: Phase III admission or permission of the department.*

REED 422 Practicum in Reading Instruction 3 cr.
Laboratory experience in correcting reading problems. Diagnosis and program planning. Tailoring of materials and techniques to the particular child. *Prerequisite: REED 420.*

REED 425 Materials and Motivations for Reading 3 cr.
Support for long term motivation of developing readers within a framework of inquiry. Experience a variety of texts to be used in classes when reading for literary experience, reading to perform a task, and reading for information. Apply strategies for selecting materials, for retrieving materials, and for evaluating materials. Understanding of accessibility,

variety of media, multicultural materials, text features, and oral and written responses to literature. Knowledge of the role of parents in supporting reading programs. Every semester. *Prerequisite: Block II admission or permission of the department.*

EDUC 429 The School and Community 3 cr.
Role and participation of the community in public education today. Cooperation between public school and nonschool educative agencies in the community. Participation in a field research project required.

EDUC 430 Desktop Publishing for Educators 3 cr.
Use a computer for publishing materials. Learn fundamental principles of publishing design. Learn how to produce published materials that can be used in the classroom. Design desktop publishing projects that will involve K-12 students. Plan for integration of desktop publishing into the curricula.

ECED 431 Early Childhood Education I Curriculum Development & Implementation 3 cr.
Philosophy and function of early childhood education curriculum. Analysis of children's needs; planning and implementing a balanced program. Taken Phase II Block I of ECE/ELEM major's professional sequence as part of ECE specialization. Every semester. *Prerequisite: Phase II admission or permission of the department.*

EDUC 432 Hypermedia & Multimedia: Educational Applications 3 cr.
Learn about hypermedia and multimedia. Become familiar with using a computer for hypermedia applications. Work with text, graphics, video, and sound to create presentations and information exploration materials which incorporate various approaches to teaching and learning. Design hypermedia projects that will involve K-12 students. Plan for integration of hypermedia into the curriculum.

EDUC 434 LOGO: Ed. Programming & Instructional Techniques 3 cr.
Learn about Logo as a language for learning about computers, computer programming, and thinking. Emphasis will be on learner-controlled and learner-directed explorations of intellectual problems of interest.

ECED 438 Early Childhood Classroom Management 3 cr.
For the early-childhood teacher: advanced teaching skills in nurturing the young child's social experiences, self-discipline, independence, and creativity; arranging play experiences, organizing physical space, communicating with children, child study.

REED 440 Children's Literature 3 cr.
Content and form of children's literature in books other than school textbooks. How to evaluate literature and use literary materials in teaching.

EDUC 441 Classroom Discipline Strategies 3 cr.
For undergraduates who have had aiding or teaching internship and for practicing teachers. Emphasis on understanding child behavior in school. Democratic classroom setting. *Prerequisite: Phase II completion.*

ECED 442 Administration & Supervision of Early Childhood Programs 3 cr.
Administrative and supervisory responsibilities for the early-childhood educator in providing quality programs for young children. *Prerequisite: permission of instructor.*

ECED 443 Early Childhood Education II: Adults in the Child's World 3 cr.
The early-childhood educator's influence on and collaboration with the child's caregivers; the use of local, state, and national resources to meet child, family, and community educational needs. Taken Phase II Block II of ECE/ELEM major's professional sequence as part of ECE specialization. Every semester. *Prerequisite: Successful completion of ECED 431 or permission of department.*

EDUC 444 Cooperative Learning Workshop: Level I 3 cr.
A study of cooperative learning through an analysis of the underlying

theory and observation; planning, and implementation of cooperative learning activities. Summer.

EDUC 445 Middle School Curriculum and Methods 3 cr.
The middle school movement; the middle school student and curriculum; teaching in the middle school; middle school organization. Every semester. *Prerequisite: Phase II admission or permission of Department Chair.*

EDUC 446 Using Databases for Critical Thinking 1 cr.
Use databases in learning to organize, access, manipulate, and evaluate information. Learn to find and interpret information, find patterns, and make inferences based on established patterns. Develop techniques for using databases in elementary and secondary curricula.

EDUC 447 Educational Technology Lab II 1 cr.
Experiences and practice in using technology to support any curriculum. Experiences are assimilated into professional practice. Emphasis on use of technology within the context of accomplishing authentic tasks. Extension and refinement of Lab I experiences. Every semester. *Prerequisite: Phase II admission.*

EDUC 448 Educational Technology Lab III 1 cr.
Experiences and practice in using technology to support any curriculum. Experiences are assimilated into professional practice. Emphasis on use of technology within the context of accomplishing authentic tasks. Extension and refinement of Lab II experiences. Every semester. *Prerequisite: appropriate phase admission and successful completion of Educational Technology Lab II.*

REED 450 Classroom Techniques in Diagnosis & Correction of Reading Difficulties 3 cr.
Lecture and laboratory to diagnose reading difficulties and plan corrective programs using a variety of materials and techniques in tutoring. Summer only. *Prerequisite: REED 420 and 422.*

EDUC 454 Microcomputer Application in Education 3 cr.
Introductory course to familiarize educators with microcomputers. Microcomputers as a teaching tool; innovations, systems of instruction, model programs, matching software to school children's needs. Every semester. *Prerequisite: Phase II admission or permission of instructor.*

SPED 461 Characteristics of Exceptional Children 3 cr.
Etiology, diagnosis, physical, emotional, and social characteristics of exceptional children, including the gifted, retarded, and physically handicapped.

SPED 462 Intro. to the Education of Exceptional Children 3 cr.
Understanding the educational needs of exceptional children; preventive and remedial education.

SPED 463 Teaching Children with Special Needs 3 cr.
Observation, identification, and management of children with mild to moderate learning problems. *Prerequisite: permission of instructor.*

ELED 470 General Curriculum 3 cr.
Planning, constructing, and organizing the school curriculum; types of curricula and current applications. Every semester. *Prerequisite: Phase II admission or permission of Department Chair.*

ELED 471 Mathematics Curriculum and Methods: Integrated Block 2 cr.
Planning, constructing, and organizing curriculum; types of curricula. Methods, materials, and content for teaching Mathematics. Every semester. *Prerequisite: admission to Phase II.*

ELED 472 Language Arts Curriculum and Methods: Integrated Block 2 cr.
Planning, constructing, and organizing curriculum; types of curricula. Methods, materials, and content for teaching Language Arts. Every semester. *Prerequisite: admission to Phase II.*

REED 473 Reading Instruction 3 cr.
Knowledge of best practices and instructional strategies which focus on the purposes for reading. How to use a balanced program of phonics, semantics, and syntactics in teaching reading. Methods, materials, and content for teaching reading in grades N-8. Knowledge of early identification and intervention strategies for low achieving readers. Every semester. *Prerequisite: Phase II admission.*

ELED 474 Science Curriculum and Methods: 2 cr.
Integrated Block
Planning, constructing, and organizing curriculum; types of curricula. Methods, materials, and content for teaching Science. Every semester. *Prerequisite: admission to Phase II.*

ELED 475 Social Studies Curriculum and Methods: 2 cr.
Integrated Block
Planning, constructing, and organizing curriculum; types of curricula. Methods, materials, and content for teaching Social Studies. Every semester. *Prerequisite: admission to Phase II.*

SPED 481 The Gifted Learner 3 cr.
Study of recent research on characteristics, needs, and problems of gifted learners; model programs; future possibilities. *Prerequisite: PSYC 150 or EDUC 201 or permission of instructor.*

SPED 482 Curriculum for the Gifted Learner 3 cr.
Theoretical and practical approaches to teaching gifted learners; constructing unique plans for each teacher's needs. For those who will deal with gifted learners. *Prerequisite: at least one course in curriculum.*

EDUC 490 Special Topics in Education 1/2 to 6 cr.
Special workshop on a current topic, as arranged.

ELED 494 Teaching Internship II: N-8 6 cr.
Supervised practicum in teaching at the early childhood, elementary, and middle school levels. Joint supervision by school system and university personnel. Daily, full day clinical experience. When taken during fall semester, includes a one-week beginning of the school year experience. Graded P/F. Every semester. *Prerequisite: successful completion of Block I.*

ELED 495 Teaching Internship II: N-8 Programs 12 cr.
Supervised practicum in teaching at the early childhood, elementary, and middle school levels. Joint supervision by school system and university personnel. Daily, full day clinical experience. When taken during fall semester, includes a one-week beginning of the school year experience. Graded P/F. Every semester. *Prerequisite: successful completion of Internship I and Phase III admission.*

SCED 496 Teaching Internship II: Secondary Education 12 cr.
Supervised practicum in teaching at secondary school level. Joint supervision by school system and university personnel. Daily, full day for one semester. Graded P/F. Every semester. *Prerequisite: Phase III admission or permission of Department Chair.*

EDUC 497 or PHEC 497 Teaching Internship: K-12 Programs 12 cr.
Supervised practicum in teaching in elementary and secondary schools. Joint supervision by school system and university personnel. Daily, full day for one semester. Graded P/F. Every semester. *Prerequisite: Phase III admission or permission of Department Chair.*

EDUC 499 Individual Problems in Education 1 to 3 cr.
Independent study under supervision. Research paper on special topic. Requires proposal approval through Dept. of Educational Professions prior to registering. Repeatable to 6 credits. Every semester, summer.

Engineering

Engineering Sciences

ENES 100 Introduction to Engineering Design 3 cr.
FSU Course. Introduction to the engineering design process, computer software for word processing, spreadsheet, CAD and communication skills. Students work as teams to design and build a project. Every semester.

ENES 102 Statics 3 cr.
FSU Course. The equilibrium of stationary bodies under the influence of various kinds of forces. Forces, moments, couples, equilibrium, trusses, frames and machines, beams and friction. Vector and scalar methods are used to solve problems. Spring. *Prerequisites: MATH 226 and PHYS 261; Corequisites: MATH 227 and PHYS 262.*

ENES 220 Mechanics of Materials 3 cr.
FSU Course. Distortion of engineering materials in relation to changes in stress or temperature. Geometry of internal strain and external displacement. Application to beams, columns, shafts, tanks and other structural machine and vehicle members. Fall. *Prerequisites: ENES 102, MATH 227, PHYS 262. Corequisite: MATH 228.*

ENES 221 Dynamics 3 cr.
FSU Course. Systems of heavy particles and rigid bodies at rest and in motion. Force-acceleration, work-energy and impulse-momentum relationships. Motion of one body relative to another in a plane and in space. Fall. *Prerequisites: PHYS 262, ENES 102, MATH 228.*

Electrical Engineering

** For course descriptions of elective courses available in electrical engineering, please refer to the Clark School of Engineering catalog of the University of Maryland, College Park.

ENEE 114 Programming Concepts for Engineers 4 cr.
FSU Course. Three hours of lecture and two hours of recitation per week. Principles of software development, high level languages, compiling and linking, pseudo-code, input/output, data types and variables, operators and expressions, conditionals and loops, functions, arrays, pointers, structure data types, memory allocation, introduction to algorithms, software projects, debugging, documentation. Programs will use the C language. Spring.

ENEE 204 Basic Circuit Theory 3 cr.
FSU Course. Basic circuit elements: resistors, capacitors, inductors, sources, mutual inductance and transformers; their I-V relationships. Kirchoff's Laws. DC and AC steady state analysis. Phasors, node and mesh analysis, superposition, theorems of Thevenin and Norton. Transient analysis for first- and second-order circuits. Spring. *Prerequisite: PHYS 263. Corequisite: MATH 432.*

ENEE 206 Fundamental Electric & Digital Circuit Laboratory 2 cr.
FSU Course. Introduction to basic measurement techniques and electrical laboratory equipment (power supplies, oscilloscopes, voltmeters, etc.). Design, construction, and characterization of circuits containing passive elements, operational amplifiers, and digital integrated circuits. Transient and steady-state response. This course is prerequisite to all upper level ENEE laboratories. Spring. *Prerequisite: ENEE 244. Corequisite: ENEE 204.*

ENEE 241 Numerical Techniques in Engineering 3 cr.
FSU Course. Introduction to error analysis, conditioning and stability of algorithms. Numerical solution of nonlinear equations. Vector spaces and linear transformations. Matrix algebra. Gaussian elimination. LU factorization, matrix inversion. Similarity transformations and diagonalization. Iterative computation of eigenvalues. Interpolation; splines; data fitting. Numerical integration. Fall. *Prerequisite: ENEE 114, MATH 227. Corequisite: MATH 228.*

ENEE 244 Digital Logic Design 3 cr.
FSU Course. Gates, flip-flops, registers and counters. Karnaugh map simplification of gate networks. Switching algebra. Synchronous sequential systems. PLA's. Elements of binary arithmetic units. Three hrs. lecture and one hr. discussion/recitation per week. Fall. *Prerequisite: ENEE 114.*

ENEE 302 Digital Electronics 3 cr.
UMCP Course. Large signal terminal characteristics of PN junction diodes, bipolar and MOSFET transistors. Digital electronics at transistor level: inverter, NAND, NOR AND, OR gates. CMOS and TTL logic. Combinatorial and sequential digital circuits, memory design. Circuit simulation with SPICE. Fall. *Prerequisite: ENEE 204 and completion of all lower-division courses in the EE curriculum.*

ENEE 306 Electronic Circuits Design 2 cr.
FSU Course. Students will design, construct and test analog and digital circuits at the transistor level. Bipolar and field effect transistors will be covered. Circuits designed will include common emitter and differential amplifiers, active filter, TTL and CMOS logic gates. Students should gain much of the background required for the design of modern microelectronic circuits. One lecture and three lab hours per week. Spring. *Prerequisite: ENEE 206 and ENEE 302.*

ENEE 312 Semiconductor Devices and Analog Electronics 3 cr.
UMCP course. The basic physical operation of P-N junction diodes, MOSFET's and bipolar transistors. Basic transistor circuit configurations (CE, CC, CB, CS, CD, CG). DC bias; small signal analysis. Simple multi-transistor circuits: diff-amp; current mirror. Frequency response. Spring. *Prerequisite: ENEE 302 and completion of all lower-division technical courses in the EE curriculum.*

ENEE 322 Signal and System Theory 3 cr.
UMCP Course. Concept of linear systems, state space equations for continuous systems, time and frequency domain analysis of signals and linear systems. Fourier, Laplace and Z transforms. Application of theory to problems in electrical engineering. Fall. *Prerequisites: ENEE 204 and MATH 432 and completion of all lower division technical courses in the EE curriculum.*

ENEE 324 Engineering Probability 3 cr.
UMCP Course. Axioms of probability, conditional probability and Bayes' rules, random variables, probability distribution and densities, functions of random variables, weak law of large numbers and central limit theorem. Introduction to random processes, correlation functions, spectral densities, and linear systems. Applications to noise in electrical systems, filtering of signals from noise, estimation, and digital communications. Spring. *Prerequisite: ENEE 322 and completion of all lower division technical courses in the EE curriculum.*

ENEE 350 Computer Organization 3 cr.
UMCP Course. Structure and organization of digital computers. Registers, memory, control and I/O. Data and instruction formats, addressing modes, assembly language programming. Elements of system software, subroutines, and their linkages. Fall. *Prerequisite: ENEE 244 and completion of all lower division technical courses in the EE curriculum.*

ENEE 381 Electromagnetic Wave Propagation 3 cr.
UMCP course. The electromagnetic spectrum: Review of Maxwell's equations; the wave equation potentials, Poynting's theorem, relationship between circuit theory and fields; propagation of electromagnetic waves in homogeneous media and at interfaces; transmission line theory, waveguides, radiation and antennas. Spring. *Prerequisite: PHYS 312 and completion of all lower-division technical courses in the EE curriculum.*

ENEE 417 Microelectronics Design Laboratory 2 cr.
FSU Course. Senior class capstone project laboratory. Students design and build fairly sophisticated circuits, mainly composed of discrete transistors and integrated circuits. Students may become involved in various projects designed to require that they synthesize from what they have learned in many of the disciplines in electrical engineering. Students gain

hands-on practical experience while learning how to use their knowledge and skills to design and build a device or system. One lecture and three hours of lab per week. Variable. *Prerequisites: ENEE 306 and ENEE 312 and completion of all lower division EE technical courses.*

ENEE 461 Control Systems Lab 2 cr.
FSU Course. Design criteria, characteristics and limitations of modern control systems. Sensors, feedback, PID Control. Servomechanisms, control of various physical quantities such as temperature, pressure, liquid level, etc. Computer-based process control. Errors in digital control systems. Students will gain hands-on experience through a design project to build and test a feedback control system for a real world application. One lecture and three hours of lab per week. Variable. *Prerequisites: ENEE 206 and ENEE 322 and completion of all lower-division technical courses in the EE curriculum.*

Mechanical Engineering

** For course descriptions of elective courses available in mechanical engineering, please refer to the Clark School of Engineering catalog of the University of Maryland, College Park.

ENME 232 Thermodynamics 3 cr.
FSU Course. Introduction to thermodynamics. Thermodynamic properties of matter. First and second law of thermodynamics, cycles, reactions, mixtures. Variable. *Prerequisites: PHYS 261 and 262.*

ENME 252 Electronics and Instrumentation I 3 cr.
FSU Course. Modern instrumentation. Basic circuit design, standard microelectronic circuits. Digital data acquisition and control. Signal conditioning. Instrumentation interfacing. Designing and testing of analog circuits. Laboratory experiments. Fall. *Prerequisite: PHYS 263.*

ENME 271 Numerical Methods in Mechanical Engineering 3 cr.
FSU Course. Introduction to computational tools for the solution of engineering problems. Generation of computer algorithms using software such as MATLAB, numerical analysis and generation of graphical displays. Computer simulation with user interaction. Two lectures and one computer lab per week. Spring. *Prerequisite: ENES 221.*

ENME 320 Thermodynamics 3 cr.
UMCP Course. Properties, characteristics and fundamental equations of gases and vapors. Application of the first and second laws of thermodynamics in the analysis of basic heat engines, air compression vapor cycles. Flow and non-flow processes for gases and vapors. Spring. *Prerequisites: PHYS 261 and PHYS 262.*

ENME 331 Fluid Mechanics 3 cr.
FSU Course. Principles of fluid mechanics. Mass, momentum and energy conservation. Hydrostatics. Control volume analysis. Internal and external flow. Boundary layers. Modern measurement techniques. Computer analysis. Laboratory experiments. Fall. *Prerequisites: ENES 221, ENME 232.*

ENME 332 Transfer Processes 3 cr.
FSU Course. The principles of heat transfer. Conduction in solids. Convection. Radiation. Modern measurement techniques. Computer analysis. Two hrs. lecture and two hrs. lab per week. Spring. *Prerequisite: ENME 331.*

ENME 351 Electronics and Instrumentation II 3 cr.
FSU Course. Continuation of ENME 252. Modern instrumentation. Basic circuit design, standard microelectronic circuits. Digital data acquisition and control. Signal conditioning. Instrumentation interfacing. Designing and testing analog circuits. Laboratory experiments. Spring. *Prerequisites: ENME 252 and PHYS 263.*

ENME 361 Vibration, Controls and Optimization I 3 cr.
UMCP Course. Fundamentals of vibration, controls, and optimization. Analysis and design in time, Laplace and frequency domains. Mathematical description of system response, system stability, control and

optimization. Optimal design of mechanical systems. Spring. *Prerequisites: ENES 220, ENES 221, and MATH 432.*

ENME 371 Product Engineering and Manufacturing 3 cr.
FSU Course. Business aspects of engineering product development. Relationship of design and manufacturing. Product specification. Statistical process control. Design team development. The development process. Fall. *Prerequisite: ENES 221.*

ENME 382 Engineering Materials & Manufacturing Processes 3 cr.
FSU Course. Basic material structures and properties. Mechanical behavior of materials. Manufacturing processes theory. Materials processing. Quality assurance. Laboratory experiments. Spring. *Prerequisite: ENES 220.*

ENME 392 Statistical Methods for Product & Process Develop. 3 cr.
UMCP Course. Integrated statistical methodology for the improvement of products and processes in terms of performance, quality and cost. Designed experimentation. Statistical process control. Software application. Laboratory activities. Fall. *Prerequisite: MATH 228.*

ENME 462 Vibration, Controls and Optimization II 3 cr.
UMCP Course. Continuation of ENME 361. Fundamentals of vibration, controls, and optimization. Analysis and design in time, Laplace and frequency domains. Mathematical descriptions of system response, system stability, control and optimization. Optimal design of mechanical systems. Fall. *Prerequisites: ENME 351 and ENME 361.*

ENME 472 Integrated Product and Process Development II 3 cr.
FSU Course. Integration of product development with the development process. Design strategies. Product architecture. Design for manufacturing. Selection of materials. Design for assembly. Spring.

English

Writing

ENGL 100 Publication Practicum 1-2 cr.
Writing for and editing the campus student newspaper or literary magazine. Open to all students. (1-2 credits per semester: repeatable to 4 credits). Newspaper section, fall and spring; Literary magazine section, spring. Graded P/F. *Prerequisite: previous journalism experience or course work or concurrent registration in a journalism course or submission of writing samples.*

ENGL 101 Freshman Composition 3 cr.
Development of intermediate skills in argumentative writing based on reading for general audiences. Preparation of essay exams and short papers. Every semester. *Basic University Requirement. Students may not withdraw unless withdrawing from the University.*

ENGL 111 Honors: Freshman Composition 3 cr.
Development of intermediate skills in writing based on readings for general audiences. Preparation for honors-level courses. Every semester. *Basic University Requirement. Prerequisite: enrollment in the Honors Program.*

ENGL 300 Critical Writing About Literature 3 cr.
Introduction to literary theory to develop critical perspectives on literary works and provide flexible writing strategies. Advanced writing about literature. Required of English majors and minors. Prior literature at 200-level required. Readings involve literary analysis and criticism. Every semester. *Prerequisite: C or better in ENGL 101 or 111. May substitute for Advanced Composition (ENGL 308, 309, 310) as Basic University Requirement.*

ENGL 308 Social Sciences Advanced Composition 3 cr.
Development of advanced skills in writing based on reading for social science audiences. Preparation of extended papers; attention to research tools and documentation. Students may receive credit for only one of the

following: 308, 309, 310 or 312. Every semester. *Prerequisites: C or better in ENGL 101 or 111; and at least 42 credits or permission of Chair. Basic University Requirement.*

ENGL 309 Advanced Composition: Humanities 3 cr.
A special advanced composition course which fulfills all of the reading and writing requirements of English 308 and 310, but centers research on topics appropriate to the humanities. Development of advanced writing skills. Extensive and research-based papers; attention to research tools and documentation. Students may receive credit for only one of the following: 308, 309, 310, or 312. Fall only. *Prerequisites: C or better in English 101 or 111; and at least 42 credits or permission of instructor. Basic University Requirement.*

ENGL 310 General Advanced Composition 3 cr.
Development of advanced skills in writing. Students may receive credit for only one of the following: 308, 309, 310, or 312. Every semester. *Prerequisites: C or better in ENGL 101 or 111; and at least 42 credits or permission of Chair. Basic University Requirement.*

ENGL 312 Honors: Advanced Composition 3 cr.
Development of advanced skills in writing. Both reading and writing assignments more challenging than those in other Advanced Composition courses (ENGL 308, 310). Variable. *Basic University Requirement. Prerequisites: C or better in ENGL 101 or ENGL 111, at least 42 credits, and enrollment in Honors Program.*

ENGL 330 Business Writing 3 cr.
Basic writing for business and para-professional occupations. Writing resumés, job applications, memos and reports, and other kinds of business writing. Every semester. *Prerequisites: C or better in ENGL 101 or 111; and at least 42 credits or permission of Chair. May substitute for Advanced Composition (ENGL 308, 309, 310) Requirement.*

ENGL 334 Creative Writing: Fiction 3 cr.
Major elements of fiction writing: style, characterization, point of view, structure, pacing, conflict. Class critiques of student work. Every semester. *Prerequisite: C or better in ENGL 101 or 111.*

ENGL 335 Creative Writing: Poetry 3 cr.
Major elements of poetry: imagery, metaphor, theme, form. Both lyric and narrative poetry. Class critiques of student work. Every semester. *Prerequisite: C or better in ENGL 101 or 111.*

ENGL 336 Journalistic Writing 3 cr.
Introduction to the newspaper industry, effective newsgathering, and the specialized formats and style of straight news and feature stories. Communication and promotional activities of the journalist-turned-public-relations professional. Every semester. *Prerequisite: C or better in ENGL 101 or 111.*

ENGL 338 Technical Writing 3 cr.
Principles and practice of writing related to science, industry, and government. Effective style, organization, and mechanics of writing reports. Every semester. *Prerequisites: C or better in ENGL 101 or 111; and at least 42 credits or permission of Chair. May substitute for Advanced Composition (ENGL 308, 309, 310) as Basic University Requirement.*

ENGL 339 Scientific Writing 3 cr.
Introduction to formats, prose, and style specifications for Natural Science curricula. Focuses on language, research, critical analysis, and interdisciplinary impact of scientific discoveries. Variable. *Prerequisites: C or better in ENGL 101/111; at least 42 credits or permission from Chair. May substitute for Advanced Composition (ENGL 308, 309, 310) as Basic University Requirement.*

ENGL 360 Creative Nonfiction 3 cr.
Merging of the skills of storytelling and reporting to write personal essays and literary journalism. Fall only. *Prerequisite: ENGL 334, 335, or 336.*

