MALS 614 THE FRENCH REVOLUTION: IDEAS, INTERPRETATIONS AND DISSENT 3
Examines ways in which the French Revolution of 1789-1815, with all its complex events and movements, has been perceived and conceptualized by contemporaries, commentators and professional scholars. In-depth study of its literature to see how human beings invented concepts and interpretations to make sense of the French Revolution.
RESTRICTIONS: Open to MALS majors only.

MALS 615 REASON, REVOLUTION AND THE RIGHTS OF MAN 3
Examines eighteenth-century French and English movement away from Cartesian rationalism and towards a rejection of reason leading to romanticism and revolution and an application of reason leading to a discussion of civil and human rights.
RESTRICTIONS: Open to majors only

MALS 616 ON THE NATURE OF GOOD AND EVIL: INQUIRIES IN LITERATURE, PSYCHOLOGY AND RELIGION 3
Focuses on novels and plays that explore the definition of good and evil in Judeo-Christian culture. Students will read these literary works in conjunction with essays by psychologists and theologians who discuss the concept of good and evil from a variety of perspectives.
RESTRICTIONS: Open to majors only

MALS 617 AMERICAN ART IN CONTEXT 3
This course is designed to give the non-specialist in art history an understanding of how social, economic, religious, and cultural attitudes in America are reflected in its art, architecture, and decorative arts from the colonial period to the present. Discussion encompasses such subjects as patronage, regionalism, ethnicity, and gender.

MALS 618 STUDIES IN THE HISTORY OF ART 3
Selected topics in the history of art. Focuses on art in the context of cultural and social history for an advanced audience of non-specialists.
RESTRICTIONS: Open to MALS majors only

MALS 619 THE SCIENTIST IN SOCIETY 3
Scientific research is directly influenced by the society in which it is conducted. In addition to financial limitations, constraints are imposed by societal norms of what are acceptable topics and procedures for research. Focus on the philosophical basis of science as well as consequences to society of the scientific revolution.

MALS 647 PHILOSOPHY OF TECHNOLOGY 3
See PHIL647 for course description

MALS 869 MASTER'S THESIS 1-6

MALS 879 SYNTHESIS PROJECT 3-6

MATERIALS SCIENCE

MASC 302 MATERIALS SCIENCE FOR ENGINEERS 4
Crystal binding and structure, energetics and structure of lattice defects; elasticity, plasticity, fatigue, and fracture; phase equilibria and transformations; relations of structure and treatment to properties; structures of inorganic and organic polymers; and electronic and magnetic properties
PREREQ: CHEG601

MASC 406 CORROSION AND PROTECTION 3
PREREQ: Physical chemistry

MASC 601 STRUCTURE AND PROPERTIES OF POLYMER MATERIALS 3
Measurement and control of the microstructure and properties of solid polymers. Structure generation, structure-property models and effects of processing on properties. May be cross-listed with CHEG601
PREREQ: MASC302

MASC 602 STRUCTURE OF MATERIALS 3
PREREQ: MASC302

MASC 603 ANALYTICAL TECHNIQUES IN MATERIALS SCIENCE 3
Laboratory course in optical microscopy, X-ray diffraction, scanning and transmission electron microscopy, electron diffraction. X-ray fluorescence and microanalysis. Auger analysis and other spectroscopic techniques
PREREQ: MASC302 and MASC602
COREQ: MASC602
MASC 604 Phase Transformations 3
PREREQ: MASC302

MASC 606 Corrosion and Protection 3
PREREQ: MASC302

MASC 607 Physical Properties of Materials I 3
Basic models of electrical, magnetic, optical, and thermal properties of solid materials. Introduction to quantum physics to describe electronic structure of atoms, atomic bonds and crystals. Electronic, magnetic, and optical effects in metals, semiconductors, ceramics, polymers, and amorphous materials. Operation of basic electronic devices and semiconductors.
PREREQ: MASC302 and PHYS208

MASC 614 Fracture of Materials 3
Fracture mechanics, micromechanisms, nucleation and propagation of cracks, fracture toughness, ductile-brittle transitions, fatigue, stress, corrosion, irradiation effects and non-metallic materials. May be cross-listed with MEEG614.
PREREQ: MASC302

MASC 615 Mechanical Properties of Materials 3

RESTRICTIONS: Requires graduate status.