- ENGL 401 Writing for Television** 3 cr.
Introduction to the principles and techniques of script writing for video production. Team and individual writing of scripts, both documentary and fiction. Variable. *Prerequisites: C or better in ENGL 101/111 and a 300-level writing course, or permission of instructor.*
- ENGL 402 Editing and Production** 3 cr.
Design, layout, and editing techniques for professional publications. Reinforcement of copy editing and proofreading skills. Spring, even-numbered years. *Prerequisite: ENGL 308, 309, 310, 330 or 338.*
- ENGL 430 The Composing Processes** 3 cr.
A survey of theory and research on the composing processes. Every semester. *Prerequisite: 6 hrs. of writing courses, including one from the 300 writing series offered by the English department.*
- ENGL 434 Advanced Fiction Writing** 3 cr.
Continued study of fiction writing through advanced individual work on short stories, a novel, or a novella. Within a workshop setting, students will work toward producing publishable-quality fiction and learn how to approach publishers and editors. 3 hrs. lecture/workshop. Fall only. *Prerequisite: ENGL 334 or permission of instructor. Not repeatable for credit.*
- ENGL 435 Advanced Poetry Writing** 3 cr.
Continued study of poetry writing through advanced individual work on lyrical, dramatic, and narrative poems. Within a workshop setting, students will work towards publishable-quality poetry. Spring only. *Prerequisite: ENGL 335.*
- ENGL 436 Advanced News and Feature Writing** 3 cr.
Skills in gathering and writing news. Techniques of New Journalism and writing for magazines. Spring only. *Prerequisite: ENGL 336 or permission of instructor.*
- ENGL 460 Form and Theory of Fiction and Poetry** 3 cr.
In-depth study of the techniques and methods employed by major writers of fiction and poetry, including consideration of structure, language, form, voice, theme, point of view, and character. 3 hrs. lecture/discussion. Fall only. *Prerequisite: ENGL 334 or 335.*
- ENGL 470 Senior Workshop** 3 cr.
An integrated senior-year experience that requires students to use their accumulated skills, knowledge, and creative impulses to complete a final creative writing portfolio of publishable quality. Course includes tutorials, workshops, marketing and submission of original work, and final readings. Spring only. *Prerequisite: ENGL 434 or 435.*
- ENGL 492 Internship Seminar** 1 cr.
Academic component of internship. Requires co-registration in 495. Graded A-F. Credit for 492 may be counted toward major. Every semester.
- ENGL 494 Mass Communication Practicum** 1-3 cr.
Supervised field experience for Mass Communication majors. Participation in the communication operations of a commercial, governmental, or educational organization. Repeatable but only 3 credits may be applied for the completion of the professional focus. Variable. *Prerequisite: Junior/senior standing, a minimum of 12 credits in Mass Communication courses, and permission of the instructor.*
- ENGL 495 Internship in English** 6 or 12 cr.
Experiential component of internship: guided work experience in conjunction with 492; must directly relate to academic program. Full-time interns register for 12 credits in 495 and 1 credit in 492 and may not enroll in other courses. Part-time interns register for 6 credits in 495 and 1 credit in 492. English 495 is graded P/F. The credit is not applicable toward the major. Every semester. *Prerequisites: junior or senior status, in good academic standing; submission of Internship Agreement form to internship director prior to registering; major or minor in English, or minor in Public Relations; additional prerequisite for internships in public relations or technical writing (see internship director).*
- ENGL 498 Field Experience in Writing** 3 cr.
Requires nine work-hours per week of practical writing experience in an approved, supervised, professional setting. Every semester. *Prerequisites: junior or senior standing. Permission of the department chair and a faculty coordinator. For Writing Minors only.*
- Literature and Language**
- ENGL 150 Introduction to Literature** 3 cr.
Critical reading of significant poetry, drama and fiction from a variety of cultures and eras, and continued development of expository writing skills. May not be taken by those who have already passed ENGL/MDFL 251. Every semester. *GEP LAC Group B. Also offered as MDFL 150.*
- ENGL 206 Modern American Drama** 3 cr.
An introductory survey of representative American plays and playwrights of the 20th century with attention to the evolution of Modern American Theatre and analysis of the efforts of the playwright and theatrical professionals. Fall, even-numbered years. *Prerequisite: ENGL 101 or 111 or equivalent. Also offered as THEA 206.*
- ENGL 221 Intro. to Literature/Intermediate Composition** 4 cr.
Critical reading of expository prose and significant poetry, drama, and fiction from a variety of cultures and eras, with emphasis on developing intermediate writing skills. Preparation of short papers and essay exams. Graded A-F. A passing grade (D or better) satisfies the general education, humanities distribution requirement for ENGL 150; separate waiver of ENGL 101 for students meeting competencies required for freshman composition (the credits for 101 may not, however, be purchased). Students in 221 may thus fulfill both the basic requirement of ENGL 101 and the liberal arts humanities distribution requirement of ENGL 150, or they may fulfill only one, or neither. Spring only. *Open only to students never enrolled in ENGL 101. Students may not withdraw unless withdrawing from the University.*
- ENGL 231 African American Literature** 3 cr.
Historical survey and critical examination of major African American writings from colonial times to the present, emphasizing oral and literary traditions and cultural contexts. Variable. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 250 Honors: Comparative Literature** 3 cr.
Literature generated by the cross-cultural interface of Western countries with those third-world areas that have reclaimed their national identities since World War II. Variable. *Prerequisite: acceptance into the Honors Program or permission of instructor. May substitute for ENGL 150 as GEP LAC Group B.*
- ENGL 260 British Literature: Beowulf to Present** 3 cr.
A survey of British literature from Beowulf to the present. Includes major works from each period to provide historical perspective. Designed for English majors and minors. Every semester. *Prerequisite: C or better in ENGL 101 or 111.*
- ENGL 261 American Literature: Colonial to Present** 3 cr.
A survey of American literature from colonial times to the present. Includes works from each period to provide historical perspective. Designed for English majors and minors. Every semester. *Prerequisite: C or better in ENGL 101 or 111.*
- ENGL 270 European & Neo-European Literature** 3 cr.
Works, in translation, important to European and Neo-European cultures, such as selections from the Old Testament, the literature of ancient Greece and Rome, Italian, French, Spanish, German, Russian, etc., literatures. Fall only. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 271 Asian & African Literature** 3 cr.
Including works, in translation, from Asian and African cultures, such as the major works of the Middle East, India, the African nations, China, and Japan. Spring only. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*

- ENGL 280 Mythology and Literature** 3 cr.
Greco-Roman literature, American Indian legends, and myths from diverse cultures examined in a literary and socio-cultural context. Variable. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 290 Topics in Language and Literature** 3 cr.
A selected aspect of language or literature. May be taken more than once for credit if subtitle is different. Variable. *English 101 or 111 must be taken concurrently with or prior to ENGL 290.*
- ENGL 303 American Romantic Literature** 3 cr.
Writings of Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman. Reference to literary, social, and intellectual backgrounds. Fall of odd-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 306 Introduction to English Linguistics** 3 cr.
A critical survey of traditional, structural, and transformational grammar. Every semester. *Prerequisite: C or better in ENGL 101 or 111.*
- ENGL 307 16th- and 17th-Century English Literature** 3 cr.
Poetry and prose from the Elizabethan age to 1660, excluding Milton. Narrative and lyric poetry (emphasizing the Metaphysicals), drama, and prose. Fall of even-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 313 English Romantic Literature** 3 cr.
Poetry and prose of English Romantic movement in the earlier 19th century. Attention to major poets, essayists, and novelists. Spring of odd-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 322 The Restoration and Augustan Age** 3 cr.
English literature from Dryden through Pope. Major poets, dramatists, essayists, and fiction writers. Spring of odd-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 323 Victorian Literature** 3 cr.
Poetry and prose of the later 19th century; attention to major poets, essayists, and novelists. Spring of even-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 332 The Age of Johnson** 3 cr.
Poetry and prose of the later 18th century. Attention to Johnson and Boswell, drama, and some major novels. Fall of odd-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 340 Shakespeare** 3 cr.
A selection from the histories, comedies, major tragedies, and problem plays or romances. Every semester. *Prerequisite: C or better in ENGL 101 or 111.*
- ENGL 352 American Colonial Literature** 3 cr.
American literature of the 17th and 18th centuries. Attention to social, intellectual, and literary history as reflected in colonial writings. Fall of even-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 404 Modern British Fiction** 3 cr.
British novels representative of major developments in literature from 1900 to the end of World War II. Fall of odd-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 407 American Fiction: 1865-1922** 3 cr.
American novels and short stories of the period, with special attention to literary history and the development of realism and naturalism. Spring of even-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 408 Modern and Post-Modern American Fiction** 3 cr.
American novels and short stories from the 1920's to the present from a variety of cultural and gender perspectives. Spring of odd-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 411 Chaucer and His Times** 3 cr.
The world of The Canterbury Tales and other English masterpieces of the high Middle Ages. Spring of even-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 416 History of the English Language** 3 cr.
From the beginning to contemporary usage; changes in sounds, grammatical and spelling forms, syntax, and vocabulary. Spring only. *Prerequisite: C or better in ENGL 101 or 111.*
- ENGL 418 Second Language Acquisition: Theory & Application** 3 cr.
Introduction to theories of how children and adults learn second languages, with application to conducting research or to teaching/tutoring children and adults who are second language learners (principally English as a second language). Fall of even-numbered years.
- ENGL 420 Adolescent Literature** 3 cr.
Definition, classification, and analysis of adolescent literature and its value. Contemporary and classical works appropriate for or written especially for adolescents. Spring only. *Prerequisite: 56 hrs. or permission of instructor.*
- ENGL 424 20th-Century British Poetry** 3 cr.
British poetry from Housman to the present, with emphasis on Yeats. Fall of even-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 426 Modern American Poetry** 3 cr.
From its antecedents in Whitman and Dickinson to contemporary poets, with emphasis on Frost and Eliot. Spring of even-numbered years. *Prerequisite: C or better in ENGL 101 or 111 or equivalent.*
- ENGL 431 World Drama I: Premodern** 3 cr.
World drama from the 5th Century B.C. Greeks to the late 19th century. Representative dramatists and forms from both the West and the East. Multicultural emphasis on the use and development of drama. Fall of even-numbered years. *Prerequisite: ENGL 150, 250/MDFL 150 or THEA 106 or permission of instructor. Also offered as THEA 431.*
- ENGL 432 World Drama II: Twentieth Century** 3 cr.
World drama during the twentieth century. Representative dramatists and forms from both the West and the East. Multicultural emphasis on the variety of dramatic forms. Spring of odd-numbered years. *Prerequisite: ENGL 150, 250/MDFL 150 or THEA 106 or permission of instructor. Also offered as THEA 432.*
- ENGL 440 Literature of the Environment** 3 cr.
Critical, multi-cultural and historical study of literature of the environment, emphasizing the variety of attitudes toward the land in essays and poetry. Fall, odd-numbered years.
- ENGL 450 Women and Literature** 3 cr.
A cross-cultural study of womanhood as portrayed by male and female writers over the centuries. Spring, even-numbered years.
- ENGL 480 Senior Seminar in English** 3 cr.
Integration of previous course material and student's own experience in the discipline for a critical analysis of a topic in literature. Topics will vary. Senior thesis required. Variable.
- ENGL 489 English Capstone** 1 cr.
Conversion of students' working portfolios, accumulated during their careers as English majors, into "best works" collections for professional application and departmental assessment purposes. Other assessment activities possible. Every semester. *Prerequisite: senior status.*
- ENGL 490 Selected Topics in English** 3 cr.
A select aspect or body of literature of limited scope and topical interest. Subject varies; see Academic Schedule for specific titles. Offered at variable intervals. Seniors only.

ENGL 499 Independent Study 1-3 cr.
Guided reading and/or writing projects. Variable. *Prerequisites: permission of the department chair and a faculty director, normally given only to majors of junior or senior standing with at least a B average in the major.*

Reading Improvement and Development

ENGL 105 Critical Reading 3 cr.
The reading process: development of literal comprehension and critical analysis in various content areas. Fall only. *Students required to enroll in this course based upon results of the reading placement test administered by the University may not withdraw unless withdrawing from the University.*

Environmental Humanities

HUMA 495 Project in Environmental Humanities 3-9 crs.
Guided field experience supplemented by appropriate readings and written reports leading to a substantial research paper or to a creative project. Both experiential and academic components are graded P/F. *Prerequisite: Completion of all other courses in the minor and permission of the Environmental Humanities Committee.*

Environmental Policy

EPOL 491 Seminar in Environmental Policy 3 cr.
Designed to synthesize course work in Environmental Policy. Required of students completing a minor in Environmental Policy. Students will select topics, make presentations, and participate in discussions. Variable. *Prerequisite: permission of coordinator.*

Foreign Languages & Literature

Intercultural Studies

MDFL 111 Intercultural Understanding 3 cr.
The study of the concept of Culture as well as its multiple manifestations and the case study of three diverse peoples. Team taught. Variable.

Special Topics

MDFL 190 Selected Topics in Foreign Lang. and Literature 3 cr.
A variable topic on Germanic, Romance, or Slavic culture or literature (in English translation) or a special area such as comparative grammar, etymology, or elementary philology. Specific title listed in course schedule. Variable.

MDFL 290 Selected Topics in Foreign Language & Literature 1-4 cr.
A variable topic on language, literature or culture. Specific title listed on course schedule. May be repeated for credit if topics are substantially different. Variable. *Prerequisite: permission of department.*

MDFL 390 Selected Topics in Foreign Language & Literature 1-4 cr.
A variable topic on language, literature or culture. Specific title listed on course schedule. May be repeated for credit if topics are substantially different. Variable. *Prerequisite: permission of department.*

Literature in Translation

MDFL 150 Introduction to Literature 3 cr.
Critical reading of significant poetry, drama, and fiction from a variety of cultures and eras, and continued development of expository writing skills. May not be taken by those who already passed ENGL/MDFL 251. GEP LAC Group B. Variable. *Also offered as ENGL 150.*

MDFL 211 Introduction to World Literature I 3 cr.
Literary masterpieces in translation, illustrating spiritual, social, and esthetic life from ancient times through the Renaissance. Guest lectures in various literatures. Variable. *Prerequisite: ENGL 101 or 111.*

MDFL 212 Introduction to World Literature II 3 cr.
Literary masterpieces in translation from the 17th century to the present. Guest lectures in various literatures. Variable. *Prerequisite: ENGL 101 or 111.*

Linguistics

LING 301 Introduction to Language 3 cr.
Introduction to the study of language. The nature of language; language families; techniques of linguistic analysis; linguistic change. Conducted in English. Variable. *Prerequisite: permission of instructor.*

French

FREN 101 Basic Elements of French I 3 cr.
Fundamental skills: listening, speaking, reading, writing. Emphasis on active performance. Language laboratory. Not for students with high school or college French except by special placement. Variable.

FREN 102 Basic Elements of French II 3 cr.
Continued development of basic skills. Emphasis on active performance. Language laboratory. Variable. *Prerequisite: FREN 101.*

FREN 211 French Grammar, Composition, and Conversation I 3 cr.
Intensive grammar, oral command of the language, introduction to expository writing. Language laboratory. For students with two or more years of high school French, or FREN 102. Variable.

FREN 212 French Grammar, Composition & Conversation II 3 cr.
Sequel to FREN 211. Variable.

FREN 250 Overview of French 3 cr.
An overview of French. May be taken concurrently with a 300-level course. *Prerequisite: FREN 212 or equivalent.*

FREN 330 French for Practical Communication I 3 cr.
Emphasis on development and strengthening of oral-aural skills. Listening and speaking activities, simulation and role playing, phonetics and pronunciation practice. Extensive use of authentic audio and video materials, both recorded and live. Not open to students who have received credit for former FREN 311. Variable. *Prerequisite: FREN 250 or equivalent.*

FREN 331 French for Practical Communication II 3 cr.
Emphasis on advanced grammar and reading and writing skills. Reading of authentic newspaper and magazine articles and current and relevant materials in the social sciences and other content areas. Not open to students who have received credit for former FREN 312. Variable. *Prerequisite: FREN 250 or equivalent.*

FREN 332 French for Practical Communication III 3 cr.
Continuation of French 331. Further development of reading and writing skills and advanced grammar. *Prerequisite or corequisite: FREN 250. FREN 330 and 331 recommended.*

FREN 333 France Until 1789 3 cr.
Political, economic, philosophical, scientific, social, artistic life in France from the Middle Ages to the Revolution of 1789, i.e., the period known as the "Ancien Regime" with a special emphasis on Classicism (17th century) and the Enlightenment (18th century). Not open to students who

- have received credit for former FREN 313. Variable. *Prerequisite or corequisite: FREN 330, FREN 331, or FREN 332 (or equivalent).*
- FREN 334 France From 1789 to Contemporary Times** 3 cr.
Political, economic, philosophical, scientific, social, artistic, and literary life in France from the Revolution (1789) to the present. This course will cover major literary movements such as Romanticism, Realism, and Symbolism. Not open to students who have received credit for former FREN 314. Variable. *Prerequisite or corequisite: FREN 330, FREN 331, FREN 332, or FREN 333 (or equivalent).*
- FREN 335 Intro. to French Literary Texts** 3 cr.
Introduction to the current methodologies of literary analysis through the chronological study of selected writers and works from the Medieval period to the modern era. Not open to students who have received credit for former FREN 315. Variable. *Prerequisite or corequisite: FREN 330, FREN 331, or FREN 332.*
- FREN 401 French Poetry** 3 cr.
Poetry as a genre in France. Study of structures, techniques, themes, imagery, etc. Textual analyses. Variable. *Prerequisite: FREN 335 or permission of instructor.*
- FREN 402 The French Theater** 3 cr.
French theater from 17th century. Major schools and playwrights from Corneille to the antitheater of the mid-twentieth century. Variable. *Prerequisite: FREN 335 or permission of instructor.*
- FREN 403 French Nonfiction** 3 cr.
Works of philosophers, moralists, memorialists, essayists, and critics from the Renaissance to the present. Variable. *Prerequisite: FREN 335 or permission of instructor.*
- FREN 404 French Fiction** 3 cr.
Great novels, novellas, and short stories from the 17th century to the present. Variable. *Prerequisite: FREN 335 or permission of instructor.*
- FREN 490 Special Topics in French Language and Literature** 3 cr.
A selected topic such as an author or work, a genre or theme, translation or interpreting. Variable. *Prerequisites: two 300-level French courses and permission of instructor.*
- FREN 498 Readings in French** 1 to 4 cr.
Intensive readings and a term paper. Variable. *Prerequisites: three 300-level French courses and permission of instructor.*
- FREN 499 Individual Problems in the French Language** 1 to 4 cr.
Individual research or activity requiring submission of a final paper or completed project. Variable. *Prerequisites: three 300-level French courses and permission of instructor.*
- Spanish**
- SPAN 101 Basic Elements of Spanish I** 3 cr.
Fundamental skills: listening, speaking, reading, writing. Emphasis on active performance. Language laboratory. Not for students with high school or college Spanish except by special placement. Variable.
- SPAN 102 Basic Elements of Spanish II** 3 cr.
Continued development of basic skills. Emphasis on active performance. Language laboratory. Variable. *Prerequisite: SPAN 101.*
- SPAN 211 Spanish Grammar, Composition, & Conversation I** 3 cr.
Intensive grammar, oral command of the language, introduction to expository writing. Language laboratory. For students with at least two years of high school Spanish, or SPAN 102. Variable.
- SPAN 212 Spanish Grammar, Composition, & Conversation II** 3 cr.
Sequel to SPAN 211. Variable.
- SPAN 250 Overview of Spanish** 3 cr.
An overview of Spanish. May be taken concurrently with a 300-level course. *Prerequisite: SPAN 212 or equivalent.*
- SPAN 330 Spanish for Practical Communication I** 3 cr.
Emphasis on development and strengthening of oral-aural skills. Listening and speaking activities, simulation and role playing, phonetics and pronunciation practice. Extensive use of authentic audio and video materials, both recorded and live. Not open to students who have received credit for former SPAN 311. Variable. *Prerequisite: SPAN 250 or equivalent.*
- SPAN 331 Spanish for Practical Communication II** 3 cr.
Emphasis on advanced grammar and reading and writing skills. Reading of authentic newspaper and magazine articles and current and relevant materials in the social sciences and other content areas. Not open to students who have received credit for former SPAN 312. Variable. *Prerequisite: SPAN 250 or equivalent.*
- SPAN 332 Spanish for Practical Communication III** 3 cr.
Continuation of Spanish 331. Further development of reading and writing skills and advanced grammar. *Prerequisite or corequisite: SPAN 250, SPAN 330 and 331 recommended.*
- SPAN 333 Introduction to Culture and Civilization of Spain** 3 cr.
Spanish culture: political, literary, economic, social, and artistic life in Spain. Not open to students who have received credit for former SPAN 313. Variable. *Prerequisite: SPAN 250 or equivalent.*
- SPAN 334 Introduction to Culture & Civilization of Latin America** 3 cr.
Latin American culture: political, literary, economic, social, and artistic life in Latin America. Not open to students who have received credit for former SPAN 314. Variable. *Prerequisite: SPAN 250 or equivalent.*
- SPAN 335 Introduction to Study of Spanish Literature** 3 cr.
Esthetics of Spanish poetry, fiction, and drama. Not open to students who have received credit for former SPAN 315. Variable. *Prerequisite: SPAN 250 or equivalent.*
- SPAN 401 Spanish Poetry and Drama I** 3 cr.
Drama and poetry from the Middle Ages through the Golden Age. Variable. *Prerequisite: SPAN 335 or equivalent.*
- SPAN 402 Spanish Fiction** 3 cr.
Novels and short stories from Cervantes to the present. Variable. *Prerequisite: SPAN 335 or equivalent.*
- SPAN 403 Spanish Poetry and Drama II** 3 cr.
Drama and poetry from the Romantics to the present. Variable. *Prerequisite: SPAN 335 or equivalent.*
- SPAN 404 Spanish Nonfiction Prose** 3 cr.
The essay as Literature. Principal Spanish and Latin American essayists. Variable. *Prerequisite: SPAN 335 or equivalent.*
- SPAN 405 Business Spanish** 3 cr.
The study of specialized vocabulary and language and of business practices of both Latin America and Spain. Variable. *Prerequisites: two 300-level Spanish courses.*
- SPAN 406 Literature and Culture of the Andean Region** 3 cr.
The study of literature (poetry, novel, short story, essay) principally of Ecuador, Bolivia, and Peru in its cultural context. Offered only in Ecuador session. Variable.
- SPAN 490 Special Topics in Hispanic Language & Literature** 3 cr.
A selected topic such as an author or work, a genre or theme, translation or interpreting. Variable. *Prerequisites: two 300-level Spanish courses and permission of instructor.*

SPAN 498 Readings in Spanish 1 to 4 cr.
Intensive readings and a term paper. Variable. *Prerequisites: three 400-level Spanish courses and permission of instructor.*

SPAN 499 Individual Problems in Spanish Language 1 to 4 cr.
Individual research or activity requiring submission of a final paper or completed project. Variable. *Prerequisite: three 300-level Spanish courses and permission of instructor.*

Geography

GEOG 103 Physical Geography 4 cr.
Earth-sun relations, map reading and interpretations, landforms, elements of weather and climate, and climate regions. Three hrs. lecture and 2 hrs. lab. Every semester. GEP LAC Group C.

GEOG 104 Human Geography 3 cr.
Distribution of human beings in relation to population dynamics, economic development, and cultural diversity. Every semester. GEP LAC Group D.

GEOG 113 Honors: Physical Geography 4 cr.
Earth-sun relations, map reading interpretation, landforms, elements of weather and climate, and climate regions. Three hrs. lecture, 2 hrs. lab, and four Saturday field trips. GEP LAC Group C. *Prerequisite: acceptance into the Honors Program or permission of instructor.*

GEOG 114 Honors: Human Geography 3 cr.
Distribution of human beings in relation to population dynamics, economic development, and cultural diversity. GEP LAC Group D. *Prerequisite: acceptance into the Honors Program or permission of instructor.*

GEOG 275 Introduction to Spatial Analysis 3 cr.
Basic concepts of Spatial Analysis and applications of analytical techniques to geographically referenced information. Discussion of types of spatial data, data collection and presentation, and basic techniques for analyzing and mapping spatial distributions, including Geographic Information Systems (GIS). Two hours lecture and 2 hours lab. Each semester. *Prerequisites or co-requisites: GEOG 103 /113 and GEOG 104/114, or sophomore standing (30 credits).*

GEOG 300 Economic Geography 3 cr.
The distribution of world economic activities. Agriculture, mining, the manufacturing industries, trade, and transportation. Every third semester beginning Spring 2001. *Prerequisite: GEOG 104 (or 114) or permission of instructor.*

GEOG 301 Geography of North America 3 cr.
Major national and geographic regions of the United States, Canada, and Mexico. Relationship between natural and economic factors. Fall, odd-numbered years. *Prerequisites: GEOG 103 (or 113) and GEOG 104 (or 114) or permission of instructor.*

GEOG 302 Geography of Maryland 3 cr.
A geographic analysis of the State. Spring. *Prerequisites: GEOG 103 (or 113) and GEOG 104 (or 114) or permission of instructor.*

GEOG 307 Advanced Physical Geology 4 cr.
Recognition and interpretation of landscape features. Structure and epigenetic processes. Rock and mineral samples, topographic and geologic maps, geologic cross-sections, and aerial photographs. One field trip required. Three hrs. lecture and 2 hrs. lab. Spring. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*

GEOG 308 Advanced Historical Geology 4 cr.
Chronology of the earth's history from hypothesized origins through the Holocene. Paleogeography, paleotectonics, and flora and faunal evolution. Lab study of sediments, fossils as indicators of rock age and environ-

ment, and geologic maps and structure sections. Three hrs. lecture and 2 hrs. lab. Fall. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*

GEOG 310 Fundamentals in the Mapping Sciences 3 cr.
Map design principles, map symbolization, data handling, map projections and exploring the maps' relation to geographical information systems, remote sensing, geographic visualization and the WWW. Two hrs. lecture, 2 hrs. lab. Every semester. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*

GEOG 315 Applied Design in the Mapping Sciences 3 cr.
Examines maps as means of visual communication, map use (and misuse), cognition, design theory, visual variables, and color theory. Computer based exercises and a final project. Every Spring. Two hr. lecture, 2 hr. lab. *Prerequisites: GEOG 275 and GEOG 310.*

GEOG 317 Geographic Information Systems 3 cr.
An examination of the fundamental concepts, operations and applications of geographic information systems (GIS). GIS are introduced as configurations of computer hardware and software specifically designed for the preparation, presentation, interpretation and analysis of geographically referenced data. Lectures are supplemented by microcomputer-based laboratory exercises. Two hrs. lecture and 2 hrs. lab. Each semester. *Prerequisite: GEOG 275 and completion of two college mathematics courses. GEOG 310 is strongly recommended.*

GEOG 324 Urban Geography: Internal City Patterns 3 cr.
Introduction to urban North American land use and social activities. Theories of internal urban patterns, present patterns, and implications for the future. Housing patterns, commercial and industrial activities, urban transportation, political fragmentation, and the potential role of urban planners. Fall. *Prerequisite: GEOG 104 (or 114) or permission of instructor.*

GEOG 325 Urban Geography: Metropolitan Systems 3 cr.
Introduction to urban areas and their distribution. Locational characteristics of cities as centers of manufacturing, distribution, and services. Historic growth patterns and planning strategies for future development. Spring. *Prerequisite: GEOG 104 (or 114) or permission of instructor.*

GEOG 335 Oceanography 3 cr.
Basic principles of oceanographic science and discussion of the role of oceans in global environmental systems. Spring, even-numbered years. Also offered as SCIE 335. *Prerequisites: GEOG 103/113, BIOL 149, and completion of a college level mathematics course.*

GEOG 380 Geographic Research Methods & Field Techniques 3 cr.
Quantitative analysis applicable for spatial data. Design of geographic research, field methods, and report preparation with statistical analysis. Spring. *Prerequisite: MATH 209, GEOG 275 and 9 hrs. of geography or permission of instructor.*

GEOG 401 Geography of Europe 3 cr.
Physical, historical, and cultural features that have shaped the current landscapes of Europe. Three hrs. lecture. Spring. *Prerequisite: GEOG 103 (or 113) and GEOG 104 (or 114) or permission of instructor.*

GEOG 402 Geography of Russia and the Former Republics 3 cr.
Population, agriculture, mining, manufacturing, trade, and transportation of Russia and adjacent states. Human adjustment to the physical environment of the various regions. Fall. *Prerequisites: GEOG 103 (or 113) and GEOG 104 (or 114) or permission of instructor.*

GEOG 403 The Geography of Sub-Saharan Africa 3 cr.
Cultural, economic, physical and political potentials of Sub-Saharan Africa. Complex spatial patterns that define the Sub-Saharan African landscape are examined. Fall, even-numbered years. *Prerequisite: GEOG 104 (or 114) or permission of instructor.*

GEOG 405 Climatology 3 cr.
Controls, classifications, selected regions, and world patterns of climates.

- Fall, odd-numbered years. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*
- GEOG 406 Conservation of Natural Resources** 3 cr.
Current problems associated with the use and misuse of natural resources. Fall, even-numbered years. *Prerequisites: GEOG 103 (or 113) and GEOG 104 (or 114) or permission of instructor.*
- GEOG 407 Political Geography** 3 cr.
The world patterns of nations; geographic factors affecting the background and present development of countries. Fall. *Prerequisite: GEOG 104 (or 114) or permission of instructor.*
- GEOG 410 Locational Analysis** 3 cr.
Theories and methods of analyzing and explaining the spatial location of economic activities. Emphasis on theoretical, methodological and practical issues. The relationship between consumer behavior and the location of industrial and service facilities is examined. Every third semester beginning Fall 2001. *Prerequisite: GEOG 104 (or 114) or permission of instructor.*
- GEOG 412 Geographic Visualization** 3 cr.
Explores cartographic applications of computer animation, multimedia presentations and interface design for research, data exploration, and visual communication of geo-spatial ideas. Fall. Two hrs. lecture and 2 hrs. lab. *Prerequisites: GEOG 275 and GEOG 310 or permission of instructor.*
- GEOG 413 Remote Sensing — Aerial Photo Interpretation** 3 cr.
Analysis of aerial photographs for geographic information; principles of image identification; stereoscopy and photo measurements; and interpretation of air photo images of natural and cultural landscapes. Two hrs. lecture and 2 hrs. lab. Fall. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*
- GEOG 414 Advanced Remote Sensing Techniques** 3 cr.
Remote sensing of the environment with emphasis on interpretation. Use of digital imagery analysis, applications, modeling and geographic information systems (GIS) interfaces. Spring. *Prerequisites: GEOG 275 and GEOG 413 or permission of instructor.*
- GEOG 417 Advanced Geographic Information Systems** 3 cr.
Further exploration of GIS theory and formulation of real world applications of GIS to perform spatial analysis and modeling. Includes modeling languages and techniques, incorporation of remote sensing data and student-led discussions in class. Two hrs. lecture, 2 hrs. computer lab exercises. Fall, even-numbered years. *Prerequisite: GEOG 317 (Geographic Information Systems) or permission of instructor.*
- GEOG 418 Cartometrics** 3 cr.
Examines the map's role as a tool for measuring geo-referenced data including spatial transformations, interpolation and generalization. Computer based projects, selected readings and group discussion. Fall, odd-numbered years. Two hrs. lecture and 2 hrs. lab. *Prerequisites: GEOG 103, GEOG 317, and GEOG 380.*
- GEOG 421 Regional Planning** 3 cr.
Contemporary topics in regional planning and development. Group and individual projects and research. Every third semester beginning Spring 2001. *Prerequisite: GEOG 325 or permission of instructor.*
- GEOG 425 Geography of Transportation** 3 cr.
The linkages and flows of goods, services, and people from area to area. The influence of various transportation modes in the historical development of regions; the role of transportation planning in shaping future metropolitan and regional settlements. Every third semester beginning Spring 2002. *Prerequisite: GEOG 324 or GEOG 325 or permission of instructor.*
- GEOG 430 Fluvial Geomorphology** 3 cr.
Channelized and non-channelized flows in effecting landscape change; stream process-response relationships; and morphometric properties of drainage basins. Use of topographic maps and aerial photographs. Spring, odd-numbered years. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*
- GEOG 431 Glacial and Pleistocene Geomorphology** 3 cr.
Glacial phenomena associated with the recent Ice Age and the Holocene. Techniques to reconstruct glacial environments; erosional and depositional micro-and macro-landforms; and glacial stratigraphy. One two-day field trip required. Spring, even-numbered years. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*
- GEOG 432 Hydrology** 3 cr.
Physical and chemical processes of the movement of water through the rainfall-runoff segment of the hydrologic cycle. Infiltration and percolation, overland and channel flow, channel processes, and the nature of hydrographs. Spring. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*
- GEOG 433 Surveying** 3 cr.
Theory of measurements, computation, and instrumentation; field work and compilation of topographic base maps; evaluation of errors; profiling, grading, slope and grade stakes. Two hrs. lecture and 3 hrs. lab. MATH 103 is recommended. Fall.
- GEOG 440 Introduction to Soils** 3 cr.
The identification and delineation of soil units on the landscape, their morphology, genesis, and use. Major soils profiles and soil/landscapes in relation to environmental factors. Two hrs. lecture and 2 hrs. lab./field session. Spring. *Prerequisite: GEOG 103 (or 113) or permission of instructor.*
- GEOG 441 Soil Analysis** 3 cr.
Physical and chemical characteristics of soils as they relate to suitability for plant growth and reproduction. Laboratory and field testing of soil and soil-forming material. Physical properties of soil, moisture relationships, organic matter content, and chemical constituents. Two hrs. lecture and 2 hrs. lab./field session. Fall. *Prerequisite: GEOG 440 or permission of instructor.*
- GEOG 445 Biogeography** 3 cr.
Patterns of plant and animal distributions in the landscape are stressed and are considered in light of historical, environmental and biotic influences. Historical development of contemporary regional distributions, survey of world biomes and the importance of disturbance and human-induced changes on biotic distributions are considered. Spring. *Prerequisite: GEOG 103/113 or BIOL 149. BIOL 340 is recommended.*
- GEOG 450 Urban Planning** 3 cr.
City planning: needs assessment, land use suitability, policy, and design. Participation in limited scope planning projects. Every third semester beginning Fall 2001. *Prerequisite: GEOG 324 or permission of instructor.*
- GEOG 454 Geography of Tourism** 3 cr.
A review of the geographical distribution of tourism, travel patterns and tourism impacts on natural environments and local populations. Fall. *Prerequisite: Completion of six credits of geography or senior standing.*
- GEOG 455 Tourism Planning** 3 cr.
Planning activities associated with the development and marketing of tourist activities. Consideration of both business and leisure travel. Group project focus. Spring. *Prerequisite: GEOG 454.*
- GEOG 460 Natural Hazards in the Physical Environment** 3 cr.
Study of hazards to human society arising from wind, water, and earth either independently or from human activities. Perception, prevention, and mitigation of hazards; spatial distribution and impact on global populations. Spring, odd-numbered years. *Prerequisite: GEOG 103 and senior standing, or permission of instructor.*
- GEOG 465 Environmental Health** 3 cr.
Investigation of the relationship between human exposure to environmental pollutants and resultant adverse health effects. Consideration of

epidemiology, exposure assessment, risk assessment and risk management. Variable. Also offered as BIOL 465. *Prerequisite: completion of two laboratory science courses.*

GEOG 470 Soil and Water Engineering 4 cr.
Principles and methods for soil and water management related to surface land disturbances. Methods for calculating storm runoff and erosion, design of flow conveyances and water detention basins, and computer assisted modeling. Three hrs. lecture and 2 hrs. lab. Fall. *Prerequisites: Completion of BIOL 149 and 150, CHEM 101 and 102, MATH 209, GEOG 103 and 275, or permission of the instructor.*

GEOG 471 Engineering for Land Development 3 cr.
Basic engineering techniques used in designing landforms, drainage systems, and roadways for land development projects. An overview of project development, equipment and management strategies. Spring. *Prerequisites: Completion of BIOL 149 and 150, CHEM 101 and 102, MATH 209, GEOG 103 and 275, or permission of the instructor.*

GEOG 472 Environmental Planning 3 cr.
Principles and methods used in environmental assessments and site analysis. Students will prepare an environmental impact statement, site development plan, or mine reclamation plan. Fall.

GEOG 473 Environmental Law 3 cr.
A survey of federal and state environmental laws and regulations. History and role of environmental regulation related to air and water pollution, waste disposal, and resource development. Spring.

GEOG 480 The Geographic Perspective 3 cr.
The historical development of geographic thought with an emphasis on how geographers structure research questions. Spring. *Prerequisite: senior standing and 18 hours of geography completed.*

GEOG 488 Environmental Practicum 3 cr.
A self-paced, independent research study capstone course for concentrators in Environmental Science in Earth Science. The student will select an environmentally-related topic in consultation with his/her advisory committee, prepare a research proposal, conduct a literature review and/or collect field data, and complete a substantive research paper (adhering to the format of a major professional journal) which is also presented in an open public forum. *Prerequisites: completion of 24 credit hours in this concentration, senior standing, GPA of at least 2.0 in the concentration and approval of department chair prior to registration.*

GEOG 490 Special Topics in Geography 3 cr.
A specialized topic or recent development in geography. Variable. May be repeated for credit if topics are substantially different. *Prerequisite: 6 hrs. of geography or permission of instructor.*

GEOG 492 Internship: Research in Geography 3 or 6 cr.
Academic component of internship. Requires coregistration in 495. Graded A-F. Each semester and summer.

GEOG 495 Internship in Geography 6 or 9 cr.
Experiential component of internship: guided work experience in conjunction with 492; must directly relate to academic program. Interns register for 9 credits in 495 and 6 credits in 492 or 6 credits in 495 and 3 credits in 492. Coregistration in other courses requires prior approval of the internship coordinator. Graded P/F. Each semester and summer. *Prerequisites: major in Geography, Earth Science, or Environmental Analysis and Planning with 24 hrs. completed, senior status, GPA of at least 2.5 in the major; approval of Department Chair; submission of Internship Agreement form to internship director prior to registering; requirements of cooperating agency, if any.*

GEOG 499 Research in Geography 1-6 cr.
Research in field of interest chosen by student and faculty. Each semester. Repeatable to 6 credits. *Prerequisites: minimum of 15 hrs. of geography completed, GEOG 380, and permission of Department Chair.*

Health, Physical Education & Recreation

Health Courses

HEED 100 Personal Wellness 2 cr.
Students will be assisted in developing an understanding of and appreciation for the importance of including lifelong wellness practices and physical activities in their daily lives. Students plan, implement and evaluate own wellness plan. GEP BR Health. Every semester.

HEED 101 Community Health Promotion 2 cr.
Explores all purposeful activities designed to improve personal and public health through a combination of strategies, including the implementation of behavioral change, health education, health protection, risk factors, health enhancement and health maintenance. Every semester.

HEED 102 First Aid 2 cr.
Basic first aid procedures in emergencies. Maintaining self-confidence while handling an injured or suddenly ill victim. Every semester.

HEED 103 Foundations of Exercise & Sport Science 3 cr.
The study of both the history and philosophy of exercise and sport science. Emphasis placed on the subdisciplines of athletic training and health/fitness. Fall.

HEED 104 Foundations of Health Education 3 cr.
An introduction to theories and practices guiding professional health educator responsibilities and competencies. Spring semester.

HEED 200 Nutrition 3 cr.
Principles of nutrition. The effect of food habits on family health. Nutritional requirements for different stages of human development. Application to various economic levels and social backgrounds. Every semester, summer.

HEED 202 Coordinated School Health Program 3 cr.
The concept and implementation of a coordinated school health program from social, economic, health, and education perspectives. Fall only.

HEED 210 Athletic Taping and Bracing Techniques 1 cr.
The art and science of applying athletic tape and braces in the prevention and treatment of athletic injuries. Fall semester.

HEED 216 Content in the School Health Program I 3 cr.
Introduction to content knowledge and skills in selected school health curriculum topics: tobacco, alcohol & other drugs; illness & disease; mental & emotional health; safety & injury prevention. Fall semester.

HEED 222 Clinical Experiences in Athletic Training: I 1 cr.
An introduction to the daily management of the athletic training clinical environment. Variable.

HEED 223 Clinical Experiences in Athletic Training: II 1 cr.
An introduction to the daily management of the athletic training clinical environment. Variable.

HEED 305 Care and Prevention of Athletic Injuries 3 cr.
Introduction into the field of athletic training. Emphasis on prevention and care of muscular skeletal injuries. Basic first aid procedures. Every semester.

HEED 306 Organization & Administration of Exercise & Sports Science 3 cr.
Effective administration and management strategies in exercise and sport science. Human resource management, financial management, facility design and planning, client management issues, and legal liability issues addressed. Emphasis on athletic administration, athletic training and health/fitness management. Fall only.

HEED 311 Assessment & Evaluation Methodology	3 cr.	Testing and measurement techniques; evaluation procedures. Practice in testing and interpretation. May not be taken by students who have credit for former PHEC 311. Every semester.	cal aspects of athletic training. Clinical managerial skills are emphasized. Variable.		
HEED 316 Content in the School Health Program II	3 cr.	Continued development of content knowledge and skills in relation to school health curriculum topics: nutrition, family life & human sexuality; physical activity & fitness and consumer & environmental health. Spring semester. <i>Prerequisite: HEED 216.</i>	HEED 495 Internship in Health Promotion	9 cr.	Special work experiences related to the health promotion academic program. Full-time students must register for a minimum of 9 credit hours of internship. Prerequisite: Completion of 90 credit hours or more with a "C" or better in the concentration and senior status. Variable.
HEED 317 Content in the School Health Program, Part II	3 cr.	Covers consumer and environmental health and related school health issues. Fall.	Physical Education		
HEED 318 Orthopedic Assessment I: Upper Extremity	4 cr.	General and specific athletic injury assessment procedures. Emphasis is placed on the upper extremity, head, abdomen, throat, and thorax assessment. 4 credit lecture and lab. Spring semester. <i>Prerequisite: HEED 305.</i>	One credit activity courses meet twice a week for a semester or four periods per week for a quarter. Half-credit activity courses meet twice a week for one quarter.		
HEED 319 Orthopedic Assessment II: Lower Extremity	4 cr.	General and specific athletic injury assessment procedures. Emphasis is placed on the spine, pelvis, and lower extremity including gait and postural analysis. 4 credit lecture and lab. Fall semester. <i>Prerequisite: HEED 318.</i>	PHEC 101 Adapted Activities	1 cr.	An adapted program in lieu of regular physical education classes, for students with certain physical disabilities. Enrollment by recommendation of personal physician. Two periods per week. Every semester.
HEED 322 Clinical Experiences in Athletic Training: III	1 cr.	The in-depth study of both the theoretical and practical clinical aspects of athletic training. Variable.	PHEC 102 Adapted Activities	1 cr.	Sequel to PHEC 101. Every semester.
HEED 323 Clinical Experiences in Athletic Training: IV	1 cr.	The continued in-depth study of both the theoretical and practical clinical aspects of athletic training. Variable.	PHEC 103 Foundations of Physical Education	3 cr.	History and philosophies of physical education. Career opportunities. Foundations for TOPE program. For teacher education only. Fall.
HEED 401 School Health Problems	3 cr.	Establishment of necessary health services; principles of health education in the elementary and secondary school. Every third semester. <i>Prerequisite: HEED 101.</i>	PHEC 109 Aerobic Fitness	2 cr.	Laboratory in aerobic fitness dance with lecture sessions on weight control. Two 1-hr. labs, 1 hr. lecture. Every semester.
HEED 404 Health Instruction	3 cr.	Basic concepts of health education. Implementing a health education program for grades K-12. Every semester. <i>Required in BLOCK semester prior to PHEC 497 for Teacher Education.</i>	PHEC 124 Basketball	1 cr.	Fundamental skills of basketball. Every semester.
HEED 405 Sexuality	3 cr.	Family relationships and human sexuality. Physical and mental health, and sociological considerations of sex education. Every semester.	PHEC 126 Soccer	1 cr.	Fundamental skills of soccer. Spring only.
HEED 408 Therapeutic Modalities in Sports Medicine	3 cr.	The study of both the theoretical basis and practical usage of various therapeutic modalities. Designed for individuals who routinely treat sports-related injuries. Fall only. <i>Prerequisite: HEED 305.</i>	PHEC 129 Tennis	1 cr.	Fundamental skills of tennis. Every semester.
HEED 409 Consumer and Environmental Health	3 cr.	An examination of the larger social context of health behaviors and decision-making related to personal and community health. Fall.	PHEC 163 Strength Training and Conditioning	1 cr.	Weight training skills and general fitness activities. Every semester.
HEED 416 Curriculum Design in Health Education	3 cr.	Health Education curriculum development, implementation, and evaluation; implementation of program strategies from evaluation results. Spring.	PHEC 164 The Teaching of Physical Education Through Outdoor Adventure Education	1 cr.	Fundamental skills of rock climbing, canoeing, backpacking, cycling, and in-line skating. Every semester. <i>Prerequisite: PHEC 103 for teacher education.</i>
HEED 418 Current Issues in Health	3 cr.	Identification and investigation of problems and solutions relevant to existing or emergent health topics. Spring semester.	PHEC 165 The Teaching of Physical Education Through Cooperative Team Challenges	1 cr.	Fundamental skills of cooperative and initiative activities. Every semester. Prerequisite: <i>PHEC 103 for teacher education.</i>
HEED 422 Clinical Experiences in Athletic Training: V	1 cr.	The continued in-depth study of both the theoretical and practical clinical aspects of athletic training. Clinical decision making skills are emphasized. Variable.	PHEC 166 The Teaching of Physical Education Through Tactical Approaches	1 cr.	Fundamental skills of net/wall, target, fielding/striking, and invasion games. Every semester. <i>Prerequisite: PHEC 103 for teacher education.</i>
HEED 423 Clinical Experiences in Athletic Training: VI	1 cr.	The continued in-depth study of both the theoretical and practical clinical	PHEC 167 The Teaching of Physical Education Through Educational Gymnastics	1 cr.	Fundamental skills of educational gymnastics. Every semester. <i>Prerequisite: PHEC 103 for teacher education.</i>
			PHEC 168 The Teaching of Physical Education Through Dance Forms	1 cr.	Fundamental skills of dance. Every semester. <i>Prerequisite: PHEC 103 for teacher education.</i>
			PHEC 169 The Teaching of Physical Education Through Weight Training	1 cr.	Fundamental skills of weight training and fitness. Every semester. <i>Prerequisite: PHEC 103 for teacher education.</i>

PHEC 170 Physical Education Teaching Lab	1 cr.	PHEC 366 Theory of Soccer	3 cr.
Methodologies of Muska Mosston, George Graham, John Rink, et. al. (The Teaching of Games for Understanding), and Problem Solving/Creative Thinking Initiative Activities will be the focus of this teaching lab. <i>Transfer students only or permission of instructor.</i> Spring.		Concepts, advanced strategies, and organization and administration of a soccer program. Spring semester.	
PHEC 230 Golf	1 cr.	PHEC 369 Theory of Softball	3 cr.
Fundamental skills of golf. Every semester.		Concepts, advanced strategy, and organization and administration of a softball program. Variable.	
PHEC 250 Beginning Swimming	1 cr.	PHEC 401 Physiology of Exercise	3 cr.
Basic swimming skills and water safety. Every semester.		Exercise and the circulatory, respiratory, and nervous systems; efficiency of muscular work; fatigue; age, sex, and body type. Two hrs. lecture, one 2-hr. lab. May not be taken by students who have credit for PHEC 406. Every semester. <i>Prerequisite: BIOL 201 and 202.</i>	
PHEC 251 Intermediate Swimming	1 cr.	PHEC 402 Adapted Physical Activities	4 cr.
Swimming strokes and aquatic skills required for qualification as a good swimmer. Every semester. <i>Prerequisite: PHEC 250 or equivalent.</i>		Adapting physical activities to individual disabilities. Three hours lecture, 2 hours lab.	
PHEC 301 Biomechanics for Teacher Education	3 cr.	PHEC 404 Supervision in Health and Physical Education	3 cr.
Mechanics of human motion-muscles and joints. Emphasis on the teaching of various physical principles through the study of human motion. Biomechanical relationship in the upper and lower extremities, and the vertebral column. May not be taken by students who have credit for PHEC 303. Spring. <i>Prerequisite: BIOL 211.</i>		Philosophy of leadership to enhance the health and physical education curriculum. Every third fall.	
PHEC 303 Biomechanics for Exercise Science	3 cr.	PHEC 405 Psycho-Social Foundations of Sport	3 cr.
Mechanics of human motion - muscles and joints. Application of mechanical principles to the study of human movement in exercise and daily life. Biomechanical relationships in the upper and lower extremities, and the vertebral column. May not be taken by students who have credit for PHEC 301. Fall. <i>Prerequisite: BIOL 201 & 202.</i>		Study of human behavior during participation in sport; role of sport in society; psychological characteristics of sport performers; people and organizations who control sport. Variable.	
PHEC 309 Health and Physical Education for the Elementary Classroom Teacher	3 cr.	PHEC 406 Applied Physiology	3 cr.
Developmentally appropriate content, skills, and activities in health and physical education. Primary emphasis on regular classroom teacher role. For early childhood and elementary education majors. Students required to earn CPR certification outside regular class hours. Every semester, summer. <i>Prerequisite: EDUC 100.</i>		Understanding how the cardio-respiratory, digestive, and muscle/neural systems function in the human body; how to teach physiological principles of training; how to promote a physically active lifestyle. May not be taken by students who have credit for PHEC 401. Fall semester. <i>Prerequisite BIOL 149 and BIOL 211.</i>	
PHEC 310 Organization & Administration of Health and Physical Education	3 cr.	PHEC 407 Motor Learning and Performance	3 cr.
Non-instructional aspects of the physical education program. Classroom management and discipline, budgets and equipment inventory, legal considerations, program advocacy and the role of physical education in society. Spring. Teacher education only. <i>Prerequisite: junior standing.</i>		Motor skill acquisition concepts. Nature of the learner, guidance, results, motivation, practice, transfer, retention, and psychological implications. Required in BLOCK prior to PHEC 497 in Teacher Education. Every semester.	
PHEC 350 Red Cross Lifeguarding	1 cr.	PHEC 408 Movement Experiences for Children	3 cr.
Red Cross lifeguarding techniques. Three periods per week. Every semester. <i>Prerequisite: ability to swim a quarter mile.</i>		Neuromuscular skills appropriate to grades K-6. Enhancing capacities for movement as a way to express oneself. One lecture and 2 labs per week. Every semester. Required in BLOCK semester prior to PHEC 497 in Teacher Education. <i>Prerequisite for HPE majors only: junior standing or departmental permission; admission to Phase II teacher education.</i>	
PHEC 351 Water Safety Instruction	2 cr.	PHEC 410 Advanced Strength Training	3 cr.
Course is designed to certify instructor candidates to teach water safety and swimming courses. Three periods per week. Every semester. <i>Prerequisites: Emergency Water Safety certificate or Life Saving certificate.</i>		The study of the principles and practices of advanced strength training. Emphasis on the practical application of this knowledge to both athletic performance and a health/wellness setting. Fall. <i>Prerequisites: PHEC 163 and PHEC 303.</i>	
PHEC 360 Theory of Track and Field	3 cr.	PHEC 411 Evaluation and Prescription in Fitness	3 cr.
Concepts, advanced strategies, and organization and administration of a track and field program. Fall semester.		In-depth examination of evaluation of and components applicable to the development of exercise programs. Fall. <i>Prerequisite: PHEC 401.</i>	
PHEC 361 Theory of Football	3 cr.	PHEC 412 Principles of Coaching	3 cr.
Concepts, advanced strategies, and organization and administration of a football program. Spring semester.		Introduces students to learning about coaching education and the responsibilities of the coach. Spring semester. <i>Prerequisite: junior standing.</i>	
PHEC 362 Theory of Baseball	3 cr.	PHEC 413 Rehabilitation Techniques in Sport Medicine	3 cr.
Concepts, advanced strategies, and organization and administration of a baseball program. Fall semester.		Various aspects of the rehabilitation process for the physically active or athletic population. Goals, techniques, evaluation methods and specific rehabilitation programs covered. Spring. <i>Prerequisite: HEED 318 and 319.</i>	
PHEC 364 Theory of Basketball	3 cr.	PHEC 415 The Black Athlete in American Society	3 cr.
Concepts, advanced strategies, and organization and administration of a basketball program. Fall semester.		A study of African-American involvement in sport from slavery to the present, investigating the people, events and conditions which affected sport in both the black society and the American society at large. Variable.	
PHEC 365 Theory of Volleyball	3 cr.		
Concepts, advanced strategies, and organization and administration of a volleyball program. Spring semester.			

PHEC 416 Curriculum Design in Physical Education 3 cr.
Physical education curriculum design, selection, and development. Instructional planning based on developmentally appropriate activities, learning styles, safety issues, diversity considerations and societal implications. Teacher education. Spring. *Prerequisite: junior standing.*

PHEC 418 Physical Education in the Secondary Schools 3 cr.
Materials and methods of instruction in physical education at the secondary level. Teaching experience at local high school. Required in BLOCK semester prior to PHEC 497 in Teacher Education. Every semester. *Prerequisite: junior standing or departmental permission; admission to Phase II teacher education.*

PHEC 420 Sport Law and Ethics 3 cr.
Legal implications of tort and liability law for coaches; case studies in sport ethics, fair play, and morality in sport; athletic eligibility and gender equity. Variable.

PHEC 435 Physical Activity and the Older Adult 3 cr.
The aging process, current theories of aging, and how physical activity, nutrition, and psychological and sociological variables influence the well being of individuals as they biologically age.

PHEC 450 Aquatics and Pool Management 3 cr.
Advanced course in teaching, supervising all levels of swimming and diving instruction, and training competitive swimmers. Administration of swimming pools; staff, program, budget, facilities, safety, pool sanitation. Spring only. *Prerequisite: current Red Cross advanced life-saving certificate.*

PHEC 480 Field Experience in Athletic Training 1 to 6 cr.
Field experience in athletic training. Sites of study may vary. Offered as needed. Repeatable up to a maximum of six credits.

PHEC 481 Field Experience in Coaching 1 to 6 cr.
Field experience in coaching. Sites of study may vary. Offered as needed. Repeatable up to a maximum of six credits.

PHEC 482 Field Experience in Health Fitness 1 to 6 cr.
Field experience in health fitness. Sites of study may vary. Offered as needed. Repeatable up to a maximum of six credits.

PHEC 483 Field Experience in Health Promotion 1 to 6 cr.
Field experience in health promotion. Sites of study may vary. Offered as needed. Repeatable up to a maximum of six credits.