MASC 616 Chemistry and Physics of Surfaces and Interfaces 3
See CHEG616 for course description.

MASC 623 Electrical Properties of Matter I 3
See EIEG623 for course description.

MASC 624 Carrier Transport in Solids 3
Quasi-equilibrium behavior of carriers in homogeneous semiconductors, relaxation, trapping, and recombination of excess carriers; equations of continuity and their solutions; and high-field effects. Metal-semiconductor contacts: symmetric and asymmetric semiconductor homojunctions, and heterojunctions.
PREREQ: EIEG623

MASC 803 Equilibrium in Material Systems 3
PREREQ: MASC302

MASC 804 Kinetics in Material Systems 3
PREREQ: MASC302

MASC 806 Physical Properties of Solids 3

MASC 807 Physical Properties of Materials II 3
Detailed theory of thermal, electrical, magnetic and optical properties of materials. Basic formalism of quantum theory with applications to solid materials. Reciprocal space treatment of energy bands; phonon theory of lattice vibrations; scattering, absorption and emission of photons. Advanced materials and structures.
PREREQ: MASC607

MASC 811 Advanced Topics in Materials 1-3
Discussion of a topic of current interest in the science or engineering of materials.

MASC 817 Composite Materials 3
See MASC817 for course description.

MASC 821 Diffraction of Radiation by Matter 3
Theory and analysis of diffraction from ideal and imperfect crystals, gases and liquids, and other atomic aggregations.

MASC 823 Transmission Electron Microscopy in Materials Science 3

MASC 824 Advanced Carrier Transport in Solids 3
Selected topics of advanced electronic properties of semiconductors, electronic structure of bands and defects, anisotropy, semiconducting glasses, photon and phonon-induced transitions, quasi-particles, defect spectroscopy, advanced scattering of electrons, phonons, photons, multi-particle theory, nonlinear effects, high-field effects, photoadconductivity and luminescence. Recent developments.

MASC 868 Research 1-9

MASC 869 Master's Thesis 1-6

MASC 964 Pre-Candidacy Study 3-12 PF
Research and readings in preparation of dissertation topic and/or qualifying examination for doctoral students before admission to candidacy but after completion of all required course work.

RESTRICTIONS: Not open to students who have been admitted to candidacy.

MASC 969 Doctoral Dissertation 1-12 PF

MARINE STUDIES

MAST 200 Concepts in Oceanography 3
Introduction to the scientific study of oceanography. Exploration of the multi-disciplinary nature of applying fundamental physics, chemistry, biology, geology, meteorology, and mathematics to understanding the world ocean. Combined lectures with extensive video presentations illustrate field and laboratory research in oceanography.

MAST 464 Marine Science Summer Internship 1-3
Students design a research project with an advisor and present it to peers, advisors, and course instructor.

MAST 466 Independent Study 1-3

MAST 601 Introduction to Oceanography 3
Topics include the geology and history of the ocean floor, oceanic sediments, the physics of the marine environment and the oceanic circulation, chemical processes in the ocean, and biological processes and production in the oceans.

RESTRICTIONS: For non-oceanographers. Requires graduate status.

MAST 602 Physical Oceanography 3
Geographic and hydrodynamic aspects of oceanography. The geography of ocean basins, physical properties of seawater; radiation; and observed distributions of temperature, salinity, oxygen and currents. Scalar and vector fields; hydrostatics; kinematics; momentum dynamics; vorticity dynamics; viscous flow and eddy flux.

RESTRICTIONS: Requires permission of instructor.

MAST 615 Introduction to Marine Biology 3
Involves laboratory, field and lecture study for a broad understanding of marine biology and biochemistry.

RESTRICTIONS: For non-biologically oriented marine studies graduate students.

MAST 621 Coastal Field Biology 1
Hands-on study of estuarine and coastal communities with emphasis on patchiness in time and space. Instruction in field techniques as well as analysis and presentation of data. Experience in scientific writing.
PREREQ: General biology, ecology, genetics, physiology.