PHEC 490 Special Topics in Health & Physical Education 1 to 6 cr.
The special topics course allows for unique or distinctive study such as clinics, workshops or course work dealing with a current topic related to health & physical education. It is arranged on a needs basis. Repeatable for credit if topics are substantially different.

PHEC 495 Internship in Health Fitness 9 cr.
Special work experiences related to the health fitness academic program. Full-time students must register for a minimum of 9 credit hours of internship. *Prerequisite: Completion of 90 credit hours or more with a C or better in the health fitness concentration and senior status.*

PHEC 498 Readings in Health & Physical Education 1 to 4 cr.
Intensive reading on selected topic. Every semester. Repeatable for credit if topics are substantially different. *Prerequisite: major or minor in HPE or Exercise and Sport Science and permission of instructor.*

PHEC 499 Individual Problems in Health & Phys. Ed. 1 to 4 cr.
Individual activity requiring submission of a final paper or completed project. Every semester. Repeatable for credit if topics are substantially different. *Prerequisites: major or minor in HPE or Exercise and Sport Science and permission of instructor.*

Recreation and Parks Management

RECR 201 Introduction to Recreation and Parks 3 cr.
Appreciation of recreational activities in our culture. History and philosophy of the recreation and park movement and the value of leisure in society today. Not open to students who have received credit for former PHEC 204. Every semester.

RECR 205 Camp Counseling 2 cr.
Development of the camping movement; qualifications and responsibilities of the camp counselor; leadership techniques in working with children; camp programs, outdoor skills. Weekend camp experiences provided when possible. Not open to students who have received credit for former PHEC 205. Variable.

RECR 221 Introduction to Therapeutic Recreation 3 cr.
An overview of services, agencies, and programs designed to meet the developmental and recuperative recreational and leisure needs of disabled populations. Every semester.

RECR 321 Theories & Concepts in Therapeutic Recreation 3 cr.
Introduction to theories and concepts related to leisure, play development, therapeutic recreation service delivery models, organization and management of therapeutic recreation services. Every third semester. *Prerequisite: RECR 221.*

RECR 330 Outdoor Education 3 cr.
Development of outdoor education in the school program. Integration of academic disciplines; conservation of the environment. Not open to students who have received credit for former course, PHEC 330. Once a year. *Prerequisite: Permission of the instructor.*

RECR 342 Park and Facility Design 3 cr.
Study of park and recreation areas including acquisition, design and operating policies. Once a year. Not open to students who have received credit for former PHEC 442 or RECR 442. *Prerequisite: RECR 201 or permission of instructor.*

RECR 380 Recreation Leadership 3 cr.
Leadership techniques involved in recreation and park settings including leadership in small and large groups. Once a year. *Prerequisites: RECR 201, 221 or permission of instructor.*

RECR 382 Program Planning 3 cr.
Planning principles used in the development of recreation programs and leisure experiences. Once a year. Not open to students who have received credit for former course, PHEC 444. *Prerequisite: RECR 201, 221 or permission of instructor.*

RECR 384 Special Event Management 3 cr.
Basic elements of special event management including: human resource management and organization structure, the arts and entertainment industry, event planning, event marketing, box office and ticket management, contract negotiation, financial management for special events, liability issues and program evaluation. Field trips required. Once a year. *Prerequisite: RECR 201 or permission of instructor.*

RECR 388 Research Methods in Recreation and Parks 3 cr.
Methods of inquiry in the empirical study of recreation and parks. Nature of scientific inquiry, research designs, survey research, program evaluation, unobtrusive research and elementary quantitative analysis. *Prerequisites: RECR 201, RECR 382 or permission of the instructor.*

RECR 390 Outdoor Adventures 3 cr.
Wilderness and survival activities. Hiking, backpacking, survival swimming, orienteering, fitness activities, outdoor first aid and emergency skill, physical and emotional challenges, preserving the outdoors. Self-inventory of physical history required. Not open to students who have received credit for former PHEC 390. Every semester.

RECR 391 Management of Wilderness and Environmental Emergencies

3 cr.

Managing environmental emergencies in the backcountry including wilderness rescue and disaster planning, protecting the body from physical and biological forces and emergency care. Variable offering. *Prerequisites: RECR 390 or permission of the instructor.*

RECR 392 Backcountry Safety and Rescue

3 cr.

Application of backcountry safety and rescue techniques such as those used in high angle, whitewater and cave rescues. Variable offering. *Prerequisites: RECR 390 or permission of the instructor.*

RECR 421 Program Design & Evaluation in Therapeutic Rec.

3 cr.

Introduction to conducting and analyzing leisure counseling assessments, developing program proposals for activities and interventions, facilitating activities and developing evaluation systems for programs. Every third semester. *Prerequisite: RECR 221.*

RECR 422 Principles & Practices in Therapeutic Recreation

3 cr.

Introduction to individual intervention treatment plans which consist of assessment, intervention techniques, protocols for treatment plans, documenting and tracking progress of the treatment plan, leadership techniques, and evaluation of the effectiveness of the treatment plan. Every third semester. *Prerequisite: RECR 221.*

RECR 440 Organization & Administration of Rec. & Parks

3 cr.

Structure and conduct of public, private, and school recreation and parks programs, special state and federal support programs. Not open to students who have received credit for former PHEC 440. Once a year. *Prerequisites: RECR 201, 221, 382 or permission of instructor.*

RECR 443 Current Issues & Legal Liability in Recreation & Parks

3 cr.

Current issues and legal liability in the recreation and parks field. Normally taken prior to Internship in Recreation. Once a year. *Prerequisites: RECR 201, 221, 382 or permission of instructor.*

RECR 480 Field Experience in Recreation and Parks

1-6 cr.

Special aspects of recreation and parks management. Sites of study may vary. Offered as needed. Repeatable up to a maximum of 6 credits.

RECR 490 Special Topics in Recreation & Parks

1-6 cr.

Unique or distinctive study such as clinics, workshops or course work dealing with a current topic related to recreation and parks management. Arranged as needed. Repeatable for credit if topics are substantially different.

RECR 492 Internship Project

3 cr.

Academic component of internship. Register concurrently with RECR 495. Not open to students who have received credit for former course, PHEC 492. Every semester. *Prerequisites: junior or senior status, completion of core courses in major or permission of the instructor.*

RECR 495 Internship in Recreation

9-12 cr.

Guided work experience directly related to student's academic program. Normally, students may not take additional course work and should register concurrently with RECR 492. Graded P/F. Not open to students who have received credit for former course, PHEC 495. Every Semester. *Prerequisites: junior or senior status, completion of core courses in major or permission of the instructor.*

RECR 497 Out-of-Class Requirements

0 cr.

Students are required to complete 120 hours of practical experiences (not including internships), to attend one state, regional or national conference during their Junior or Senior year, and to have a current certification in CPR and first aid. Consult the Guide for Completion of Out-of-Class Requirement in Recreation. Graded NR/P. Every semester.

RECR 499 Individual Study in Recreation & Parks

1-6 cr.

Individual research performed under the supervision of a faculty member. Every semester. Repeatable for credit if topics are substantially different. *Prerequisite: permission of the department chair.*

History

HIST 100 The Contemporary World in Historical Perspective

3 cr.

A consideration of major historical developments of the last century in diverse areas of the world that illuminate contemporary problems. Every semester. GEP LAC Group B.

HIST 103 History of the United States

3 cr.

Survey of the political, social, economic, and diplomatic trends in United States history from 1492 until 1876. Every fall.

HIST 104 History of the United States

3 cr.

Survey of the political, social, economic, and diplomatic trends in United States history from 1876 to the present. Every spring.

HIST 111 Honors: The Contemporary World in Historical Perspective

3 cr.

A consideration of major historical developments of the last century in diverse areas of the world that illuminate contemporary problems. Both reading and writing assignments are more challenging than those in HIST 100. Every spring. GEP LAC Group B. *Prerequisite: enrollment in the Honors Program or permission of the instructor.*

HIST 113 World History

3 cr.

Survey of Western and Non-Western Civilizations and cultures from the earliest times to 1500. Fall.

HIST 114 World History

3 cr.

Survey of Western and non-Western Civilizations and cultures from 1500 to 1900. Spring.

HIST 290 Special Topics in History

3 cr.

A study of an historical topic, problem, or period allowing for more specific focus and greater depth than is possible at the 100-level. Variable.

HIST 299 Writing and Research in History

3 cr.

The study and practice of the techniques of historical research and writing. Completion of this course with a C or better is required for final admission to the History major. Every semester. *Prerequisite: completion of HIST 100 and at least one additional history course.*

HIST 301 Traditional Africa

3 cr.

The African pre-colonial states: their governments, economic systems, cultural patterns, achievements, and relations with other African and non-African peoples. Also offered as AAST 300. Not open to students who have credit for former HIST 452. Variable.

HIST 303 History of Latin America

3 cr.

Earlier Latin American history: Aztecs, Incas, and Mayas, the Age of Conquest, the colonial period and the struggle for independence. Variable.

HIST 304 History of Latin America

3 cr.

Later Latin American history: the development of the Latin American nations from independence until the present. Variable.

HIST 305 Women and Society in Modern Europe

3 cr.

A survey of women and their roles, both mythical and actual, in European society from 1750 to the present. Women as revolutionaries, social activists and professionals will be considered along with women as significant household members. Variable.

HIST 306 Medieval Europe

3 cr.

A topical survey of European history from the 5th century to about 1300. The environmental, economic, social, political, and cultural factors that made for a distinctive civilization in Europe and provided the foundations for future developments in European history. Variable.

HIST 307 Renaissance and Reformation Europe

3 cr.

The political, social, economic, and cultural transformation of Europe

- from medieval (1300) to early modern (1600). Emphasis on cultural innovation (Renaissance) and religious diversity and conflict (Reformation). Variable.
- HIST 308 Europe, 1600-1815** 3 cr.
European history from 1600 through Napoleon. The political, social, economic, and cultural development of Europe from a traditional society to the beginnings of the modern period. Variable.
- HIST 309 World Environmental History** 3 cr.
Historical study of environmental dimensions of change in human history. Historical case examples covering most world regions, and periods such as prehistory, the ancient world, agrarian societies, and the recent industrial world. Variable.
- HIST 310 Ancient Greece and Rome** 3 cr.
Bronze Age, Archaic, and Classic civilizations of Greece; Alexander and Hellenistic era; early Italy and the Etruscans; Roman republic and empire; fall of Rome. A balance of political, cultural, and socio-economic aspects. Variable.
- HIST 318 Native Peoples of the Americas** 3 cr.
Survey of the history of Native American peoples in the Western Hemisphere from pre-Columbian times to the present. The impact of Europeans on native societies and cultures and the natives' relationships with the emerging nation-state. Variable.
- HIST 325 The History of Modern Science** 3 cr.
The development of the modern understanding of nature and the major sciences from the Renaissance through the twentieth century.
- HIST 341 The Modern and Contemporary Middle East** 3 cr.
The religious and secular history of the Middle East from the late 19th century to the present era. National and international aspects of the region before, during, and after the Western imperial thrust into the area. Variable.
- HIST 344 Modern Western Europe** 3 cr.
The history of Western Europe in the nineteenth and twentieth centuries, with particular attention to political, social, economic and cultural developments in Germany and France. Variable.
- HIST 345 History of Maryland** 3 cr.
Survey of Maryland history from its founding until the present. Variable.
Prerequisites: Completion of HIST 103, 104 recommended.
- HIST 346 History of Modern Ireland** 3 cr.
Survey of Irish history and culture from the late 18th century to the present. The relationship between Ireland and England, Irish nationalism and the movement for liberation, the development of separate Protestant and Catholic identities, and the problems of economic development. The Great Famine and its impact; the Northern Ireland problem in its political, constitutional, and historical settings. Variable.
- HIST 380 The American West** 3 cr.
The West from the Mississippi River to the Pacific, including Alaska, emphasizing the 19th century. Spanish exploration; the fur empire; Indian assimilation and extinction; the cowboy's frontier; mining frontier; women in the West; the myth of lawlessness; the West in art, literature, and song; the 20th century West. Variable.
- HIST 403 Imperial Russia** 3 cr.
The political, economic, social and cultural history of the Russian empire, from its roots in the ninth-century Kievan state to its fullest expansion under the last Romanov tsar, Nicholas II. Variable.
- HIST 404 Revolutionary and Soviet Russia** 3 cr.
Russia since the revolution of 1905: political developments, both domestic and foreign; economic system, organization; social and cultural evolution. Variable.
- HIST 406 Twentieth Century African-American Leadership in the United States** 3 cr.
An intensive study of how a variety of black leaders responded to the racial predicament of African-Americans in the twentieth century. While the persistent national political debate between integrationists and nationalists will form the core of the course, the achievements and the proposals of black men and women from all walks of life will be explored. Documentary film footage, recorded speeches and music will illuminate the significance of many leaders from W.E.B. DuBois to Jackie Robinson, Martin Luther King, Malcom X and Jesse Jackson. Variable.
Prerequisite: HIST 104 or 200/300 level African American Studies course.
- HIST 408 The British Empire** 3 cr.
Survey of the history of Britain, 1600 to 1900, with emphasis and special consideration for its overseas empire, the empire's role in British history and the historical consequences for the people of the empire.
- HIST 409 The Scientific Revolution** 3 cr.
An examination of the transition from medical natural philosophy to Newtonian Science from the Renaissance through the seventeenth century. Consideration of major figures and developments, including the Copernican revolution in astronomy, the contributions of Kepler, Galileo, and Newton, and the establishment of the "mechanical philosophy" in relation to its social, philosophical, and religious context.
- HIST 415 History of American Women** 3 cr.
The experience of all groups of women in America from pre-colonial times to the present. How female roles are shaped by changing socio-economic circumstances. Variable.
- HIST 422 Diplomatic History of Europe, 1789-The Present** 3 cr.
The relations of the great European powers in world affairs from 1789 to the present, emphasizing the era of Napoleon, the unification of Italy and Germany, the Balkan states, the causes of the World Wars and Cold War relationships. Variable.
- HIST 428 Diplomatic History of the United States** 3 cr.
Foreign relations of the United States from 1815 to the present. The era of the War of 1812, the Civil War, American imperial expansion, the diplomacy of World War I and the Versailles Peace Treaty, the period between the wars, World War II, the Cold War and Nuclear Age, the post Cold War era. Variable.
- HIST 431 History of the American Family** 3 cr.
The history of the family in America from the colonial period to the present, focusing on the changing role of families in American culture and the diversity of family types and experience. Variable.
- HIST 432 United States Immigration History** 3 cr.
The history of American immigration and ethnic relations from the founding of the nation to the present. Variable.
- HIST 433 Public History** 3 cr.
An introduction to the ideas and methods of public history, emphasizing practical application of research, writing and critical thinking skills in the public sector. Variable.
- HIST 443 World Perspectives on America** 3 cr.
The study of European, Asian, and other international perspectives on major events in American history. Topics will include, but not be limited to, the Revolution; the New Republic; relations with Mexico, the Caribbean, and Latin America; the Civil War; industrialization and immigration; Wilson and World War I; American involvement in World War II; the origins of the Cold War; and 21st century interventionism.
- HIST 446 Hapsburg/Ottoman Empires and Eastern Europe** 3 cr.
The history of Eastern Europe from the reign of Maria Theresa to the present, focusing on the rise of nationalism and its effect on East European politics, economy, society and culture. Variable.

- HIST 450 The History of Mexico** 3 cr.
The development of Mexican society from the pre-Columbian period to the present. The Aztec and Mayan civilizations, the implanting of Spanish control, the origins of the Mexican Revolution and its long-range impact. Variable.
- HIST 453 Contemporary Africa** 3 cr.
The 20th-century emergence of representative African nations; the achievements of these nations; their current political, economic, and social problems. Variable.
- HIST 455 Latin American Revolutions** 3 cr.
Twentieth-century revolutions in Latin America. Theories of revolution, the causes, leaders and followers, post-revolutionary developments and the international consequences of Latin American revolutions. Variable.
- HIST 457 India** 3 cr.
The philosophical, political, economic, and diplomatic evolution of India from antiquity until the present. Variable.
- HIST 458 History of China and Korea** 3 cr.
Social, political, economic, and diplomatic aspects from the prehistoric and early dynastic era to the current age. Variable.
- HIST 459 History of Japan** 3 cr.
Social, political, economic, and diplomatic aspects from the prehistoric and early dynastic era to the current age. Variable.
- HIST 460 Modern and Contemporary Asia** 3 cr.
The rising spirit of nationalism, colonial resistance movement, reactions of the imperial powers, and the emergence of new nations against the background of the old cultures. The economic, political, social, and diplomatic implications of the change. Variable.
- HIST 461 Colonial America, 1607-1763** 3 cr.
From the settlement of Jamestown through the French and Indian War. European backgrounds, religious developments, regional differences, Indian relations, and cultural life. Variable.
- HIST 462 Revolutionary America 1763-1789** 3 cr.
From the conclusion of the French and Indian War to the formation of the United States Constitution: British-American imperial relations; cultural developments in the 18th century; origins, impact, and general nature of the American Revolution; and the formation of the Federal Union. Variable.
- HIST 463 The Age of Jefferson and Jackson, 1789-1848** 3 cr.
From Washington's presidency through the administration of James K. Polk. The philosophies of Hamilton and Jefferson, the origins of political parties, politics of the Jackson era, Indian removal, the development of transportation, the frontier, slavery, abolitionism, and emerging sectionalism. Variable.
- HIST 464 The Civil War and Reconstruction, 1849-1877** 3 cr.
From the end of the Mexican War through the period of Southern Reconstruction: growth and sectionalism, and the social, political, military, and economic impact of the War Between the States. Variable.
- HIST 465 Gilded Age America, 1877-1913** 3 cr.
From the presidency of Hayes through the Progressive Era: the labor movement, growth of the city, immigration, imperialism, art and architecture, and politics. Variable.
- HIST 466 The United States in the 20th Century, 1914-1945** 3 cr.
The home front during World War I, postwar reaction, the 1920's, the Stock Market Crash, the Great Depression, the New Deal, and American society during World War II. Variable.
- HIST 467 The U.S. in the 20th Century, 1945-Present** 3 cr.
The Truman, Eisenhower, and Kennedy Years; the Cold War and McCarthyism; the 1960's; Black and student movements; Johnson and Vietnam; Nixon and Watergate; and more recent presidencies. Variable.
- HIST 470 America and the Vietnam War** 3 cr.
An interdisciplinary study of the origins, development and consequences of the United States involvement in Vietnam from 1950-1975, with emphasis on political and social history. Variable.
- HIST 484 Practicum in History** 3 cr.
Practical experience in public history through placement with an organization or agency for the purpose of completing a specific project. May be repeated once for credit in a different placement.
- HIST 485 Seminar in History** 3 cr.
Topics in history presented by students, faculty, and invited guests. Individual research (senior thesis) with interim reports and formal presentation of paper. Discussion leadership expected. Every semester. *Prerequisite: completion of HIST 299 and senior standing.*
- HIST 490 Special Topics in History** 3 cr.
A detailed study of a limited topic, problem, or period. Topics vary from semester to semester. Variable. *Prerequisite: permission of instructor.*
- HIST 492 Internship Seminar** 3 cr.
Academic component of internship. Requires coregistration in 495. Graded A-F. Normally summer only. *Prerequisites: junior or senior status, in good academic standing, submission of Internship Agreement form to internship director prior to registering.*
- HIST 495 Internship in History** 6-12 cr.
Experiential component of internship: guided work experience in conjunction with 492; must directly relate to academic program. Full-time interns register for 12 credits in 495 and 3 credits in 492 and may not enroll in other courses. Part-time interns register for 6 credits in 495 and 3 credits in 492. Graded P/F. Normally summer only. *Prerequisites: junior or senior status, in good academic standing, submission of Internship Agreement form to internship director prior to registering.*
- HIST 498 Readings in History** 3 cr.
Directed readings in some specialized area or topic of history. The topic must relate to an upper level history course previously taken in that area. Normally limited to seniors majoring in history with at least a 3.0 GPA in all history courses. *Permission of advisor, instructor, and chair of the department must be secured during the preceding semester.* In exceptional circumstances, may be repeated once for credit. Intersession and summer only.
- HIST 499 Individual Research in History** 3 cr.
The preparation of a research paper under the direction of the History Department. The topic must relate to an upper level history course previously taken in that area. Normally limited to seniors majoring in history with at least a 3.0 GPA in all history courses. *Permission of advisor, instructor and chair of department must be secured during the preceding semester.* In exceptional circumstances, may be repeated once for credit. Intersession and summer only.
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- ## Humanities
- HUMA 309 Zen Practice** 1-2 cr.
A "lab" experience supplementing in-class theoretical learning with practical and direct experience of zazen meditation under instructor guidance (1 cr.). Optional second credit earned through workshop attendance at the Rochester Zen Center. Variable. *Requires concurrent enrollment in ENGL 309.*
- HUMA 444 Metaphysics and Modern Physics** 3 cr.
Interdisciplinary study of 20th-century physics and ancient Asian metaphysics. Concepts of reality proposed by Newton, Einstein, Heisenberg, and other physicists; and by Lao-Tzu, Buddha, Hui Neng, and other ancient philosophers. Also offered as PHSC 444. Spring.

Interdisciplinary Studies

IDIS 191 Freshman Project 3 cr.
Continuation of fall semester learning communities for freshman students. Real-world or laboratory application of theoretical constructs and interdisciplinary perspectives acquired by students enrolled in learning communities the previous fall semester. Student projects will culminate in a product (e.g. video presentation, display, artistic work, etc.) presented to the university community at the end of the semester. Every Spring. *Prerequisites: freshman standing, learning community member during the previous fall semester, and permission of instructors.*

Honors Program

IDIS 491 Honors Seminar 3-6 cr.
An interdisciplinary study of a particular topic. Activities emphasize student discussions of assigned readings, oral, and written reports. Topics vary. May be repeated. *Prerequisites: Participation in the Honors Program and Junior or Senior standing or permission of the instructor(s).*

IDIS 493 Honors Thesis 3 cr.
Individual research or other individualized learning experience on a specific topic initiated by the student. Course requirements include submission of a final paper or completed project. Pre-registration includes submission of a proposal prior to the end of the preceding semester. Proposal must be approved by the faculty member sponsoring the thesis and the Honors Program Subcommittee. See Honors Program Handbook for additional information. May be repeated for credit if topics are substantially different. *Prerequisites: Participation in the Honors Program, Junior or Senior standing, and proposal approval.*

International Studies

INST 100 Introduction to International Studies 3 cr.
Introductory study of the political, economic and cultural relations among state and non-state actors and the forces that shape them. Patterns of cooperation and conflict among actors on the world stage and basic concepts and theories in the study of international relations. Every Fall.

INST 491 Seminar in International Studies 3 cr.
Examination of complex problems in international affairs through lectures, discussions, simulations and the preparation of a seminar paper. Special emphasis on management of small policy-making groups, rational decision making, and evaluation of policy. Every Spring. *Prerequisite: completion of International Studies core courses and six hours in an area of focus, or permission of the instructor.*

INST 492 Internship Seminar 3-6 cr.
Academic component of internship. Requires co-registration in INST 495. Full-time interns register for 6 credits of INST 492 and 9 credits of INST 495, part-time interns register for 3 credits of INST 492 and 6 credits of INST 495. Graded A-F. Summer only.

INST 495 Internship in International Studies 6-9 cr.
Experiential component of internship in conjunction with INST 492. Guided work experience must directly relate to student's academic program. Full-time interns register for 9 credits in 495 and 6 credits in 492 and may not enroll in other courses. Part-time interns must register for 6 credits in 495 and 3 credits in 492. Graded P/F. Summer only. *Prerequisites: junior or senior standing, not on probation, Coordinator's approval of internship before registering.*

Leadership Studies

LEAD 150 The Citizen Leader 3 cr.
Exploration of the opportunities for and obstacles to becoming engaged in civic life and social change. Discussion of responsibilities to self and others and the multiple benefits that can be derived from being a proactive participant in community affairs. Includes didactic and experiential components. Spring.

LEAD 201 Leadership Studies: Theory and Practice 3 cr.
Introduction to the study of leadership from both theoretical and practical perspectives. Fall.

LEAD 494 Practicum in Leadership Studies 4 cr.
Experiential practicum in leadership studies. Students devote 115 hours to experiential component and assume a leadership task for an organization or group. Students meet in a seminar, 1 hr. per week, to integrate previous course material and reflect on their practicum experiences. Every Fall. *Prerequisites: CMST 102, LEAD 150, LEAD 201, and 6 credits from approved list.*

Liberal Studies

LBST 499 Liberal Studies Capstone 3 cr.
Capstone course for Liberal Studies majors: seminar, internship, readings course or independent study. Paper required. P/F. Every semester. *Permission of LBST coordinator required.*

Mass Communication

You may not receive credit for both an MCOM course and the same course formerly labelled CMAT.

MCOM 100 Communication Practicum (Radio) 1 cr.
Entry-level work experience in applying mass communication theories at radio station WFWM. Repeatable to 4 credits; may not be applied to fulfillment of major requirements. *Prerequisite: permission of instructor.*

MCOM 102 Communication Practicum (Television) 1 cr.
Entry-level work experience in applying mass communication theories at Cable Channel 3 producing *News Notes*. Repeatable to 4 credits; may not be applied to fulfillment of major requirements. *Prerequisite: permission of instructor.*

MCOM 105 Introduction to Mass Communication 3 cr
A study of the field of mass communication in the United States with attention to the historical origins of film, print, and electronic media; the relative effects of these media upon society; the general nature of management organization in the industry; and an overview of the origins and nature of media regulation. Every semester.

MCOM 150 Introduction to Radio 3 cr.
Study of radio in the United States, both AM and FM, with presentations on the basic electronics, operation, regulation, staffing and selling. Variable.

MCOM 200 Fundamentals of Media Production 3 cr.
Student production of short projects directed to a specific audience; a major student-scripted multi-media presentation to the class. Use of media equipment and techniques. Four hrs. per week. Variable.

- MCOM 211 Introduction to Film Studies** 3 cr.
Development of the movies as an art form; major movements, major figures. One hour lecture, weekly film viewing, and 1 hr. discussion and interpretation. Variable.
- MCOM 212 Video Production Industry** 3 cr.
Survey of professional uses of video in communication, including broadcast television, corporate video, and educational television. Introduction to crewing, procedures, and equipment for multi-camera production systems. Every semester.
- MCOM 213 Audio Production** 3 cr.
Development of skills in multiple aspects of audio production. Through lecture and labs, students learn to script, produce, and record news, commercial, and entertainment programs. Analog and digital processing techniques will be included. Variable.
- MCOM 250 Announcing and Performance** 3 cr.
Training in the physical, intellectual, and technical requirements for talent in the electronic media. Development of basic performance skills in news, entertainment, advertising, and informational programming. Two hrs. lecture, 2 hrs. lab. Variable. *Prerequisites: MCOM 212.*
- MCOM 301 Multi-Media Workshop** 3 cr.
Techniques in aural and visual media; use of specialized photography, sound recording, video, and graphics; production of multimedia programs; current and developing media technology. Variable. *Prerequisite: MCOM 200.*
- MCOM 311 Single Camera Production** 3 cr.
Introduction to the technical and aesthetic aspects of single camera video production as applied to a variety of projects. Students produce various FSU sports and special events to be carried on FSU-TV cable channel 3. Fall and spring. *Prerequisite: MCOM 212 or permission of instructor.*
- MCOM 316 Telecommunications Management** 3 cr.
A study of problems of organization and management of radio and television stations with attention to problems of programming, sales, public relations, governmental agencies, and audiences. Also a consideration of regulatory, station, personnel, and affiliation restraints upon decision-making in management. Every semester.
- MCOM 326 Writing for Electronic Media** 3 cr.
Fundamentals of broadcast writing; vocabulary, syntax, organizing ideas according to broadcast needs. Sound message versus print message: aural style and announcing as message acting. Print versus electronic writing. News formats. Every semester. *Prerequisite: prior journalism study or experience or permission of instructor.*
- MCOM 336 Broadcast-Cable Programming** 3 cr.
Study of the general theoretical principles of scheduling and selecting programming for broadcasting and cable uses. An examination of general programming principles and practices, regulatory constraints upon programming, the nature and interpretation of ratings and their influence upon programming. Every semester.
- MCOM 346 Mass Communication Theory** 3 cr.
Survey and analysis of communication within a mass society, including examination of culture, effects, audience, and industry. Every semester. *Prerequisites: CMAT 102/112, 105, or permission of instructor.*
- MCOM 347 Telecommunications Law** 3 cr.
Survey of both constitutional and administrative laws, regulations, and public policies which govern the United States' telecommunication systems. Every semester.
- MCOM 456 Creative Strategies in Advertising & Media Buying** 3 cr.
Investigation of how effective advertising campaigns are mounted by agencies. Creative strategies emphasized. A campaign for a new product is researched, designed, and presented by students. A basic understand-
- ing of media placement, rates and rate cards included. Every semester. *Prerequisites: BUAD 361 and MCOM 326 or permission of the instructor.*
- MCOM 486 Current Issues & New Technologies in Mass Communication** 3 cr.
Examines a variety of new and emerging telecommunications technologies. Considers the historical and future impacts of these technologies on the media; issues and economics driving the implementation of these technologies; and their adoption and use by consumers. Every semester. *Prerequisite: MCOM 105.*
- MCOM 487 Advanced Video Production** 3 cr.
Advanced production course designed to enable each student to utilize production skills acquired in other courses to produce regularly scheduled television programming to be broadcast on the University's cable channel three. Two hrs. lecture, 2 hrs. lab. Every semester. *Prerequisite: MCOM 212, 311, or permission of instructor.*
- MCOM 488 Cable Channel Operation and Management** 3 cr.
Student operation and management of the University's cable channel 3. Students are responsible for producing and maintaining the message board, and a program schedule and log. Students also produce programming such as sports and special events, sign-on/sign-off announcements and promotional program spots. 1 hr. lecture, 6 hr. lab. Every semester. *Prerequisite: MCOM 311, MCOM 487, or permission of instructor.*
- MCOM 490 Special Topics in Mass Communication** 3 cr.
Research or applied experience on an announced selected topic. Variable. *Prerequisite: permission of instructor.*
- MCOM 492 Internship Project** 3 cr.
Academic component of internship experience, in conjunction with MCOM 495. Graded A through F. Every summer. *Corequisite: MCOM 495.*
- MCOM 494 Mass Communication Practicum** 1 to 3 crs.
Supervised field experience for Mass Communication majors. Participation in the communication operations of a commercial, governmental, or educational organization. Repeatable but only 3 credits may be applied for the completion of one professional focus. Every semester. *Prerequisite: Junior/senior standing, a minimum of 12 credits in Mass Communication courses, and permission of the instructor.*
- MCOM 495 Internship in Mass Communication** 6 or 12 crs.
Experiential component of internship: guided work experience directly related to student's academic program. Full-time interns register for 12 credits in 495, 3 credits in 492, and may not enroll in any other courses. Part-time interns must register for 6 credits in 495 and 3 credits in 492. Graded P/F. Summer only. *Prerequisites: Junior/senior status, not on probation; declared major in speech communication or mass communication, minimum 12 cr. in speech communication or mass communication, and 2.5 GPA in major; Internship Agreement Form approved by department internship director before registering.*
- MCOM 499 Directed Study** 1 to 6 crs.
Intensive study through faculty-directed projects or papers. Hours arranged. Variable. *Prerequisite: permission of Department Chair.*

Mathematics

- DVMT 095 Pre-Algebra Mathematics** 3 cr.
Primary focus is to improve students' basic math skills. Concepts of arithmetic, geometry, units of measure, and elementary algebra. *Students may not withdraw unless withdrawing from the university.* Completion of this course will meet the prerequisites for MATH 104, MATH 206, MATH 209 or DVMT 100. Graded P/F. Every semester. Does not fulfill the Basic University Requirement in mathematics, nor may the credits be used to fulfill the 120 hr. minimum toward graduation. **MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR MAJOR OR MINOR IN MATHEMATICS.** *Note: Students are placed in this course based upon results of Mathematics Placement Test administered by the University. Students who fail this course on their second attempt will be academically dismissed.*
- DVMT 100 Intermediate Algebra** 3 cr.
Introduction to the fundamental aspects of algebra, including properties of the real number system; integer arithmetic; operations with positive and negative exponents; variables and linear equations; graphing; second degree equations; factoring; operations with positive, negative, and fractional exponents; and quadratic equations. Completion of this course will meet the prerequisites for MATH 102, 103, and 106. Graded P/F. Every semester. Does not fulfill the Basic University Requirement in mathematics, nor may the credits be used to fulfill the 120-hr. minimum toward graduation. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or DVMT 095.*
- MATH 102 College Algebra** 3 cr.
Functions and their graphs; inverse functions; solutions of equations and inequalities; polynomial and rational functions; exponential and logarithmic functions; systems of equations and matrices. Every semester. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or DVMT 100. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL THE BASIC MATH REQUIREMENT.*
- MATH 103 Trigonometry** 3 cr.
Trigonometric functions; radian measure; polar coordinates; variation and graphs of trigonometric functions; solution of triangles, trigonometric identities and equations; inverse trigonometric functions; complex numbers. Every semester. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or DVMT 100. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*
- MATH 104 Introduction to Mathematical Problem Solving** 3 cr.
Introduction to problem solving with emphasis on strategies applied to algebra, geometry, and data analysis. Every semester. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or DVMT 095. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL THE BASIC MATH REQUIREMENT.*
- MATH 106 Algebra with Calculus for Business** 3 cr.
Intended for students in Business and Accounting. Topics in basic and intermediate algebra, with an introduction to calculus from a computational and intuitive point of view: linear, quadratic, exponential and logarithmic functions; matrices; derivatives and antiderivatives. Applications to Business emphasized. Every semester. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or DVMT 100. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*
- MATH 120 Pre-Calculus Mathematics** 3 cr.
Topics needed for the study of calculus: functions, analytic geometry, and selected topics from algebra and trigonometry. For students who plan to study the sequence MATH 226, MATH 227, MATH 228. Every semester. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or a C or better in MATH 102. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*
- MATH 200 An Introduction to Discrete Mathematics** 3 cr.
An introduction to discrete mathematical methods in computer science. Topics include number systems; sets; functions; relations; logic; boolean algebras; methods of proof; combinations; linear algebra; graphs; trees. Every semester. **MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.**
- MATH 206 Problem Solving for Elementary Teachers I** 3 cr.
Heuristics of problem solving; set theory; functions; estimation; measurement; numeration systems; rational numbers; and elementary number theory. Emphasis on students constructing and expanding their mathematical knowledge using modern technologies and pedagogies to investigate questions and solve problems. Learning activities include collecting and analyzing data from simple experiments, identifying mathematical models for the data, and using these models to make predictions which can then be tested. Admission priority will be given to Early Childhood Education and Elementary Education majors. Every semester. *Prerequisite: a passing score on the Mathematics Placement test administered by the University or DVMT 095. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*
- MATH 207 Problem Solving for Elementary Teachers II** 3 cr.
A continuation of MATH 206. Basic concepts of geometry, including measurement ideas, probability, and statistics. Technological tools such as spreadsheets, geometric software, and statistical packages will be used. Admission priority will be given to Early Childhood Education or Elementary Education majors. Every semester. *Prerequisite: C or better in MATH 206. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL THE BASIC MATH REQUIREMENT.*
- MATH 209 Elements of Applied Probability and Statistics** 3 cr.
For the non-math major; less rigorous than MATH 380. Elementary probability theory; collection, organization, and analysis of data; descriptive statistics; the normal and binomial distributions; introduction to inferential statistics; and applications. Every semester. *Prerequisite: a passing score on the Mathematics Placement test administered by the University or DVMT 095. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL THE BASIC MATH REQUIREMENT.*
- MATH 219 Honors: Elements of Appl. Probability & Statistics** 3 cr.
Introduction to statistics, with emphasis on probability theory and inferential statistics. More rigorous and broader than MATH 209. Use of the computer as a tool in statistical analyses. Probability theory; sampling distributions; estimation; hypothesis testing; parametric and nonparametric tests; correlation; regression; and analysis of variance. Written research project required. Credit may not be earned for both MATH 209 and MATH 219. Spring only. *Prerequisite: acceptance into the University Honors Program or permission of the instructor. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL THE BASIC MATH REQUIREMENT.*
- MATH 220 Calculus for Applications I** 3 cr.
An applications-oriented approach to differential and integral calculus, for the student who desires a course more intuitive than Calculus I, II, III. Credit may not be earned for both sequences MATH 226, 227 and MATH 220, 221. Every semester. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or a C or better in MATH 102. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*

- MATH 221 Calculus for Applications II** 3 cr.
Continuation of MATH 220. *MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*
- MATH 226 Calculus I** 3 cr.
First course of a three-course sequence; topics in the sequence include limits; derivatives and applications; integrals and applications; infinite series; introduction to vector calculus. Every semester. *Prerequisite: A passing score on the Mathematics Placement Test administered by the University or a C or better in MATH 120. MAY BE USED TO FULFILL THE BASIC MATH REQUIREMENT.*
- MATH 227 Calculus II** 3 cr.
Continuation of MATH 226. Every semester.
- MATH 228 Calculus III** 3 cr.
Continuation of MATH 227. Every semester.
- MATH 320 Multivariable Calculus** 3 cr.
Solid analytic geometry, partial derivatives, and multiple integrals. Spring only. *Prerequisite: MATH 228.*
- MATH 340 Fundamental Concepts of Geometry** 3 cr.
Experimental and informal geometry; properties of plane and space figures; geometric constructions; proof. *Prerequisite: MATH 207. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*
- MATH 350 Matrix Algebra** 3 cr.
Systems of linear equations; matrices and linear transformations; determinants; and vector spaces. Fall only. *Prerequisite: MATH 226 or MATH 220 or concurrent enrollment in MATH 226 or MATH 220.*
- MATH 380 Introduction to Probability and Statistics** 3 cr.
Discrete probability theory with statistical applications. Counting techniques; random variables; distributions; expectations; hypothesis testing and estimation, with emphasis on discrete models. Spring only.
- MATH 415 Foundations of Mathematics** 3 cr.
Theory of sets; mathematical logic; methods of proof in mathematics; the real number system; selected topics. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228 or concurrent enrollment in MATH 228.*
- MATH 420 Advanced Calculus** 3 cr.
Limits; continuity; differentiation and integration extended to higher dimensional spaces. Topics from vector analysis and Fourier analysis. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 320.*
- MATH 425 Introduction to Real Analysis** 3 cr.
Topology of real numbers; sequences, cluster points, continuity, theory of differentiation and integration; elements of measure theory; infinite series. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228.*
- MATH 426 Introduction to Complex Analysis** 3 cr.
Analytic functions; Cauchy's Theorem; Taylor and Laurent series; meromorphic functions; residue theory; conformal mapping. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228.*
- MATH 432 Differential Equations** 3 cr.
Solution of ordinary differential equations; Laplace transforms; numerical methods; solution by series. Fall only. *Prerequisite: MATH 228.*
- MATH 435 Numerical Analysis** 3 cr.
Elements of numerical methods frequently used in applied mathematics and the natural sciences; algorithms suitable for use in computers. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228 and COSC 200 or permission of the instructor.*
- MATH 436 (also PHYS 436) Mathematical Physics** 3 cr.
Topics in mathematical methods: finite differences; Fourier series; partial differential equations; complex variables; and conformal mapping with physical applications. Spring, odd-numbered years. *Prerequisite: MATH 432 and PHYS 216 or PHYS 262, or permission of instructor.*
- MATH 437 Combinatorics and Graph Theory** 3 cr.
General enumeration techniques; elements of graph theory; matrix representations of graphs; and applications of graph theory. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228 or permission of instructor.*
- MATH 440 Modern College Geometry** 3 cr.
An introductory synthetic study of geometry: finite, absolute, affine, Euclidean, hyperbolic, elliptic, and projective geometries. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228.*
- MATH 451 Modern Higher Algebra** 3 cr.
Basic study of the structure of groups and rings: isomorphism theorems; special kinds of rings; additional topics. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228.*
- MATH 452 Linear Algebra** 3 cr.
Basic study of vector spaces and their relationships to matrix algebra: the algebra of linear transformations; linear functionals and dual spaces; inner product spaces; and decomposition theorems. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228. MATH 350 strongly recommended.*
- MATH 460 Introductory Topology** 3 cr.
The topology of Euclidean space; homeomorphisms and quotient maps; connectedness; compactness; topological surfaces; simplicial complexes and surfaces; the Euler characteristic. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228.*
- MATH 461 History of Mathematics** 3 cr.
Historical development of mathematics and its concepts. Contributions of individuals and societies to the development of mathematics. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228.*
- MATH 465 Theory of Numbers** 3 cr.
Divisibility; Diophantine equations; congruences; sums of squares; additional topics. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228.*
- MATH 470 Mathematical Models and Applications** 3 cr.
Model-building processes; the assumptions underlying mathematical models; and the generation and interpretation of results from models. Theory and illustrative applications of modeling. Analyses of models constructed by students. Every three semesters beginning in spring 1997. *Prerequisites: MATH 228 or permission of instructor.*
- MATH 480 Probability and Statistics** 3 cr.
A deeper study of probability and statistics. Continuous probability distributions and their statistical applications. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228, MATH 380, or permission of instructor.*
- MATH 481 Applied Regression Analysis** 3 cr.
A matrix approach to linear and multiple regression using the latest statistical packages. Selecting the best regression equation, model building, and linear model approach to ANOVA and ANCOVA. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 380 (or MATH 209) and MATH 350 or permission of instructor.*
- MATH 482 Applied Nonparametric Statistics** 3 cr.
Sign tests; tests based on ranking methods, including correlation and regression; nonparametric confidence intervals and point estimates; chi-square tests; and efficiency estimates. Variable frequency. See department

ment secretary for up-to-date schedule. *Prerequisite: MATH 209 or MATH 219 or MATH 380.*

MATH 483 Theory of Interest 3 cr.

Measurement of interest; solutions to problems in interest; elementary annuities; more general annuities; amortization schedules and sinking funds; bonds and other securities; and other miscellaneous topics. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*

MATH 484 Actuarial Mathematics I 3 cr.

Survival distributions and life tables; life insurance; life annuities; net premiums; and net premium reserves. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 228 and MATH 483.*

MATH 485 Actuarial Mathematics II 3 cr.

Multiple life functions; multiple decrement models; valuation theory for pension plans; nonforfeiture benefits. Variable frequency. See department secretary for up-to-date schedule. *Prerequisite: MATH 484. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*

MATH 490 Selected Topics in Mathematics 3 cr.

A specialized topic or recent development in mathematics. May be taken more than once if the topics are substantially different. Does not duplicate any other course offered by the Department of Mathematics. Fall, odd-numbered years. *Prerequisite: MATH 228 or permission of instructor.*

MATH 491 Seminar in Mathematics 3 cr.

Individual reports and group discussions on mathematical topics and applications; review of important topics in the undergraduate curriculum; assessment exam. Written report and presentation required. Every fall. Mathematics majors only. *Prerequisites: senior status or permission of instructor.*

MATH 492 Internship Seminar 3 cr.

Academic component of internship. Requires co-registration in MATH 495. Graded A-F.

MATH 495 Internship in Mathematics 6 or 12 cr.

Experiential component of internship: guided work experience in conjunction with MATH 492; must directly relate to academic program. Full-time interns register for 12 credits in MATH 495 and 3 credits in MATH 492 and may not enroll in other courses. Part-time interns register for 6 credits in MATH 495 and 3 credits in MATH 492. Graded P/F. *Prerequisites: good academic standing; submission of Internship Agreement form to internship director prior to registering; completion of MATH 226, 227, 228, and four math courses at 300 or 400 level (or enrollment in the fourth 300 or 400 math course) at time of applying; GPA of at least 3.0 in math; and any requirements of the sponsoring agency. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.*

MATH 499 Individual Study in Mathematics 1-3 cr.

Individual research performed under supervision, culminating in a written paper or completed project. Enrollment by permission of the department.

Music

Music Theory

MUSC 101 Music Fundamentals 2 cr.

The rudiments of music designed for the prospective elementary classroom teacher. Every semester.

MUSC 102 Theory I 3 cr.

Introduction to the fundamentals of music theory including rhythm, scales, intervals, voiceleading, and harmony. Introduction to MIDI notational and sequencing software. Required for all music majors. Fall only. *Prerequisite: concurrent enrollment in Aural Skills I, MUSC 104 except by permission of instructor.*

MUSC 103 Theory II 3 cr.

Continuation of MUSC 102, with further emphasis on the development of analysis and written work. Continued use of MIDI notational and sequencing software. Required for majors and minors. Spring only. *Prerequisite: MUSC 102 and MUSC 104 or permission of instructor. Concurrent enrollment in Aural Skills II, MUSC 105 except by permission of instructor.*

MUSC 104 Aural Skills I 1 cr.

Development of aural skills through sight singing, melodic and harmonic dictation with computer-assisted lab assignments. Correlated with Music Theory I, MUSC 102 and normally taken concurrently with MUSC 102. Required for all music majors and minors. Exceptions by permission of the instructor. Fall only.

MUSC 105 Aural Skills II 1 cr.

Continuation of MUSC 104 with further emphasis on aural skills through sight singing, melodic and harmonic dictation with computer-assisted lab assignments. Correlated with Music Theory II, MUSC 103 and normally taken concurrently with MUSC 103. Required for all music majors and minors. Exceptions by permission of the instructor. Spring semester only. *Prerequisite: MUSC 102 and MUSC 104 or with permission of the instructor.*

MUSC 204 Theory III 3 cr.

A continuation of MUSC 102 and 103, exploring chromatic harmony and modulation. Written and analytical applications. Continued use of MIDI notational and sequencing software. Required for music majors. Fall only. *Prerequisite: MUSC 103 and MUSC 105 or permission of instructor. Concurrent enrollment in MUSC 206 except by permission of instructor.*

MUSC 205 Theory IV 3 cr.

Further application of chromatic materials with an emphasis on 20th century techniques. Written and analytical applications. Continued use of MIDI notational and sequencing software. Required for music majors. Spring only. *Prerequisite: MUSC 204 and MUSC 206 or permission of instructor. Concurrent enrollment in MUSC 207 except by permission of instructor.*

MUSC 206 Aural Skills III 1 cr.

Continuation of MUSC 103 and MUSC 105 with further emphasis on aural skills through sight singing, melodic and harmonic dictation with computer-assisted lab assignments. Correlated with Music Theory III, MUSC 204 and normally taken concurrently with MUSC 204. Required for all music majors. Exceptions by permission of the instructor. Meets 2 hours per week. Fall semester only. *Prerequisite: MUSC 103 and MUSC 105 or with permission of the instructor.*

MUSC 207 Aural Skills IV 1 cr.

Continuation of MUSC 206 with further emphasis on aural skills through sight singing, melodic and harmonic dictation with computer-assisted lab assignments. Correlated with Music Theory IV, MUSC 205 and normally taken concurrently with MUSC 205. Required for all music majors. Exceptions by permission of the instructor. Spring semester only. *Prerequisite: MUSC 204 and MUSC 206 or with permission of the instructor.*

MUSC 217 Elementary Composition I 2 cr.

Procedures in the organization of original musical ideas into logical forms. Variable. *Prerequisite: permission of instructor.*

MUSC 218 Elementary Composition II 2 cr.

Continuation of MUSC 217, with emphasis on the writing of short instrumental, vocal, and choral pieces. Variable. *Prerequisite: permission of instructor.*

- MUSC 305 Orchestration** 2 cr.
Study of ranges, tonal possibilities, technical limitations, and necessary transpositions for all orchestral and band instruments; scoring of short pieces in various styles for orchestra. Variable. *Prerequisites: MUSA 108 and MUSC 205.*
- MUSC 312 Arranging** 2 cr.
Emphasis on original and creative treatment of musical materials by arranging and adapting standard literature. Variable. *Prerequisite: MUSC 205.*
- MUSC 317 Intermediate Composition I** 2 cr.
Continuation of musical creation; emphasis on the technique of the past 40 years and further introduction of stylistic characteristics of recent composers. Variable. *Prerequisite: permission of instructor.*
- MUSC 318 Intermediate Composition II** 2 cr.
Composition of multiple-movement works. Variable. *Prerequisite: permission of instructor.*
- MUSC 356 Computer Music Technology** 2 cr.
Practical approach to the use of various music applications on Macintosh computers, Musical Instrument Digital Interface synthesizers and samplers, and associated software (sequencer and notational). Designed to give students in-depth knowledge of computer music technology as it applies to performance and academic areas within the field of music. Classes are laboratory in nature, held in the Electronic Music Lab. Fall only. *Prerequisite: permission of the Department.*
- MUSC 401 Form and Analysis** 3 cr.
Analysis of musical structure and style in Western civilization. Variable. *Prerequisite: MUSC 205.*
- MUSC 405 Modern Compositional Practices** 2 cr.
Detailed analysis and study of contemporary compositional styles. Variable. *Prerequisite: MUSC 401 or permission of instructor.*
- MUSC 407 Counterpoint** 2 cr.
A stylistic approach to the study of counterpoint based on the harmonic-contrapuntal style of J.S. Bach as found in his Two- and Three-Part Inventions, Well-Tempered Clavier, and choral preludes. Variable. *Prerequisite: MUSC 205.*
- Music History and Literature**
- MUSC 110 Introduction to World Music** 3 cr.
Introduction to the style periods and genres of Western Classical music through the significant literature of the major male, female, and minority composers; survey of selected non-Western music cultures; folk, gospel, and jazz music. Every semester. GEP LAC Group A.
- MUSC 115 Introduction to Music Literature** 3 cr.
Overview of the general history of music: the significant literature of the major composers; stylistic changes from the Medieval period to Early Contemporary. Fall only. *Prerequisite: ability to read music fluently.*
- MUSC 117 Music of Africa, Asia, and the Americas** 3 cr.
Introduction to musical traditions and practices of various African societies, China, India, Indonesia, Japan, and Latin-influenced countries in Central and South America (including Caribbean nations). Every semester. GEP LAC Group A.
- MUSC 250 Women in Music** 3 cr.
An examination of popular and art music by and from the perspective of women. Topics include women as performers and composers, the depiction of women in music, musical criticism, and cultural values that have affected women's participation in musical life. (Reading- and writing-intensive). Variable.
- MUSC 308 Music History I: Music of the Medieval, Renaissance, and Baroque Periods** 3 cr.
A survey of musical style from Gregorian chant through the Baroque period. Analysis, listening, discussion set in a cultural context. Every fall semester. *Not recommended for freshmen.*
- MUSC 309 Music History II: Music of the Classical, Romantic, and Modern Periods** 3 cr.
A survey of musical style from the Classical through the Modern periods. Analysis, listening, discussion set in a cultural context. Every spring semester. *Not recommended for freshmen.*
- MUSC 311 History of Jazz** 3 cr.
A survey of the origins, development, and current trends in the American musical art form called jazz. Every semester.
- MUSC 345 The Symphony** 2 cr.
The origin and development of the symphony from the 18th century to the present. Variable. *Prerequisite: permission of instructor.*
- MUSC 346 The Opera** 2 cr.
Representative operas from 1600 to the present. Variable. *Prerequisite: permission of instructor.*
- Music Teaching**
- MUSC 303 Conducting I** 3 cr.
Rudiments of baton technique, score reading and analysis, and rehearsal procedures. Opportunities for conducting with the University Wind Ensemble, Orchestra, and small instrumental and vocal ensembles within the class. Required of all music majors. Fall only. *Prerequisite: MUSC 205 or permission of instructor.*
- MUSC 307 Music Experiences for Children** 2 cr.
Classroom use of music for children from preschool through sixth grade. Singing, rhythmic activities, listening, playing instruments, and bodily movement. Every semester. *Prerequisites: MUSC 101; junior standing.*
- MUSC 350 Music and Creative Interaction for the Elementary Classroom Teacher** 3 cr.
Classroom use of music skills for children from pre-school through sixth grade. Emphasizes the elements and skills of music and provides opportunity to develop and apply teaching strategies to the teaching of music through moving, singing, listening, playing, reading, creating and creative interaction. Designed for the elementary education major. Every semester. *Prerequisite: sophomore standing.*
- MUSC 352 Choral Music Methods K-12** 2 cr.
Materials and techniques of choral instruction, computer-assisted instruction and integrated technology, and performance at all levels of public schools. Required of voice and piano majors in teacher education. Fall, alternate years. *Prerequisite: piano proficiency.*
- MUSC 353 Instrumental Music Methods K-12** 2 cr.
Materials and techniques of instrumental instruction, computer-assisted instruction and integrated technology, and performance at all levels of public schools. Required of all instrumental majors in teacher education. Fall, alternate years. *Prerequisite: piano proficiency.*
- MUSC 358 The Business of Music & Arts Management** 3 cr.
Provides an in-depth overview of the field of Music Business and Arts Management. Management theory and practice as it is applied in the world of the arts. Mission and vision, organizational structure and leadership, facilities design and planning, technology and the arts, marketing and promotion, operations, development, legal issues and arts advocacy. Variable. *Prerequisite: permission of instructor.*
- MUSC 360 Special Topics in Music Education** 2 cr.
A study of a music education topic, project or issue allowing for more specific focus and greater depth than is possible in the Music Method courses. Does not duplicate any other course offered by the Department. *Prerequisite: Permission of the instructor.*