MAST 623 Physiology of Marine Organisms 3
Processes and mechanisms of adaptation of organisms to marine environments. Examines how environmental factors affect physiological processes in marine organisms. Lectures address physiological processes at cellular, whole organism, and habitat levels.

MAST 624 Biological Oceanography 3
Broad, multidisciplinary approach to marine life and biological processes in the oceans and estuaries. Species composition and biogeography discussed in relation to physical, chemical, and geological processes. Examines and quantifies organisms' physiological responses to the abiotic and biotic environment.

MAST 626 Topics in Halophyte Biology 1
Analysis of current research in the biology of halophytic plants. Emphasis on student seminars and group discussions of the current literature.

RESTRICTIONS: May be repeated for credit when topics vary.
MAST 627  Marine Biology  3
Ecologically oriented study of elementary oceanography, adaptive physiology, aspects of population and community ecology, reproductive and larval biology and marine production systems. Emphasis on coastal and estuarine habitats including soft- and hard-substrate intertidal regions, subtidal regions and coral reefs.
PREREQ: General Biology, Ecology, Genetics, and Physiology
RESTRICTIONS: Requires permission of instructor

MAST 629  Topics in Marine Ecology  1-3
Selected topics in marine ecology and physiology. Topics may vary and will be announced in the registration booklet.
RESTRICTIONS: Requires permission of instructor. May be repeated for credit when topics vary.

MAST 631  Marine Geology  3
See GEOI631 for course description

MAST 633  Image Processing  3
See ELEG633 for course description.

MAST 634  Marine Biochemistry  3
Addresses biochemical processes and enzyme, metabolic and structural adaptations of marine plants and animals. Discussions on topics such as enzyme kinetics, enzyme structure and metabolic pathways to organisms in the marine environment.
RESTRICTIONS: Requires sufficient background in chemistry and permission of instructor

MAST 635  Turbulence in the Environment  3
Fundamentals of turbulence including the dynamics of vorticity, the cascade of energy and the theory of Kolmogorov, turbulent diffusion and turbulence in density stratified flows. Applications to many engineering disciplines as well as to meteorology and oceanography.

MAST 636  Applied Ocean Science Seminar  1
Invited speakers from university, industry and government research laboratories will discuss the latest advances in modeling and measurement of physical and biological properties of the oceans and coastal regions. Use of satellite remote sensing data and acoustic data in studies of ocean currents, waves, air-sea interaction turbulence, pollutant dispersion and coastal productivity will be emphasized.

MAST 640  Opto-Electronics  3
See ELEG640 for course description

MAST 645  General Oceanography  3
Introduction to the science of oceanography, emphasizing the physical and natural sciences nature of the subject matter and application to social schemes.
RESTRICTIONS: Offered off-campus, for public school teachers and general public.

MAST 646  Chemical Oceanography  3
Composition of seawater; physicochemical properties of seawater distributions of gases, nutrients and trace metals; and effect of biological processes on seawater composition.
PREREQ: CHEM103 and CHEM104

MAST 647  Physical Chemistry of Seawater  3
Introduction to chemical equilibria in seawater. Topics include electrolyte theory, gas solubility, chemical speciation, acid-base equilibria and the carbon dioxide system. Emphasizes use of computer techniques to study oceanic chemical processes.
PREREQ: One year of chemistry.
RESTRICTIONS: Computer experience not required.

MAST 650  Clay Mineralogy  3
Crystallography, chemistry, physical properties, occurrence, and alteration of the clay and related minerals; theory and techniques of identification, characterization, and quantitative analysis using x-ray diffraction and electron microscopy; and cation exchange and size characteristics of clay minerals. Discussion of related topics, colloidal chemistry, thixotropic behavior, etc. May be cross-listed with GEOI650 and/or PLSC650

MAST 670  Introduction to Marine Policy  3
Provides an overview of conceptual approaches and analytical tools used in the field as well as an overview of major substantive areas of marine policy. Covers (mainly in a U.S. context) fisheries management, marine minerals exploitation, coastal management, marine transportation and naval power.

MAST 671  Coastal Processes and Management  3
Introduction to key processes operating in the coastal zone and to management techniques appropriate to these processes and environments. Emphasis on policy, regulatory and intergovernmental complexities that characterize coastal zone management in the United States and in other coastal nations.