- MUSC 404 Conducting II** 2 cr.
Continuation of Conducting I. Emphasis on choral and combined choral and instrumental scores. Required for K-12 certification in music. Spring only. *Prerequisite: MUSC 303.*
- MUSC 411 Marching Band Techniques** 2 cr.
The techniques of show planning, preparation, presentation: precision movement, music selection, and arranging. Fall, alternate years. *Prerequisite: permission of instructor.*
- MUSC 495 Internship in Music Management** 9 or 15 cr.
Guided work experience with an academic component. Work must be directly related to academic program. Full-time interns register for 15 credits and may not enroll in other courses. Part-time interns register for 9 credits. Both the experiential and academic components are graded P/F. *Prerequisites: junior or senior status, in good academic standing; submission of Internship Agreement form to internship director prior to registering; completion of Music Department core courses, passing the sophomore evaluation jury, completion of the Business Administration minor, and permission of Department Chair.*
- MUSC 499 Individual Research in Music** 1-6 cr.
Intensive individual study in an area of special interest under the direction of a faculty member. Variable. *Prerequisite: permission of the Department Chair.*
- Applied Music**
- MUSA 100 Student Recital** 0 cr.
A performance opportunity and music literature exposure for students in private instruction, required every semester for music majors and minors.
- MUSA 104 Class Piano I** 1 cr.
Basics of keyboard technique for students with little or no piano experience. Keys, scales, and chords leading to simple accompaniments of songs suitable for elementary classroom. Every semester. *Prerequisite: permission of instructor.*
- MUSA 105 Class Piano II** 1 cr.
Continuation of MUSA 104, with emphasis on styles of harmonization, transposition, and sight-reading. Spring only. *Prerequisite: MUSA 104 or permission of instructor.*
- MUSA 106 Class Voice I** 1 cr.
Fundamentals of voice production: breath management, resonance, and diction. Individual voice diagnosis and application of vocal principles. Vocal exercises and song literature for the development of a singing technique. Fall only. *Prerequisite: permission of instructor.*
- MUSA 107 Class Voice II** 1 cr.
Continuation of MUSA 106. Spring only. *Prerequisite: MUSA 106.*
- MUSA 108 Class Instruments I: Strings** 1 cr.
Basic instruction on how to play the violin, viola, cello and string bass: bowing, fingering, tone quality, position, and care of these instruments. A systematic approach to organization, implementation and teaching of string classes in the schools. Required of instrumental music majors. Fall only.
- MUSA 109 Class Instruments II: Strings** 1 cr.
Continuation of MUSA 108. Variable. *Prerequisite: MUSA 108.*
- MUSA 111 Class Guitar I** 1 cr.
Fundamentals of guitar technique for students with little or no guitar or music experience. Music reading, rudiments of theory, melodic playing, and accompaniment. Students provide their own instrument. Two 50-min. classes or one 100-min. class per week. Fall only.
- MUSA 112 Class Guitar II** 1 cr.
For students who read music and have had some previous experience with the guitar. Melodic and accompaniment styles. Spring only. *Prerequisite: MUSA 111 or permission of instructor.*
- MUSA 116-123 Private Instruction** 1 cr.
Private study in instrument or voice as a minor performance specialty. For majors or non-majors.. May be repeated for credit until program is completed. Special fee \$100 per semester. Performance for a faculty jury at the end of each semester in lieu of a final examination. Every semester. *Prerequisite: permission of the instructor.*
- MUSA 203 Class Piano III** 1 cr.
Continuation of MUSA 105, with further emphasis on improvisation of accompaniments, transposition at sight, sight-reading, playing four-part music, and ensemble playing. Fall only. *Prerequisite: MUSA 105 or permission of instructor.*
- MUSA 208 Class Instruments III: Woodwinds** 1 cr.
The basic performance and teaching techniques of the woodwinds. Fall only.
- MUSA 209 Class Instruments IV: Brass** 1 cr.
Class instruction in the standard brass instruments, designed to prepare future instrumental teachers at all levels of the public schools. Spring only.
- MUSC 210 Diction for Singers** 2 cr.
Acquaints students with the symbols and sounds of the International Phonetic Alphabet and with the application of the IPA to the English, French, German, Italian, Latin and Spanish languages. Differences between spoken and sung languages explored and physical processes required to produce the various sounds investigated and practiced. (Required for vocal performance and choral education majors).
- MUSA 213 Piano Pedagogy** 2 cr.
A methods and materials course for those preparing for piano studio teaching. Limited opportunities for teaching experience are provided in the Preparatory Division of the Music Department. Variable. *Prerequisite: permission of instructor.*
- MUSA 311 Class Instruments V: Percussion** 1 cr.
Class instruction in the standard percussion instruments, designed to prepare future instrumental teachers at all levels of the public schools. Spring only.
- MUSC 325 Accompanying** 1 cr.
Supervised experience for pianists in accompanying instrumental and vocal soloists and ensembles. Every semester. *Prerequisite: permission of instructor.*
- MUSC 413 Vocal Pedagogy** 2 cr.
The various schools of vocal technique. Designed to prepare the prospective teacher of private and class voice. Two periods per week. Variable. *Prerequisites: minimum of 2 yrs. of vocal study and the ability to play simple piano accompaniments.*
- MUSA 414 Class Piano IV** 1 cr.
Continuation of MUSA 203, emphasizing further keyboard facility. Successful completion satisfies the piano proficiency required by the Department. Spring only. *Prerequisite: MUSA 203 or permission of instructor.*
- MUSA 415 Piano Proficiency Exam** 0 cr.
Successful demonstration of functional keyboard skills for Music Teaching Certification, Performance and Music Management majors. Includes technical facility, sight-reading, transposition, improvisation and prepared repertoire. Required for all music majors for admission to upper division courses. Scheduled by appointment. Pass/Fail only.
- MUSA 356-363 Private Instruction** 2 cr.
Individual instruction in piano, organ, voice, strings, guitar, woodwinds, brass, and percussion. Minimum of 1 clock-hour per day intensive individual practice. Special fee \$200 per semester. One hour private lesson or two-half hour private lessons per week. At least one student recital and

class recital performance each semester. Performance for a faculty jury at the end of each semester in lieu of a final examination. Must be repeated for credit until program is completed. Every semester. *Prerequisite: permission of the instructor.*

MUSA 390 Junior Recital 0 cr.
Junior Recital for the Bachelor of Arts or Science Music Degree. Preparation and performance of the junior recital. *Prerequisites: successful completion of the Sophomore Evaluation, Piano Proficiency Examination and Junior Recital Clearance. Must be concurrently enrolled in MUSA 300-level Private Instruction.* Pass/Fail only.

MUSA 391 Performance Seminar 2 cr.
Individual practice, individual and group instruction in the literature and performance problems of one's major performance concentration in conjunction with Private Instruction. *Prerequisite: admission to the program at the Sophomore Evaluation Jury.*

MUSA 392 Performance Seminar 2 cr.
Continuation of MUSA 391. Recital required.

MUSA 490 Senior Recital 0 cr.
Senior Recital for the Bachelor of Arts or Science Music Degree. Preparation and performance of the senior recital. *Prerequisites: successful completion of the Sophomore Evaluation, Piano Proficiency Examination and Senior Recital Clearance. Performance majors must also have successfully completed their Junior Recital. Must be concurrently enrolled in MUSA 300-level Private Instruction.* Pass/Fail only.

MUSA 491 Performance Seminar 3 cr.
Continuation of MUSA 392.

MUSA 492 Performance Seminar 3 cr.
Continuation of MUSA 491. Recital required.

Ensemble

All ensemble courses may be repeated for credit.

MUSC 319 University Chorale 1 cr.
A select mixed chorus with repertory from all historical periods. Open to all students by permission of instructor. Every semester.

MUSC 321 Opera Workshop 1 cr.
Study of portions or all of an opera to be performed in class or public performance. Every semester. *Prerequisites: keyboard knowledge, voice private instruction, and permission of instructor.*

MUSC 327 Concert Jazz Ensemble 1 cr.
Members selected by audition each semester. Three rehearsals per week. Every semester. *Prerequisite: permission of instructor.*

MUSC 328 Band Auxiliary 1 cr.
Open, by audition, to students with ability to perform in auxiliary units of the Marching Band, such as dance drill team, flag corps, rifle squad, baton twirling. Extra rehearsals on Friday and Saturday before home football games. Fall semester only. *Prerequisite: permission of the instructor.*

MUSC 329 Marching Band: Concert Band 2 cr.
The first half of the semester devoted to marching; the second half to concert music. Extra rehearsals on Friday and Saturday before home football games. Open to all students with ability on needed instruments. Fall only. *Prerequisite: permission of instructor.*

MUSC 330 Concert Band: Wind Ensemble 1 cr.
Concert literature selected from both contemporary and traditional wind band repertoire. Biannual concert tour. Open to students from all departments by audition. Spring only. *Prerequisite: permission of instructor.*

MUSC 331 Brass Ensemble 1 cr.
Study, rehearsal, and performance of brass-wind literature. Every semester. *Prerequisite: permission of instructor; audition required.*

MUSC 335 String Ensemble 1 cr.
Study, rehearsal, and performance of string literature — principally the string quartet. Every semester. *Prerequisite: permission of instructor; audition required.*

MUSC 336 Chamber Guitar Ensemble 1 cr.
Performance of selected guitar repertoire in an ensemble setting. Public performances and/or recitals may be scheduled. Repeatable each semester for credit. One hour-long meeting each week. *Prerequisite: ability to sight-read in upper positions of the fingerboard. Enrollment limited to majors who list guitar as their primary instrument, or to non-majors by audition.*

MUSC 337 Woodwind Ensemble 1 cr.
Study, rehearsal, and performance of woodwind instrument literature — principally clarinet, flute, and saxophone quartets and woodwind quintets. Every semester. *Prerequisite: permission of instructor; audition required.*

MUSC 339 Percussion Ensemble 1 cr.
Study, rehearsal, and performance of percussion ensemble literature. Every semester. *Prerequisite: permission of instructor; audition required.*

MUSC 340 Collegium Musicum 1 cr.
Madrigals and other works for small vocal ensembles calling for one to four people on a part; occasional use of instruments. Every semester. *Prerequisite: permission of instructor; audition required.*

Orientation

ORIE 101 Introduction to Higher Education 1 cr.
Orientation of incoming students to academic and social contexts of college life. Nature and process of higher education; educational and career planning; learning skills; support services. Required of all entering freshmen with less than 13 semester hours of transfer credit. Students may not withdraw from the course unless they are withdrawing from the University.

Philosophy

PHIL 101 Introduction to Philosophy 3 cr.
Philosophical approaches to three major content areas: Personal Relationships (e.g., friendship), Social-Political Structures (e.g., democracy), Worldviews (e.g., the problem of God). Every semester. GEP LAC Group B.

PHIL 102 Contemporary Ethical Problems 3 cr.
Ethical issues such as abortion, euthanasia, preferential treatment, censorship of pornography, world hunger, the environment, and the treatment of animals. Every semester. GEP LAC Group B.

PHIL 111 Honors: Introduction to Philosophy 3 cr.
Philosophical problems such as the meaning of existence, freedom and determinism, body versus mind, the existence of God, the human person and human relationships. Variable. GEP LAC Group B. *Prerequisite: acceptance into Honors Program or permission of instructor.*

PHIL 201 Ethics 3 cr.
Ethical theories or selected problems in moral philosophy (e.g., relativism versus absolutism, the nature of value judgments). Variable.

PHIL 202 History of Philosophy: Ancient and Medieval 3 cr.
Classical western philosophy from the early Greeks to the Renaissance. Emphasis on Pre-Socratics, Plato, Aristotle, Augustine, and Aquinas. Fall only.

- PHIL 203 History of Modern Philosophy** 3 cr.
Western philosophy in the modern period; the rationalist tradition (Descartes, Spinoza, Leibniz) and the empiricist tradition (Locke, Berkeley, Hume); some reference to Kant. Spring only.
- PHIL 205 Logic** 3 cr.
A study of the forms of reasoning: inductive, deductive; fallacies. Variable.
- PHIL 208 Contemporary Topics** 3 cr.
A philosophical investigation of a selected issue, problem, or topic of contemporary relevance. Repeatable, on a different topic, to 6 credits. Variable.
- PHIL 302 Philosophy of Religion** 3 cr.
A study of religious experience, religious language, and the question of a rational basis for religious belief. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 303 Aesthetics** 3 cr.
Analysis of the nature of art and its creation, appreciation, and criticism; the major theories of art. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 304 Social Philosophy** 3 cr.
Issues arising out of the relationship between individuals and society. Themes such as social values, law, and the ideal of justice. Spring only. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 306 Philosophy of Science** 3 cr.
A study of the logical structure of the natural sciences. Topics such as the nature of scientific evidence, scientific explanation, and the objectivity of scientific knowledge. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 308 Political Philosophy** 3 cr.
Issues arising out of the relationship between individuals and the state. Themes such as power, authority, democracy, law, and rights. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 311 Asian and African Philosophy** 3 cr.
A study of the major concepts of Indian philosophy with an emphasis on Hinduism and Buddhism, Chinese philosophy with an emphasis on Taoism, and African philosophy with an emphasis on the community orientation of ethics and philosophical anthropology. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 313 Biomedical Ethics** 3 cr.
Ethical issues in medicine and biomedical research. Such problem areas as the physician/patient relationship, patients' rights and professionals' obligations, human experimentation, genetics and reproductive technologies, and social justice and health care. Spring only. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 314 Business Ethics** 3 cr.
Ethical issues in business. Such problem areas as the morality of capitalism, the social responsibility of business, the concept of corporate responsibility, business and the environment, the rights and responsibilities of employees, whistleblowing, the ethics of advertising, multinational corporations, feminist and minority concerns about business. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 315 Philosophy and the Environment** 3 cr.
A philosophical investigation of environmental issues. Anthropocentric, ecocentric, individualist, and ecofeminist approaches to the environment as well as perspectives from many cultures and religions. Connections between environmental science, ethics, and aesthetics in a historical context will be made. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 407 Existentialism** 3 cr.
Origins of existential thought in Kierkegaard and its subsequent development in Heidegger, Jaspers, Marcel, Sartre, Merleau-Ponty, and Ricoeur. Such concepts as existence, historicity, freedom, and consciousness. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 409 Philosophy and Women** 3 cr.
Topics will include philosophical views of and by women, an examination of the extent to which gender related values underlie and permeate philosophical method and theory, and an examination of ways in which gender interrelates with other social categories such as race, ethnicity, and class. Variable. *Prerequisites: 3 credits in philosophy or Introduction to Women's Studies or permission of the instructor.*
- PHIL 410 Philosophy of Law** 3 cr.
Leading issues in the philosophy of law. Such topics as the nature of law and its relation to morality, the concept of responsibility, and the justification of punishment. Highly recommended for those interested in the theory of legal concepts and legal reasoning. Fall only. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 490 Special Topics in Philosophy** 3 cr.
In-depth analysis of a topic, selected by instructor, for development thematically or historically. Repeatable, on a different topic, to 6 credits. Variable. *Prerequisite: 3 cr. in philosophy or permission of instructor.*
- PHIL 499 Individual Research in Philosophy** 1 to 6 cr.
Independent study of a philosopher, period, movement, or problem, initiated by student in consultation with instructor. Variable. *Prerequisites: 12 cr. in philosophy and permission of instructor.*

Physics

Physical Science

- PHSC 100 Cosmic Concepts** 3 cr.
A descriptive approach to the major physical concepts developed over the past four centuries and their relationship to the historical and philosophical context in which they arose. Emphasis will be on the origin, meaning, significance, and limitations of these concepts. Every semester. *GEP LAC Group C.*
- PHSC 101 Measurement** 1 cr.
A laboratory experience in observation, measurement, graphical analysis, and discovery in Physical Science. Designed for non-science majors. One two-hour laboratory per week. Every semester. *Prerequisite or corequisite: PHSC 100. GEP LAC Group C.*
- PHSC 201 Physical Science I** 3 cr.
Physical phenomena and their role in modern society: the basic concepts of classical physics and their application. Students weak in mathematics should take MATH 104 before enrolling. Variable.
- PHSC 202 Physical Science II** 3 cr.
Continuation of Physical Science I with emphasis on the basic concepts of modern physics and chemistry. Students weak in mathematics should take MATH 104 before enrolling. Variable. *Prerequisite: PHSC 201.*
- PHSC 203 Physical Science** 4 cr.
Physical phenomena and their role in modern society: basic concepts of physics, chemistry, and astronomy, with energy and environment as the unifying theme. Three hrs. lecture and 3 hrs. lab. Every semester. Intended for education majors. *GEP LAC Group C.*
- PHSC 205 Descriptive Meteorology** 3 cr.
Aspects of the atmosphere, weather variables, radiation, clean and dirty air, clouds and precipitation, atmospheric electricity, and weather forecast and modification. Field work included. Variable.

- PHSC 210 Descriptive Astronomy** 3 cr.
Aspects of the sky, the history and early development of astronomy, the solar system, stars, galaxies, cosmology, life beyond the earth, and current topics in astronomy. Lectures, planetarium demonstrations, and field work. Fall.
- PHSC 211 Descriptive Astronomy Laboratory** 1 cr.
Introductory lab course of sky observing with the unaided eye and simple instruments: outdoor daytime observing and the planetarium simulation of the night sky. Designed for the non-science major. One 2-hr. lab per week. Variable. *Corequisite or prerequisite: PHSC 210.*
- PHSC 220 The Solar System** 3 cr.
Solar and planetary discoveries since 1971, as revealed by NASA space probes. The solar atmosphere and the planets' magnetic fields; atmospheres and surfaces of the terrestrial planets; rings and atmospheres of the giant planets; major satellites; and the origin of the solar system. Variable. *Prerequisite: PHSC 210.*
- PHSC 230 The Search for Life Beyond Earth** 3 cr.
General survey of conditions across the universe; nature and probable origin of terrestrial life; possibilities of life for the other planets in our solar system; and the likelihood and techniques of contacting or communicating with intelligences beyond our solar system. Variable.
- PHSC 240 Descriptive Acoustics of Music and Hi-Fidelity** 3 cr.
Introductory acoustics course. The physical principles underlying the production, perception, and reproduction of music. Variable.
- PHSC 290 Selected Topics in Physical Science** 3 cr.
A selected topic of current interest in physical science. Variable.
- PHSC 315 Digital Electronics** 4 cr.
A lab-oriented course with emphasis on computer applications, including registers, counters, interfacing, and arithmetic circuits. Three hrs. lecture and 3 hrs. lab. Variable. *Prerequisite: COSC 100.*
- PHSC 350 Practical Solar Energy** 4 cr.
Introduction to the principles of solar energy and how to install actual systems. Three hrs. lecture and 2 hrs. lab. Variable.
- PHSC 444 Metaphysics and Modern Physics** 3 cr.
Interdisciplinary study of 20th-century physics and ancient Asian metaphysics. Concepts of reality proposed by Newton, Einstein, Heisenberg, and other physicists; and by Lao-Tzu, Buddha, Hui Neng, and other ancient philosophers. Lecture. Also offered as HUMA 444. Spring.
- Physics**
- PHYS 215 General Physics I** 4 cr.
Non-calculus introduction to the theoretical and experimental foundations of physics, topics to include mechanics and heat, the fundamental concepts, principles, and laws of physics. Three hrs. lecture and 3 hrs. lab. Either an introduction to the field for prospective majors or a self-contained survey for others. Fall. *A familiarity with high school mathematics including algebra and geometry is assumed. GEP LAC Group C.*
- PHYS 216 General Physics II** 4 cr.
A continuation of PHYS 215. Non-calculus introduction, topics to include electricity, magnetism, and light. The fundamental concepts, principles, and laws of physics. Three hrs. lecture and 3 hrs. lab. Spring. *Prerequisite: PHYS 215.*
- PHYS 261 Principles of Physics I: Mechanics** 4 cr.
Calculus-based introduction to the theoretical and experimental foundations of physics focusing on mechanics. Topics to include kinematics, dynamics, energy, momentum, rotational dynamics, and continuum mechanics. Intended primarily for physical science, engineering and math majors. Six hours of integrated lecture/lab/discussion per week. Fall. *Corequisite: MATH 120. GEP LAC Group C.*
- PHYS 262 Principles of Physics II: Electricity and Magnetism** 4 cr.
Calculus-based introduction to the theoretical and experimental foundations of physics focusing on Electricity and Magnetism. Topics to include electrostatics, electrodynamics, magnetostatics, electromagnetic induction and Maxwell's equations. Six hours of integrated lecture/lab/discussion per week. Spring. *Prerequisite: PHYS 261. Corequisite: MATH 226.*
- PHYS 263 Principles of Physics III: Sound & Light** 4 cr.
Calculus-based introduction to the theoretical and experimental foundations of physics focusing on sound and light. Topics to include vibration, wave motion, acoustics, geometrical optics, physical optics, and special relativity. Six hours of integrated lecture/lab/discussion per week. Fall. *Prerequisite: MATH 226 and PHYS 262. Corequisite: MATH 227.*
- PHYS 264 Principles of Physics IV: Thermodynamics & Modern Physics** 4 cr.
Calculus-based introduction to the theoretical and experimental foundations of physics focusing on thermodynamics and modern physics. Topics to include heat, thermodynamics, kinetic theory, atomic physics, and quantum physics. Six hours of integrated lecture/lab/discussion per week. Spring. *Corequisite: MATH 228. Prerequisite: MATH 227 and PHYS 263.*
- PHYS 282 Thermodynamics** 3 cr.
Introduction to thermodynamics. Thermodynamic properties of matter. Three laws of thermodynamics, cycles, reactions, mixtures. Fall, odd numbered years. Also offered as ENME 232. *Prerequisites: PHYS 261 and 262.*
- PHYS 300 Introductory Astrophysics** 3 cr.
Application of physics and mathematics to astrophysics. Celestial mechanics, stellar structure, and stellar evolution. Fall, even-numbered years. *Prerequisites: PHYS 216, or PHYS 262 and MATH 228, or permission of instructor.*
- PHYS 310 Classical Mechanics** 4 cr.
Development of particle and rigid body mechanics from Newton's Laws using the notation and methods of vector calculus. Particle motion, central forces, conservation principles, rigid body dynamics, and introduction to Lagrange's equations. Spring. *Prerequisite: PHYS 264. Prerequisite or corequisite: MATH 432.*
- PHYS 312 Electricity and Magnetism** 4 cr.
Classical theory of electricity and magnetism using the techniques of vector calculus. Electrostatics, magnetostatics, polarized media, currents and their associated fields, and Maxwell's equations. Fall. *Prerequisite: PHYS 264. Corequisite: MATH 432.*
- PHYS 313 Optics** 3 cr.
The nature and propagation of light, including reflection, refraction, diffraction, coherence, and interference, treated from the point of view of electromagnetic theory. Introduction to quantum optics. Spring, odd years. *Prerequisite: PHYS 263.*
- PHYS 320 Experimental Physics** 2 cr.
Application of contemporary methods and instruments to the experimental observation and measurement of classical and modern physical phenomena. Experiments chosen from mechanics, heat, thermodynamics, acoustics, electricity, magnetism, optics, and modern physics. Two 3-hr. labs. Fall. *Prerequisite: PHYS 264.*
- PHYS 331 Analog Electronics** 4 cr.
Basic principles of modern electronic devices, including DC and AC circuit analysis, diodes and power supplies, amplifier characteristics, op amps, transistors and transistor amplifiers, waveform generators. 3 hrs. lecture and 3 hrs. lab. Not open to students with credit for PHYS 316. Fall. *Prerequisites: PHYS 216 or PHYS 262, MATH 226, or permission of instructor.*
- PHYS 332 Digital Electronics** 4 cr.
Basic principles of digital electronic devices, including TTL and CMOS logic families, gates, flip-flops, counters, registers, memory devices, displays, D to A and A to D converters, digital instruments, elementary

computer interfacing techniques. 3 hrs. lecture and 3 hrs. lab. Spring. *Prerequisite: PHYS 331.*

PHYS 340 Audio Engineering 3 cr.
Basic principles of audio engineering including acoustics, electroacoustic devices, electronic components for audio-engineering, audio measurements, audio electronic circuits and equipment, and audio recording and playback. Includes elements of both analog and digital audio. Two hrs. lecture, 2 hrs. lab. Fall, even-numbered years. *Prerequisites: PHYS 263 and MATH 227 or permission of the instructor.*

PHYS 400 Senior Research & Seminar 2 cr.
Capstone course for the major. Under the direction of a faculty member, students engage in independent research. Research culminates in a paper and formal public seminar. For physics majors with senior standing. Spring. *May be repeated once for credit.*

PHYS 410 Theoretical Mechanics 3 cr.
Lagrangian and Hamiltonian formulation of mechanics with applications, the theory of small oscillations, the theory of wave motion in solids, reflection of waves, and mechanics of continuous fluids. Variable. *Prerequisites: PHYS 310 and MATH 432.*

PHYS 412 Theoretical Electromagnetism 3 cr.
Theory of the magnetic properties of matter, Maxwell's equations with applications to wave propagation in isotropic and anisotropic media, scattering of electromagnetic waves, physics of the plasma state, fields and radiation from moving charges. Variable. *Prerequisites: PHYS 312 and MATH 432.*

PHYS 415 Computer Interfacing 3 cr.
Basic digital computer interfacing, combining digital electronics, programming, and computer architecture. Topics include transducers, electronic amplification, D/A and A/D conversion, data sampling, data storage and retrieval, laboratory exercises in discrete and integrated software, survey of commercially available interface devices. Two hrs. lecture and three hrs. lab. Variable. *Prerequisites: COSC 200, PHYS 216 or PHYS 262, and PHSC 315 or PHYS 332 or permission of instructor. Also offered as COSC 415.*

PHYS 417 Quantum Physics 3 cr.
The breakdown of classical mechanics and the development of quantum theory, the foundations of the Schrodinger Equation, the uncertainty principle, quantum systems in one dimension, angular momentum, spin, and atomic physics. Fall, odd-numbered years. *Prerequisite: PHYS 264. Corequisite: MATH 432.*

PHYS 420 Introduction to Computational Physics 3 cr.
Introduction to the methods of computational physics. Explores some of the basic techniques and ideas used to solve physics problems with the aid of computers. Students develop computer programs in a high-level programming language to solve specific problems. Topics include examples from several fields of engineering such as mechanics, heat transfer, fluid dynamics, electricity and acoustics. Variable. *Prerequisites: PHYS 310, MATH 228, and COSC 200 or permission of instructor.*

PHYS 436 Mathematical Physics 3 cr.
Topics in mathematical methods: finite differences, Fourier series, partial differential equations, complex variables, and conformal mapping with physical applications. Also offered as MATH 436. Spring. *Prerequisites: MATH 432 and PHYS 216 or PHYS 262, or permission of instructor.*

PHYS 440 Acoustics 3 cr.
Introduction to the theory of wave motions. Production, properties, measurements, and applications of sonic and ultrasonic waves. Spring, even-numbered years. *Prerequisite: PHYS 263.*

PHYS 490 Special Topics 1-3 cr.
Study at the senior level of one of the fields or recent developments of contemporary physics, such as ultrasonics, musical acoustics, atmospheric

physics, astrophysics, or radiation physics. May be repeated for credit. Variable. *Prerequisite: permission of instructor.*

PHYS 491 Seminar 2 cr.
Individual reports and group discussions on current topics. Subject matter selected jointly by student and instructor. Preparation of proposal for a research project. Review of basic concepts in mechanics, electrodynamics, thermodynamics, and atomic physics. Fall. For *physics majors with junior or senior standing. May be repeated once for credit.*

PHYS 499 Special Projects 2-4 cr.
Advanced lab projects for the superior student. Project chosen by the student in consultation with a member of the Department; may be a theoretical problem. Independent search of the pertinent literature, formulation of the experimental method, conducting the investigation, and the preparation of a report. May be repeated for credit. Variable. *Prerequisite: permission of Chair of Department.*

Political Science

POSC 110 Introduction to American Politics 3 cr.
Interaction of the public and government in making American public policy. Processes and institutions of American national government; political parties and elections; public opinion and media; constitutional, legal, and cultural context. Every semester. GEP LAC Group D.

POSC 112 Honors Introduction to American Politics 3 cr.
Accelerated study of the politics of a democratic society in a constitutional, legal, and cultural context. Major institutions (Congress, president, courts, bureaucracies) of U.S. national government; political behavior of the public. Computer-based data analysis; prior computer experience not necessary. Variable. GEP LAC Group D. *Prerequisite: acceptance into the Honors Program or permission of the instructor.*

POSC 113 Introduction to World Politics 3 cr.
Patterns of decision making, conflict and conflict resolution in the world political community. Forms of governmental and economic organization; disparities in economic development and societal beliefs and values; factors affecting nations' foreign policies; approaches to the study of international and comparative political systems. Students who previously received credit for POSC 211/213 cannot receive credit for this course. Every semester. GEP LAC Group D.

POSC 114 Honors Introduction to World Politics 3 cr.
Accelerated study of major issues in world politics; evolution of the international system; political actors in world politics; patterns of conflict and conflict resolution; power; nationalism; international political economy; international organizations. Organized around major themes in the field. Students who previously received credit for POSC 211/213 cannot receive credit for this course. Variable. GEP LAC Group D. *Prerequisite: Acceptance into the Honors Program or permission of the instructor.*

POSC 131 Introduction to Comparative Politics 3 cr.
Comparative analysis of various political systems including: methods for comparative research; the effect of domestic legal, institutional and social structures on development; transitions to democracy; interaction of domestic politics and the global system. Students who previously received credit for POSC 231 cannot receive credit for this course. Every semester.

POSC 311 Research Methods 3 cr.
Methods of inquiry in the empirical study of political science. Nature of scientific inquiry; research design; elementary quantitative analysis. Computer-based data analysis; prior computer experience not necessary. Every semester. *Prerequisite: A prior upper division course in political science or permission of instructor.*

- POSC 321 American State and Local Politics** 3 cr.
Local, county, and state governments in the U.S., with emphasis on Maryland. Role of states in the federal system. Every semester. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 323 Public Administration** 3 cr.
Relationship of administrative functions to legislative, executive, and judicial branches of government; types of administrative organization in the United States and elsewhere; the U.S. Civil Service. Every semester. Not open to students who have credit for former POSC 351. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 324 Criminal Justice Systems in Action** 3 cr.
Structure, function, and social impact of criminal legal systems; "law" and "justice." Participants in the legal process: police, prosecuting and defense attorneys, judges, jurors, correctional officials, litigants, the press. State, national, and international comparisons; proposals for reform. Every semester. Not open to students who have credit for former POSC 354. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 330 Politics of Africa** 3 cr.
Examination of the economic and political development of modern African states. Topics include the impact of colonization, theories of development, theories of integration into the contemporary global economic system and the process of state building. The focus will be on selected countries as case studies. Variable. *Prerequisite: POSC 113/114 or POSC 131; POSC 131 preferred.*
- POSC 331 Politics of Latin America** 3 cr.
Examination of the development of political and economic systems in Latin America. Topics include the effects of colonization, the application of theories of development, approaches to integration into the contemporary global economic system and patterns of state building. The focus will be on selected countries as case studies. Variable. *Prerequisite: POSC 113/114 or POSC 131; POSC 131 preferred.*
- POSC 332 Politics of Middle East** 3 cr.
Examination of political and economic development of modern Middle Eastern states. Topics include the impact of colonization, approaches to development and modernization, integration into the world economy, regional politics of inclusion and global exclusion. The focus will be on selected countries as case studies. Variable. *Prerequisite: POSC 113/114 or POSC 131; POSC 131 preferred.*
- POSC 333 Politics of Western Europe** 3 cr.
Examination of the structures of governments, ideologies, policies, and contemporary issues and problems facing European states from Ireland to the Baltics and Scandinavia to the Mediterranean. Special attention will be given to the European Community and NATO. Every fall. *Prerequisite: POSC 113/114 or POSC 131; POSC 131 preferred.*
- POSC 334 Politics of Eastern Europe** 3 cr.
Analysis of the structures of government, policies, contemporary issues, and problems facing the East European states of Poland, Hungary, the Czech Republic, Slovakia, Romania, Albania, Bulgaria, and the former Yugoslavia. Variable. *Prerequisite: POSC 113/114 or POSC 131; POSC 131 preferred.*
- POSC 341 International Organization** 3 cr.
Structure and activities of international organizations as mechanisms of foreign policy and international and transnational cooperation. Security concerns; economic development and integration; human rights. Every spring. *Prerequisite: POSC 113/114 or POSC 131; POSC 131 preferred.*
- POSC 342 Foreign Policy of the United States** 3 cr.
Making and carrying out American foreign policy; decision-making processes. Effect of domestic politics and world political environment on American diplomacy. Every fall. *Prerequisite: POSC 113/114 or POSC 131; POSC 131 preferred.*
- POSC 352 Interest Groups and Public Policy** 3 cr.
Organization and activities of modern interest groups; impact of interest groups on public policy. Interest group formation, recruitment of members, internal organization, role in election campaigns, lobbying. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 358 American Public Policy** 3 cr.
Major policy areas in the U.S.; influences and constraints of the policy process; current analytical methods of political scientists. Political conflicts regarding policy; cause of gap between stated goals and actual programs. Every year. Not open to students who have credit for former POSC 458. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 361 Public Opinion and Political Behavior** 3 cr.
How the ordinary citizen relates to politics, particularly in the U.S. Positions on basic issues; polls and surveys; formation of attitudes; ideology; participation and voting; propaganda and the media; public impact on government policy. Computer-based data analysis; prior computer experience not necessary. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 362 Political Parties and Elections** 3 cr.
Organization and activities of modern political parties. Evolution of party systems in the United States; role in election campaigns; impact on public policy. Comparison to other political systems. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 363 Media and Politics** 3 cr.
Effects of mass media, particularly television, on American politics and society; use of the media by politicians; nature and impact of news reporting; media and the socialization process; freedom of the press. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 365 Women and Politics** 3 cr.
Examination of the changing political role of women, particularly in the United States. Political attitudes and values; voting behavior; recruitment for leadership positions. Comparison across American subcultures and with Europe and developing areas. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 370 Introduction to Political Thought** 3 cr.
Theoretical basis and historical development of the major political perspectives on modern society: Conservatism; Liberalism; Socialism; Fascism; Feminism; Environmentalism. Every year. *Prerequisites: POSC 110/112 and POSC 113/114 or permission of instructor.*
- POSC 421 American Legislative Politics** 3 cr.
Legislative politics in the U.S. and state legislatures; role of legislatures in American politics. Relations between legislatures and constituencies; congressional elections; internal formal and informal structures of Congress; congressional decision-making; comparison to state legislatures. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 422 American Constitutional Law I** 3 cr.
The U.S. Constitution as defined in the principal decisions and opinions of the courts: relationship between federal and state government and among the three branches of federal government. Every fall. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 423 American Constitutional Law II** 3 cr.
The U.S. Constitution as defined in the principal decisions and opinions of the courts: relationship of the individual to federal and state government. Every spring. *Prerequisite: POSC 422 or permission of instructor.*
- POSC 427 The American Presidency** 3 cr.
Analysis of the modern American presidency and the president's interaction with the bureaucracy and Congress in making foreign and domestic policy. Evolution of the president's role; executive office and White House staff; presidential power; personality; executive leadership and decision making. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*

- POSC 431 Russian Politics** 3 cr.
The structure, functions and dynamics of the Russian political system since the collapse of the Soviet Union. Topics include economic policy, democratization, ethnic politics, and the role of Russia in international security, economic, and political fora. Every fall. *Prerequisite: POSC 113/114 or POSC 131 or permission of instructor; POSC 131 preferred.*
- POSC 435 Model Organization of American States** 3 cr.
Detailed examination of the structure, functions, procedures, and issues associated with contemporary international organizations through preparation for and participation in the Model Organization of American States. Every year. Not open to students who have credit for former POSC 445. *Prerequisite: POSC 341 and permission of instructor.*
- POSC 441 International Relations: Theory and Practice** 3 cr.
Current theoretical approaches to the study of international relations; foreign policy analysis; designing approaches for international problem solving; international negotiation. Every fall. *Prerequisites: POSC 113/114 or POSC 131 or permission of the instructor.*
- POSC 442 National Security Policy** 3 cr.
Formulation and implementation of American national security policy within the context of international and domestic political systems. Competing goals and values; decision-making institutions and processes; weapons policy; resource issues. Every spring. *Prerequisite: POSC 113/114 or POSC 131 or permission of instructor; POSC 131 preferred.*
- POSC 450 Environmental Public Policy** 3 cr.
Analysis of regional, national and international environmental policies. Focus on the changing nature of the public policy process due to new and emerging "public" environmental issues. Issues examined include global warming, acid rain, deforestation, landfills and the Chesapeake Bay. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 456 Urban Politics and Policies** 3 cr.
Institutions and problems of American urban government. Nature of conflicts and competition among groups; decision making in the urban political system; changing relationships among local, state, and national governments. Variable. *Prerequisite: POSC 321 or permission of instructor.*
- POSC 462 Personality and Politics** 3 cr.
Politics from a psychological perspective. The phenomenon of political leadership; biographical study of political leaders; psychological and cultural factors in individual and mass political behavior. Variable. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 470 Seminar in Political Thought** 3 cr.
Development of political reasoning through careful consideration of the original works of political theorists, including such topics as the ideal political community and "natural right." Impact of these ideas on the development of the modern political ideologies of conservatism, liberalism, socialism and fascism. Variable. Students may re-enroll with permission of instructor, if topics are substantially different. *Prerequisite: POSC 370 or permission of instructor.*
- POSC 471 American Political Thought** 3 cr.
Evolution of American political ideas and institutions from colonial times to the present: liberalism and conservatism; political reform movements; themes in American foreign policy. Variable. Not open to students who have credit for former POSC 424. *Prerequisite: POSC 110/112 or permission of instructor.*
- POSC 491 Seminar in Political Science** 3 cr.
Lectures, discussions, student reports, research techniques, criticism, interpretation. Individual research (senior thesis) on a common topic, with interim reports and final formal presentation of paper. Variable. May be repeated for credit if topics are substantially different. *Prerequisite: written permission of instructor.*
- POSC 492 Internship Seminar** 3 or 6 cr.
Academic component of internship; requires co-registration in POSC 495. Full-time interns register for 6 credits 492 (and 9 cr. 495), part-time interns 3 credits 492 (and 6 cr. 495). Graded A through F; elective credit in POSC major. Fall, spring and summer.
- POSC 495 Internship in Political Science** 6 or 9 cr.
Experiential component of internship: guided work experience in conjunction with POSC 492; must directly relate to student's academic program. Full-time interns register for 9 credits 495 and 6 credits 492 and may not enroll in any other courses. Part-time interns must register for 6 credits 495 and 3 credits 492. Graded P/F; general elective credit - does not count toward POSC major. Fall, spring and summer. *Prerequisites: junior or senior standing, not on probation; departmental approval of internship before registering.*
- POSC 498 Readings in Political Science** 1 to 6 cr.
Directed readings in a specialized area or topic of political science. Topic ordinarily relates to an upper level political science course previously taken in that area. Regular conferences with instructor. Typically limited to seniors majoring political science with at least a 3.0 GPA in all political science courses. Repeatable to 6 credits. Every semester. *Prerequisite: written permission of instructor and department chair.*
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- ## Psychology
- PSYC 150 General Psychology** 3 cr.
Introduction to the methodology, theories, and applications of the science of animal and human behavior. Every semester. GEP LAC Group D.
- PSYC 151 Honors: General Psychology** 3 cr.
Introduction to the scientific study of human and animal behavior. Basic research findings, methodology, and theoretical, social, and ethical issues. Oral presentations and written reports on outside readings in psychology required. Variable. GEP LAC Group D. *Prerequisite: acceptance into the University Honors Program or permission of instructor.*
- PSYC 210 Child Development** 3 cr.
From conception through childhood, for understanding the early formative years. Every semester. *Prerequisite: PSYC 150 or PSYC 151.*
- PSYC 212 Adolescence and Adulthood** 3 cr.
Introduction to psychological development, adolescence through maturity. Every semester. *Prerequisite: PSYC 150 or PSYC 151.*
- PSYC 213 Psychology of Adjustment** 3 cr.
Explores the concept of psychological adjustment by relating it to students' everyday lives. Relevant psychological theory and research presented on a variety of topics including self-concept, values, person perception, interpersonal attraction, sexuality, problems in adjustment and psychotherapy. Variable. *Prerequisite: PSYC 150 or PSYC 151.*
- PSYC 220 Psychology of Women** 3 cr.
Explores women's psychological development and experience. Covers sex roles and how society's attitudes about girls and women affect female self-concept, personality, relationships and work experience. Topics also include women of color, sexual harassment, violence against women and spirituality. Spring. *Prerequisite: PSYC 150 or PSYC 151.*
- PSYC 250 Death and Dying** 3 cr.
Examination of the individual's attitudes and reactions toward death and dying and one's own mortality. Social and psychological processes affecting attitudes and reactions are explored. Variable. *Prerequisite: PSYC 150 or PSYC 151.*

- PSYC 270 Psychological Perspectives of Human Sexuality** 3 cr.
Describes psychological aspects of human sexual behavior and attitudes. Covers historical and current research techniques used to study sexuality; theories of sexual attraction, love and behavior; sexuality across the lifespan; physical and psychological aspects of sexual response; and variations in sexual attitudes, orientations and practices. Variable. *Prerequisites: PSYC 150 or PSYC 151.*
- PSYC 290 Psychological Issues and Practices** 1-4 cr.
A special content area or group of issues selected by the Department and announced in the preceding semester. Admission competitive. See the department for the criteria. Three hrs. seminar format. Variable. *Prerequisites: PSYC 150 or PSYC 151.*
- PSYC 297 Introduction to the Profession of Psychology** 1 cr.
An explanation of the profession of psychology. An examination of both career and graduate school opportunities available to psychology majors. Identification of opportunities available within the department and university. A detailed examination of what it means to be a psychology major at FSU. Participation in pre-major assessment. Graded P/F. *Prerequisites: admission to the Psychology major or permission of instructor.*
- PSYC 300 Research Methods I** 4 cr.
Introduction to the scientific method as applied to behavioral data. Naturalistic observation, surveys, and correlational studies; statistical topics. Normally, 3 hrs. lecture and 2 hrs. lab. Should be taken as soon as possible after completing 150 or 151. *Prerequisites: PSYC 150/151 General Psychology with a C or better; ENGL 101 Freshman Composition with a C or better; MATH 209 Intro. to Probability and Statistics with a C or better; prior or concurrent enrollment PSYC 297; declaration of psychology as a major or minor; or permission of the Department Chair.*
- PSYC 301 Research Methods II** 4 cr.
The nature of scientific method, explanation, and theory. Experimental and quasi-experimental design and statistical analysis. Five hrs. per week for lecture, demonstrations, and lab periods. Should be taken in the semester immediately following PSYC 300. *Prerequisite: PSYC 300 with a C or better.*
- PSYC 303 Psychology of Marriage** 3 cr.
The psychological variables of the marriage relationship. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 305 Computer Applications in Psychology** 3 cr.
Overview of current applications of computers in psychology. Programming skills are neither a prerequisite nor a goal of this course. Two hrs. lab and 2 hrs. lecture. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 306 Sensation and Perception** 4 cr.
The process of sensations from within or without. How we organize, interpret, and analyze sensory information; the relationship between perception and creativity, learning, motivation, emotion, and states of consciousness; applications of principles to personality, abnormal psychology, music, and the fine arts. Five hrs. lecture, demonstration, and labs. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 307 Experimental Analysis of Behavior** 4 cr.
Research on conditioning with infrahuman subjects. Application of conditioning techniques to the analysis of human behavior. Individual projects and labs required. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 311 Survey of Research Methods in Psychology** 3 cr.
An overview of non-experimental and experimental research methods used in psychology. Focuses on the appreciation and interpretation of research reported in psychology literature. Normally 3 hrs. lecture. MAY NOT BE USED TO MEET THE RESEARCH METHODS REQUIREMENTS FOR A MAJOR IN PSYCHOLOGY. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 360 Industrial/Organizational Psychology** 3 cr.
Explores how psychological theory, methods and research are used to help understand, predict and influence people's behavior in the work place. Considers personnel psychology, organizational psychology and consumer psychology. Variable. *Prerequisite: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 385 Group Processes** 3 cr.
Study of group processes including power dynamics, curative factors, patterns of member interaction, leadership and stages of group development. Required course for Maryland Addictions Counselor certification. Also offered as SOWK 385. *Prerequisite: Sophomore standing.*
- PSYC 386 Drugs and Human Behavior** 3 cr.
Research and theory concerning psychoactive drugs. Various drug classifications, their biological, psychological and social effects on the human organism and the environment, especially alcohol and other frequently abused drugs. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 387 Addictions Treatment Delivery** 3 cr.
Addresses the practice dimensions necessary for addiction counselors. Within each dimension, student introduced to the knowledge, skills and attitudes conducive to appropriate addiction service delivery. Required course for Maryland Addictions Counselor certification. *Prerequisites: PSYC 150/151, one 3 credit helping relationships course recommended, or permission of instructor.*
- PSYC 388 Treatment Issues and Theory in Addictions** 3 cr.
Practical application of research and theory of addiction counseling. Overview of treatment related issues, including assessment and diagnosis. *Prerequisites: PSYC 386, one 3 credit helping relationships course recommended, or permission of instructor.*
- PSYC 389 Ethics for the Addiction Counselor** 1 cr.
Addresses legal and ethical considerations for addiction counselors. Differences and similarities among addiction and other helping professionals discussed. Required course for Maryland Addictions Counselor certification. *Prerequisites: PSYC 150/151, one 3 credit helping relationships course recommended, or permission of instructor.*
- PSYC 404 Psychology of the Exceptional Child** 3 cr.
Developmental and behavioral characteristics of exceptional children as they relate to inclusion, classroom management, federal laws and psychological treatment. Topics on exceptional children include: mental retardation, physical disabilities, giftedness, emotional problems and autism. *Prerequisites: PSYC 210 or 212, or permission of instructor.*
- PSYC 408 Tests and Measurements** 3 cr.
Psychological and educational tests, their validity, reliability, scale transformations, norms, and standardization. Administration, uses, and interpretation of various instruments of assessment. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 409 Human Learning and Cognition** 3 cr.
An examination of human cognitive processes including human learning, memory and recall, attention processes, information processing, problem solving, thinking and reasoning, language acquisition and communication. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*
- PSYC 410 Introduction to Counseling** 3 cr.
Practical and theoretical foundation for further study. The nature of helping relationships, conditions for counseling, stages in the counseling process, and the counselor as a professional helper. Role playing, audio and video tape experiences, and related skill-development exercises. Every

semester. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 414 Theories of Personality 3 cr.
General survey of the principal theories and research concerning the nature and development of personality. Variable. *Prerequisites: PSYC 150/151; PSYC 210 or 212; or permission of instructor.*

PSYC 417 Psychology of Abnormal Behavior 3 cr.
Historical perspectives and causal factors of abnormal behavior. A survey of the classification of symptoms and the theoretical formulations and treatment models developed to address these symptoms. Case studies are utilized extensively to meet course objectives. Variable. *Prerequisites: PSYC 150/151; PSYC 210 or 212; or permission of instructor.*

PSYC 418 Social Psychology 3 cr.
Theories, methods and applications of social psychology. A survey of the social and interpersonal factors influencing an individual's behavior. Topics include attitudes, person perception, interpersonal relations, group dynamics, social roles and conformity. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 420 Physiological Psychology 3 cr.
Characteristics of the nervous and endocrine system and their relationship to human and animal behavior. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 430 Health Psychology 3 cr.
Psychological principles applied to the promotion and maintenance of health, the prevention and treatment of illness and changing public opinion about health related matters. Behavioral components of health risk factors and improvement of the health care system are addressed. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 444 The Male Experience 3 cr.
Examination from a gender-sensitive perspective of factors affecting the development of male behavior in American society. Emphasis on the contributions of psychology to understanding gender-related developments; contributions of other social sciences and biology are also incorporated. Topics include work, sports, male-female relations, friendship, minority experience, sexuality, power. Three hours lecture, discussion. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 450 Multicultural Counseling 3 cr.
Focuses on developing the skills and a conceptual framework that will enhance the student's ability to counsel individuals of diverse cultural backgrounds. Self-understanding and its effect on cross-cultural relationships will also be emphasized. Variable. *Prerequisites: PSYC 410 or permission of the instructor.*

PSYC 470 Advanced Experimental Psychology 4 cr.
Development and application of research methods and procedures to current problems in psychology, with emphasis on human subjects. Multivariate statistics. Individual projects and lab required. Variable. *Prerequisites: PSYC 300, PSYC 301, or permission of instructor.*

PSYC 481 History and Systems of Psychology 3 cr.
Historical foundations of the discipline of psychology. Survey of recent and current systems of theoretical ideas in psychology. Attention to the roots of the discipline in philosophy and science; consideration of the work of great psychologists and their associated systems. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 485 Behavioral Approaches to Human Problems 3 cr.
Therapeutic application of learning principles to problems in the behavior of children and adults: normal childhood development; education and habit disorders; depression, severely disordered behavior, anxiety; and sexual problems in adults. Behavioral assessment, behavior change

programs, and evaluation of such programs. Individual research and projects required. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 489 Child and Adolescent Disorders 3 cr.
In-depth examination of child/adolescent emotional and behavioral disorders. Relevant theoretical perspectives, treatment and research are discussed. Variable. *Prerequisites: PSYC 150/151, PSYC 210 or 212; at least junior status or permission of instructor. Preference in registration given to Psychology majors.*

PSYC 490 Special Topics in Psychology 1-4 cr.
Either a practicum to develop psychological skill, or a content-oriented course to provide a critical appraisal of a selected topic, as announced. Does not duplicate any other course offered by the Department of Psychology. Four credits when 5 contact hrs. are required (such as 2 hrs. lab and 3 hrs. lecture). May be repeated for credit if the topics are substantially different. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 491 Seminar in Psychology 3 cr.
Oral reports on a selected theme topic presented and discussed by students in a group setting. Written reports may also be required. Attendance at all seminar meetings expected. May be repeated for credit if topics are substantially different. Variable. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 492 Internship Seminar 3 cr.
Academic component of internship; requires co-registration in PSYC 495. Full-time interns register for 3 credits of 492 (and 12 credits 495); part-time interns, 3 credits 492 (and 6-11 credits 495). Graded A-F. *Prerequisites: see PSYC 495.*

PSYC 495 Internship in Psychology 6 - 12 cr.
Experiential component of internship. Full-time interns register for 12 credits in 495 and 3 credits in 492 and may not enroll in other courses. Part-time interns register for 6-11 credits in 495 and 3 credits of 492. Graded P/F. *Prerequisites: senior standing; submission of Internship Agreement form to internship director prior to registering; departmental approval.*

PSYC 497 Senior Seminar 3 cr.
An integrated senior-year experience that requires students to use their accumulated skills, knowledge, and ethical sensitivity to critically analyze a new and/or controversial issue in psychology. Integration of previous course material and reflections on one's own experiences in the field of psychology is expected. An integrative research paper is required. Participation in major assessment. Students can repeat this senior seminar more than once if topics are different. First priority given to students who need the course for graduation requirements. Second priority given to seniors. Students may count all senior seminar courses toward the major requirements. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or permission of instructor.*

PSYC 498 Readings in Psychology 1-6 cr.
Directed reading on a specific topic designed for the individual student. Summaries of readings and conclusions as a formal written report to be filed with the department. Not to duplicate any other course offered by the department. May be repeated for credit if the topics are substantially different. Departmental approval (granted only under extraordinary circumstances) required to enroll for more than 3 credit hrs. per semester. *Prerequisites: PSYC 297; PSYC 300; PSYC 301; admission to the Psychology major; submission of a detailed written proposal to the Department Chair, endorsed by the faculty director, prior to registering for the course and, if possible, before the end of the preceding semester.*

PSYC 499 Psychology Projects 1-6 cr.
Directed research, practicum, or other individualized learning experience on a specific topic. Formal written report to be filed with the department. Projects primarily of readings are not acceptable (see PSYC 498), nor are projects conducted in a group setting (see PSYC 490 or 491); not to

duplicate any other course offered by the department. May, on approval, be repeated for credit, if the projects are substantially different. Departmental approval (granted only under extraordinary circumstances) required to enroll for more than 3 credit hrs. per semester. *Prerequisites: PSYC 297; PSYC 300; PSYC 301; admission to the Psychology major; submission of a detailed written proposal to the Department Chair, endorsed by the faculty director, prior to registering for the course and, if possible, before the end of the preceding semester.*

Integrated Math/Science

SCIE 320 Integrated Science 4 cr.
Introduction to underlying principles and themes common to all scientific disciplines including biology, physics, chemistry, earth science and astronomy. Appropriate mathematical topics integrated into all aspects of course. Includes laboratory activities, field experiences and computer exercises; exploration of current software, multi-media, instrumentation and telecommunication; application of technology to science emphasized. Three 2 hr. lecture/lab/discussion. Variable. *Prerequisites: BIOL 149, MATH 207 and PHSC 203 or permission of instructor.*

SCIE 321 Integrated Science/Mathematics 3 cr.
Continuation of Integrated Science with emphasis on mathematical modeling. Application of technology to science and mathematics emphasized. Collaboration with students at sister institutions using electronic media encouraged. Two 2-hr. lecture/lab/discussion. Variable. *Prerequisite: SCIE 320 or permission of instructor.*

SCIE 335 Oceanography 3 cr.
Basic principles of oceanographic science and discussion of the role of oceans in global environmental systems. Spring, even-numbered years. Also offered as GEOG 335. *Prerequisites: GEOG 103, BIOL 149 and completion of a college-level mathematics course.*

SCIE 400 Issues in Context: From Specialist to Generalist 3 cr.
Interdisciplinary capstone research seminar led by a team of science, mathematics and education faculty. Students work cooperatively on extended project dealing with a complex societal problem of scientific and technological import. Upon conclusion of study, a policy recommendation will be written and delivered in public form. Active engagement in project design, implementation, analysis and reporting. *Prerequisites: two lab science courses including PHSC 203; MATH 207; and junior standing; or permission of instructor.*

Social Science

SOSC 350 Honors Seminar: Values and Social Change 3 cr.
The impact of social change on behavior in various cultures, providing a perspective on social change in the United States. *Prerequisites: acceptance into Honors Program; permission of instructor.*

SOSC 490 Topics in Social Science 3 cr.
Interdisciplinary study of a special topic in the social sciences. Fall only. *Prerequisites: completion of introductory courses and progress on concentration plus written permission of social science coordinator.*

Social Work

SOWK 305 Racial and Cultural Minorities 3 cr.
Analysis of minority-majority group situations, their causes and consequences. Minorities in the United States. Also offered as SOCI 305. Fall semester. Not open to students who have credit for former SOCI/SOWK 220, SOCI 320. *Prerequisite: SOCI 100 or 111.*

SOWK 306 The Sociology of African Americans 3 cr.
A critical study of the organization of African-American society, its development, the endogenous structures and social processes that compose and define it, and its relationship to and interaction with the people and social forces external to it. Every spring. Also offered as SOCI 306. *Prerequisite: SOCI 100 or 111.*

SOWK 310 Statistics for Social Science 3 cr.
Study of social scientific applications of univariate, bivariate, and multivariate statistical techniques with emphasis on their logic, interpretation, and application. Three hours lecture, one hour lab. Every semester. Also offered as SOCI 310. *Prerequisite: Completion of GEP math requirement.*

SOWK 311 Basic Research Methods 3 cr.
Techniques of research design: testing of hypotheses, sampling, data collection, measurement, and elementary statistical analysis. Research project required. Every semester. *Prerequisite: SOCI 310 or SOWK 310 and three courses in social work or permission of the department.*

SOWK 364 Marriage and Family Relationships 3 cr.
Courtship, marriage, and family relationships. Current family patterns and the feasibility of the various alternatives to marriage. Every semester. *Prerequisite: SOCI 100 or 111.* Also offered as SOCI 364.

SOWK 370 Introduction to Social Welfare and Social Work 3 cr.
Introduction to social welfare and social work, including philosophy, history, and methods. The more significant aspects of social welfare ideology and the impact of established programs on meeting human need. Every semester. *Prerequisite: SOCI 100 or 111, sophomore standing, or permission of the department.*

SOWK 371 Social Policy 3 cr.
Analysis of contemporary social welfare programs, services, policies, and issues. Social welfare systems and their relation to other institutions in society. Every semester. *Prerequisites: SOWK 370, POSC 110 or POSC 112, SOCI 200 (may be taken as a corequisite), or permission of the department.*

SOWK 374 Child Welfare Social Services 3 cr.
The concept of child welfare, its historical perspective, changing nature, and contemporary policies, programs, and services. Variable. *Prerequisite: SOWK 370 or permission of the Department.*

SOWK 375 Human Behavior and the Social Environment I 3 cr.
Analysis of the interrelationships of culture, society, and the development and behavior of the individual. Focus on life span development from prenatal to death. Every semester. *Prerequisites: SOCI 100 or SOCI 111, PSYC 150 or PSYC 151, BIOL 109, or permission of the Department.*

SOWK 377 Human Behavior and the Social Environment II 3 cr.
Examines the development of individual and group behavior from an ecological systems perspective. The course fosters an understanding of the total person by integrating knowledge gained in other liberal arts courses. Every semester. *Prerequisite: SOWK 375. Prerequisites or corequisites: SOWK 305, SOWK 364, SOWK 371, or permission of the Department.*

SOWK 379 Foundations for Social Work Practice 3 cr.
Basic procedures in social work: verbal and nonverbal communication, listening, observing, developing relationships, interviewing, and recording. Every semester. *Prerequisite: SOWK 370 or permission of the Department.*

SOWK 385 Generalist Practice with Groups 3 cr.
Study of group processes including power dynamics, curative factors, patterns of member interaction, leadership and stages of group development. Required course for Maryland Addictions Counselor certification. Also offered as PSYC 385. *Prerequisites: PSYC 150/151 and 3 additional credits in Psychology or Social Work. Sophomore standing or permission of instructor.*

SOWK 468 Sociology of Later Life 3 cr.
The dimensions of aging, including the aging process, the implications of increasing life expectancy, and societal reactions to the aged. Variable. *Prerequisite: SOCI 100 or SOCI 111.* Also offered as SOCI 468.

SOWK 470 Generalist Practice I 3 cr.
Beginning theories and techniques of social work intervention within social systems utilizing an eclectic, ecological, problem-solving approach. Every semester. *Prerequisites: SOWK 377 and 379 or permission of the Department. Enrollment limited to Social Work majors.*

SOWK 471 Generalist Practice II 3 cr.
Advanced theories and techniques of social work intervention within social systems utilizing an eclectic, ecological, problem-solving approach. Every semester. *Prerequisite or corequisite: SOWK 470 or permission of the Department. Enrollment limited to Social Work majors.*

SOWK 490 Special Topics in Social Work 1-3 cr.
Either a practicum to develop social work skills, or a content-oriented seminar to explore a topic of relevance to the Social Work profession. Does not duplicate any other course offered by the Department. Topics rotate each time the course is offered. Students may suggest topics and projects to the Department Chair. Variable. May be repeated for credit if topics are substantially different. *Prerequisite: SOWK 370 and permission of the instructor.*

SOWK 492 Social Work Seminar 3 cr.
Professional capstone course to integrate classroom and field experience. Required co-registration in SOWK 495. Graded A-F. Every semester. Enrollment limited to Social Work majors. *Prerequisites: SOWK 471, senior standing, and completion of all prerequisite major and GEP course work.*

SOWK 495 Internship in Social Work 12 cr.
Required, integral part of Social Work major. Provides semester of full-time, generalist social service activity and social work intervention. Required co-registration in SOWK 492. Graded P/F. Every semester. Enrollment limited to Social Work majors. *Prerequisites: SOWK 471; senior status; 2.5 GPA in major and overall; completion of all prerequisite major and GEP course work; attendance at orientation meeting in semester prior to internship; submission of internship application at the beginning of the semester preceding internship which includes resume. Fieldwork coordinator must approve all internships.*

SOWK 498 Readings in Social Work 1-3 cr.
Directed reading on a specific topic designed for the individual student. Summaries of readings and conclusions constitute a formal written report to be filed with the Department. Not to duplicate any other course offered by the Department. Open to any Junior or Senior Social Work major who submits a proposal to the Department. Every semester. May be repeated for credit if topics are substantially different. *Prerequisite: permission of instructor and Department Chair. Submit the proposal form (endorsed by the instructor) to the Department Chair prior to registering for the course and before the beginning of the semester.*

SOWK 499 Individual Problems in Social Work 1-3 cr.
Special research project open to any Junior or Senior Social Work major who submits a proposal prior to the semester of the project to the faculty instructor. Must result in a written analysis of research findings. Every semester. May be repeated for credit if topics are substantially different. *Prerequisite: permission of instructor and Department Chair.*

Sociology

SOCI 100 Introduction to Sociology 3 cr.
Systematic introduction to the study of society. Basic concepts, methods of study, and theories about societal structures and processes. Every semester. GEP LAC Group D. Not open to students who have credit for former SOCI 201.

SOCI 111 Honors: Introduction to Sociology 3 cr.
Basic sociological analysis through simulations, selected readings, discussions, and special topics projects. Four hrs. lecture and lab projects. Every semester. GEP LAC Group D. Not open to students who have credit for former SOCI 211.

SOCI 200 Social Problems 3 cr.
Description and analysis of conditions that societies define and treat as social problems. Analysis of selected problems. Every semester. Not open to students who have credit for former SOCI 301. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 203 Sociology of Deviant Behavior 3 cr.
Analysis of various forms of deviance in contemporary society, its functions and dysfunctions, and society's response. Every semester. Not open to students who have credit for former SOCI 303. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 224 Cultural Anthropology 3 cr.
Survey of the study of human behavior in simpler tribal and peasant societies as well as in complex civilizations. Emphasis on social change. Fall. Not open to students who have credit for former SOCI 324.

SOCI 305 Racial and Cultural Minorities 3 cr.
Analysis of minority-majority group situations, their causes and consequences. Minorities in the United States. Every fall. Not open to students who have credit for former SOCI 220 or 320. *Prerequisite: SOCI 100 or SOCI 111.* Also offered as SOWK 305.

SOCI 306 The Sociology of African Americans 3 cr.
A critical study of the organization of African-American society, its development, the endogenous structures and social processes that compose and define it, and its relationship to and interaction with the people and social forces external to it. Every spring. Also offered as SOWK 306. *Prerequisite: SOCI 100 or 111.*

SOCI 310 Statistics for Social Science 3 cr.
Study of social scientific applications of univariate, bivariate, and multivariate statistical techniques with emphasis on their logic, interpretation, and application. Three hours lecture, one hour lab. Every semester. *Prerequisite: completion of GEP math requirement.* Also offered as SOWK 310.

SOCI 311 Basic Research Methods 3 cr.
Techniques of research design: testing of hypotheses, sampling, data collection, measurement, and elementary statistical analysis. Every semester. *Prerequisite: SOCI/SOWK 310 and three courses in sociology or permission of instructor.*

SOCI 312 Applied Social Research 3 cr.
Collection and analysis of data to study applied social research problems. Research project, or participation in current research projects, required. *Prerequisite: SOCI/SOWK 310 and SOCI/SOWK 311, or permission of instructor.*

SOCI 322 Social Demography 3 cr.
A study of the measurement, analysis and explanation of population size, distribution, composition, changes and problems. Spring semester in alternate years. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 325 Community Analysis 3 cr.
A critical appraisal of community research, including comparisons of folk, rural, urban, and suburban studies; analysis of local institutional

patterns; and specific community factors such as stratification, power, and collective actions. Spring semester in alternate years. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 326 Sociology of Rural Life 3 cr.
Characteristics of rural population, social structure, and institutional arrangements and changes. Fall semester in alternate years. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 328 Sociology of Urban Life 3 cr.
A study of the city, its role in history, the problems of today, and prospects for the future. Emphasis on urbanism as a way of life. Fall semester in alternate years. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 332 Collective Behavior 3 cr.
Analysis of relatively episodic, unstructured, and unconventional forms of social behavior and their consequences. Alternate years. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 334 Gender and Social Life 3 cr.
The social construction of gender and gender-based inequalities. Focus on contemporary American society but other cultures included. Variable.

SOCI 340 Criminology 3 cr.
The social causes and consequences of criminal behavior. Criminal law, the police, courts, and correctional institutions. Every semester. *Prerequisite: SOCI 200 or SOCI 203.*

SOCI 362 Sociology of Religion 3 cr.
A comparative study of the social organization and development of religious groups. The interrelations between religion and other facets of society and social behavior. Alternate years. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 364 Marriage and Family Relationships 3 cr.
Courtship, marriage, and family relationships. Current family patterns and the feasibility of the various alternatives to marriage. Every semester. *Prerequisite: SOCI 100 or SOCI 111.* Also offered as SOWK 364.

SOCI 366 Social Inequality 3 cr.
The theory of stratification or inequality in society; relevant social policy. Emphasis on American society and current social programs addressing inequality. Variable. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 367 Sociology of Medicine 3 cr.
Organizations, personnel, issues, and problems in medical care. Social influences on health and illness. Variable. Not open to students who have credit for former SOCI 467. *Prerequisite: SOCI 100 or SOCI 111.*

SOCI 436 Sociological Aspects of Mass Communication 3 cr.
The social development of the mass media, societal influences upon them, and their effects upon society. Variable. *Prerequisite: 9 hrs. of sociology or permission of instructor.*

SOCI 442 Juvenile Delinquency 3 cr.
The social causes and consequences of juvenile delinquency. Juvenile law, the police, courts, and correctional institutions. Every semester. *Prerequisite: SOCI 340 or POSC 324 or permission of instructor.*

SOCI 443 The American Correctional System 3 cr.
The philosophies of punishment and corrections. Analysis of programs and their effectiveness for punishment and rehabilitation of convicted criminals. Every semester. *Prerequisite: SOCI 340 or POSC 324 or permission of instructor.*

SOCI 450 Classical Sociological Theory 3 cr.
Survey of sociological thought since Comte and its relevance to modern sociology. Construction of theory by students themselves. Fall. *Prerequisite: 21 hrs. in Sociology or permission of instructor.*

SOCI 451 Contemporary Sociological Theory 3 cr.
Survey of contemporary sociological thought since the mid-20th century

and its relevance to modern sociology. Construction of theory by students themselves. Spring. *Prerequisite: SOCI 450; 21 hrs. of Sociology or permission of instructor.*

SOCI 466 Women, Health and Healing 3 cr.
A feminist examination and analysis of women's experiences with health and illness, including women's roles in health care systems as patients and care providers. Variable. Not open to students who have credit for former SOCI 368. *Prerequisite: SOCI 100 or SOCI 111 and junior or senior standing or permission of instructor.*

SOCI 468 Sociology of Later Life 3 cr.
The dimensions of aging, including the aging process, the implications of increasing life expectancy, and societal reactions to the aged. Variable. *Prerequisite: SOCI 100 or SOCI 111.* Also offered as SOWK 468.

SOCI 491 Seminar in Sociology 3 cr.
Advanced studies in selected topics. Individual study and research for class reports. Formal paper required. Variable. May be repeated for credit if topics are substantially different (department chair's permission required). *Prerequisite: permission of instructor.*

SOCI 492 Internship Seminar/Research Paper 3 cr.
Academic component of internship. Required co-registration in 495. Graded A-F. Every semester.

SOCI 495 Internship in Sociology 6 or 12 cr.
Experiential component of internship; guided work experience in conjunction with 492; must directly relate to academic program. Full-time interns register for 12 credits in 495 and 3 credits in 492 and may not enroll in other courses. Part-time interns register for 6 credits in 495 and 3 credits in 492. Graded P/F. Every semester. *Prerequisites: Junior or senior status; 18 hours in sociology; 2.0 GPA in major and overall; attendance at orientation meeting in semester prior to internship; submission of internship application by fifth week of semester prior to internship; application includes (1) resumé, (2) proposal, (3) letter of acceptance from proposed agency.*

SOCI 498 Readings in Sociology 1-3 cr.
Open to any upper-level student who submits a proposal, prior to the semester of study, to the professor who will supervise the work. Department Chair's written approval of the proposal is required. Formal report of study is required and filed. Every semester. May be repeated for credit if topics are substantially different (department chair's permission required). *Prerequisite: permission of instructor.*

SOCI 499 Individual Problems in Sociology 1-3 cr.
Special research project open to any upper-level student who submits a proposal, prior to the semester of the project, to the professor who will supervise the project. Department Chair's written approval of the project is required. Formal report of the study is required and filed. Every semester. May be repeated for credit if topics are substantially different (department chair's permission required). *Prerequisite: permission of instructor.*

Theatre

You may not receive credit for both a THEA course and the same course formerly labelled CMAT, unless the course is listed as repeatable.

- THEA 104 Theatre** 1/2 to 1 cr.
Practical application of principles of acting, directing, or technical aspects, open to all students. Minimum 45 clock hours. Repeatable; 3 credits applicable to major. Every semester.
- THEA 106 Introduction to Theatre** 3 cr.
Basic elements of the theatre; play, playwright, player, director, audience, designer, and technicians. A survey of theatrical forms from ancient times to the present. GEP LAC Group A. Every semester.
- THEA 107 Introduction to Theatrical Vision** 3 cr.
A general study of design for the theatre aimed at an understanding and facility in visual thinking, visual communication, and visual evaluation. Covers general design terminology, basic design research, basic design skills, and introduction to theatre styles and conventions. Three hours lecture, one two-hour lab. GEP LAC Group A. Every semester.
- THEA 110 Introduction to Acting** 3 cr.
Introductory preparation for acting through developmental exercises. Yearly.
- THEA 204 Stagecraft** 3 cr.
Advanced study and practice in constructing, handling, rigging, and shifting scenery and properties. Attention given to techniques with metals and plastics. Fundamentals of drafting techniques for theatrical application including CAD. Work on department productions required. Two hours lecture, one two-hour studio. Yearly.
- THEA 206 Modern American Drama** 3 cr.
An introductory survey of representative American plays and playwrights of the 20th century with attention to the evolution of Modern American Theatre and analysis of the efforts of the playwright and theatrical professionals. Also offered as ENGL 306. Yearly. *Prerequisites: THEA 106 and ENGL 101.*
- THEA 208 Acting: Stanislavskian Approaches** 3 cr.
An introduction to the basic principles of the Stanislavski approach to acting and to the application of its components, including: Sense Memory, Affective Memory, Relaxation, Concentration, Justification, Improvisation and Animal Exercises. Consists of work involving various exercises - very little text or scene work will be covered. Variable. *Prerequisite: THEA 110 or permission of instructor.*
- THEA 305 Scene Design** 3 cr.
Techniques of scene design; scenic styles and forms; esthetic principles including ground plan, front and rear elevation, rendering, and building of models. Yearly. *Prerequisite: THEA 107 or permission of instructor. Recommended: THEA 204.*
- THEA 306 Stage Lighting** 3 cr.
Lighting as artistic design: theory and practice, types of equipment, use and deployment, and innovations. Yearly. Not open to students who have credit for former CMAT 306. *Prerequisite: THEA 107 or permission of instructor. Recommended: THEA 204.*
- THEA 307 Costume Design** 3 cr.
Studio course in design of costumes for theatre; visual interpretation of plays through character. History of dress; fashion effects; styles, fabric, draping, costume constructions. Yearly. *Prerequisite: THEA 107 or permission of instructor.*
- THEA 308 Directing** 3 cr.
Basic techniques for directing with practice in interpretation and staging of plays from the modern era. Every semester. *Prerequisite: THEA 106, 107, 206.*
- THEA 309 Experiments in Scripting and Staging** 3 cr.
Creating scripts from existing sources, both narrative and non-narrative, with emphasis on traditionally non-dramatic/non-theatrical material. Staging experimental performances of the scripts. Alternate years. *Prerequisite: THEA 308 and 325 or permission of the instructor*
- THEA 315 Creative Dramatics** 3 cr.
Creative dramatic activity for learning and self-development of the child. Laboratory experience in supervising creative dramatic activity. Variable. *Prerequisite: permission of instructor.*
- THEA 318 Acting: Analysis and Performance** 3 cr.
A continuation of the study of the Stanislavskian approach to acting and the application of its principles through exercises, text analysis and rehearsals of scenes from major modern realistic playwrights. Yearly. *Prerequisite: THEA 208 or equivalent.*
- THEA 319 Acting in Pre-Modern Drama** 3 cr.
Preparation for acting the classical repertoire from the Renaissance through the eighteenth century. Alternate years.
- THEA 325 Advanced Directing** 3 cr.
Directing period and modern plays of various genres in a variety of styles. Alternate years. *Prerequisite: THEA 308, 425 and permission of instructor.*
- THEA 340 Theatre Management** 3 cr.
Business management of theatre organization; budget and finances, play leasing and promotion, box office. Alternate years. *Prerequisite: permission of instructor.*
- THEA 350 Playwriting** 3 cr.
Study of the basic elements of a practice in writing for the theatre. Action, conflict, character and dialogue will be explored through building-block exercises which culminate in the writing of a one-act play. *Prerequisites: ENGL 101, THEA 206 and permission of instructor.* Alternate years. Repeatable to 6 credits.
- THEA 400 Theatre Production** 3 cr.
Practical application of the principles of theatre production on the advanced level, involving participation in actual production, classes, and workshops of university-affiliated professional theatre. May be repeated. Variable. *Prerequisite: permission of department.*
- THEA 407 Topics in Production Techniques** 2 or 3 crs.
Detailed techniques concerning a particular production subject announced in advance. Lecture and practical laboratory. Repeatable on a different topic. Variable. *Prerequisite: permission of instructor.*
- THEA 420 Marketing Yourself as an Actor** 3 cr.
An introduction to the business of acting and instruction in specific methods and strategies that the actor can implement to advance his/her career. *Prerequisites: THEA 318. Yearly.*
- THEA 425 History of the Theatre I** 3 cr.
Study of the cultural background of the theatre and the historical development of dramatic art from its beginnings to the Elizabethan period. Alternate years. *Prerequisite: THEA 106.*
- THEA 426 History of the Theatre II** 3 cr.
Study of the cultural background of the theatre and the historical development of dramatic art from the English Renaissance to modern times. Alternate years. *Prerequisite: THEA 106.*

THEA 427 History of the Theatre III 3 cr.
Study of the cultural background of theatre and the development of dramatic art in the modern era (1850 A.D. to the present). Alternate years. *Prerequisite: THEA 106.*

THEA 428 Women Through Theatre 3 cr.
Seminar providing an historical survey of women's participation in theatre, examination of images of women in dramatic literature, and exploration of the contemporary world of women in theatre and related fields.

THEA 431 World Drama I: Premodern 3 cr.
World Drama from the 5th century B.C. Greeks to the late 19th century. Representative dramatists and forms from both the West and the East. Multicultural emphasis on the use and development of drama. Alternate years. *Prerequisite: ENGL 150, 250/MDFL 150 or THEA 106 or permission of instructor. Also offered as ENGL 431.*

THEA 432 World Drama II: Twentieth Century 3 cr.
World Drama during the twentieth century. Representative dramatists and forms from both the West and the East. Multicultural emphasis on the variety of dramatic forms. Alternate years. *Prerequisite: ENGL 150, 250/MDFL 150 or THEA 106 or permission of instructor. Also offered as ENGL 432.*

THEA 465 Projects in Theatrical Design 3 cr.
Advanced design projects in scenery, lighting, or costumes. Emphasis on musical forms: opera, dance, and musical theatre. Weekly presentations. Repeatable to a maximum of 9 hrs. Variable. *Prerequisite: THEA 305, 306, or 307, and written permission of the instructor.*

THEA 466 Projects in Directing 1-3 cr.
Direction of a full-length play for public performance, preferably as part of University Theatre's "Season Too," which includes 2 productions for children and a maximum of 4 (fully-supported) other student productions annually. Admission to the class is highly competitive: (1) "Season Too" applicants *must* complete at least **two** upper-division directing classes. Preference is given to theatre majors who pursue a concentration in Directing; (2) applicants for children's productions must show a clear interest in children's theatre and, *minimally*, must have taken CMAT 308; directors of small projects designed for public performance may be considered for 1-2 credits, if appropriate course work is evident. *Prerequisites: THEA 107, 206, and 308. Additional requirements for "Season Too" projects: THEA 325 and/or 309. Admission to this course requires submission of a formal project proposal to the department at least 6 months in advance. REQUIRED: Approval by departmental committee.* Every semester (repeatable for up to 6 credits maximum).

THEA 489 Special Topics in Acting 3 cr.
Study and performance of scenes from important nonrealistic forms of drama--premodern, contemporary, or experimental. Three hrs. lecture, 1 hr. lab. Variable. *Prerequisite: permission of instructor.*

THEA 490 Special Topics in Theatre Arts 3 cr.
Research or applied experience on an announced selected topic. Variable. *Prerequisite: permission of instructor.*

THEA 492 Internship Project 3 cr.
Academic component of internship experience, in conjunction with THEA 495. Graded A through F. Every summer. *Corequisite: THEA 495.*

THEA 493 Field Work in Theatre Practice 1 to 3 crs.
Participation in production and/or management in an approved theatre or in an organization in a related communication field. Participants in a university-affiliated professional theatre may be eligible. May be repeated. Variable. *Prerequisite: permission of department.*

THEA 495 Internship in Theatre 6 or 12 crs.
Experiential component of internship: guided work experience directly related to student's academic program. Full-time interns register for 12 credits in 495, 3 credits in 492, and may not enroll in any other courses. Part-time interns must register for 6 credits in 495 and 3 credits in 492.

Graded P/F. Summer only. *Prerequisites: Junior/senior status, not on probation; declared major in theatre, minimum 12 cr., and 2.5 GPA in major; Internship Agreement Form approved by department before registering.*

THEA 499 Directed Study 1 to 6 crs.
Intensive study through faculty-directed projects or papers. Hours arranged. Variable. *Prerequisite: permission of Department Chair.*

Women's Studies

For descriptions of other Women's Studies courses, refer to the description of the Women's Studies minor and appropriate departmental course listings.

WMST 201 Introduction to Women's Studies 3 cr
A multicultural and multidisciplinary survey of the traditional assumptions about women. Students will also gain an understanding of the intersection of gender with race, class, ethnicity, religion, sexual orientation, and able-bodiedness by examining issues such as the social construction of gender; women's roles in the family, the workplace, social and political life, and the arts; the intellectual, physical, emotional, and spiritual experiences of women. Fall, even-numbered years.

WMST 301 Latin American Women's Issues 3 cr.
The history and current realities of women in Latin America with a special focus on women in the Andean region. Offered in Ecuador during Intersession.

WMST 486 Women, Science and Society 3 cr.
An interdisciplinary seminar. A study of gender-based values, beliefs, and biases that affect scientific theories and methodology. An examination of the relationship between technology and gender as it relates to work, health, education, economic status, and social mobility. Variable. *Prerequisite: junior/senior class standing.*

WMST 491 Seminar in Women's Studies 3 cr.
A synthesizing experience required of students completing a minor in Women's Studies. Specific topics will be selected. Spring, even-numbered years. *Prerequisite: 12 credit hours in Women's Studies or permission of instructor.*

WMST 494 Practicum in Women's Studies 1-6 cr.
Work experience with a federal, state or private organization that is related to Women's Studies. A maximum of three credits can be applied to the Women's Studies minor. A formal written report must be filed with the Women's Studies coordinator. Variable. Graded P/F. *Prerequisite: WMST 201, or two Women's Studies electives and permission of coordinator.*

WMST 499 Independent Study 1-3 cr.
Directed research, practicum or other individualized learning experience on a specific interdisciplinary topic in Women's Studies. Formal written report to be filed with Women's Studies program coordinator. Variable. *Prerequisites: WMST 201 and permission of coordinator.*