MAST 672  Applied Policy Analysis  3
Empirical analysis of environmental and natural resource policy issues. Topics include valuation of natural resources, decision making under uncertainty, dynamic control and intertemporal issues in resource use and institutional aspects of policy analysis. May be cross-listed with ECON670.
PREREQ: ECON401

MAST 673  International Law  3
Origins, sources and applications of law to international relations, including the nature of treaties, the legal powers of states and international organizations, jurisdiction and immunity, and the role of international courts. Special attention given to the law of the sea for navigation, fisheries conservation, mineral exploitation and environmental protection. May be cross-listed with POSC604.
RESTRICTIONS: Requires permission of instructor.

MAST 674  Legal Aspects of the Coastal Zone  3
Examines basic legal doctrines and public policy implications relevant to the development of ocean policy in the United States. Use, ownership and control of water and land beneath and bordering upon water; relationships between the states and the federal government in areas of marine affairs; environmental protection and legal controls of water pollution.
RESTRICTIONS: Requires permission of instructor.

MAST 675  Economics of Natural Resources  3
Study of the allocation of natural resources, especially marine and coastal zone resources, in modern economies. Application of economic theory to the problems of misallocations and the means of correction, under both free and planned markets. May be cross-listed with ECON675.
RESTRICTIONS: Requires permission of instructor.

MAST 676  Environmental Economics  3
Study of the choice of policies to protect the environment, including land, air and water resources and the costs and benefits of pollution. May be cross-listed with ECON676.
PREREQ: ECON401

MAST 677  Ocean Law and Policy  3
Focuses on understanding the strengths and weaknesses of the legal framework which governs ocean resources and ocean space beyond the limits of national jurisdiction. Evaluates international conventions which pertain to the ocean as to their impact and effectiveness.

MAST 678  Admiralty and Maritime Law  3
An introduction to admiralty and maritime law, including jurisdiction and decisions on carriage of goods by sea, maritime liens, torts against seamen, salvage, marine pollution, and marine insurance, with study of public policy issues. May be cross-listed with POSC678 and/or URAF678.

MAST 679  Shipping and Port Management  3
A seminar to study the structure and management of the shipping industry and ports, policies for ocean commerce, international trade, and merchant marine. May be cross-listed with POSC679.

MAST 680  Introduction to Applied Ocean Science  3
Basic quantitative and empirical description of the behavior of solids, fluids and engineering materials. Corrosion and environmentally induced forces. Development, design, construction and operation of marine structures, transportation energy and aquatic production systems. Role of remote sensing.
RESTRICTIONS: Requires permission of instructor. Not open to applied ocean science or engineering majors.

MAST 681  Remote Sensing of Environment  3
Detection and mapping of land and ocean resources with optical, infrared and microwave sensors. Digital analysis of satellite images using multispectral and spatial analysis techniques and correlation with ground and ship data. Application to oceanography, coastal processes, geology, land use, geography, agriculture, climate and pollution studies. May be cross-listed with ELEG681 and/or GEOG681.
RESTRICTIONS: Requires permission of instructor.

MAST 682  Current Topics in Applied Ocean Science  1-3
Advanced treatment of selected areas of the applied ocean sciences, including acoustic wave propagation; remote sensing of physical biological properties of the oceans; experimental fluid dynamics; coagulation of suspended materials; and marine corrosion/biofouling.
RESTRICTIONS: May be repeated with each change of topic.

MAST 683  Structural Materials in Seawater  3
Electrochemical, physical and biological interactions of metals, polymers, concrete, wood and composites with seawater. Emphasis on materials selection and deterioration prevention measures.
PREREQ: CHEM101
RESTRICTIONS: For students with little or no background in material science. Not for credit for students that passed MASC302.

MAST 684  Particles in the Aquatic System  3
Deals with all aspects of particle flocculation that occur within the bounds of the natural environment. Brings together a number of fields (physics, engineering, chemistry and biochemistry) the theories, equations and principles that bear on the natural aquatic environment.
RESTRICTIONS: Requires permission of instructor.
MAST 685 Underwater Acoustics 3
Principles of underwater acoustics, including history and basic concepts; the sonar equation; propagation of underwater sound in the sea; reflection and scattering; sonar background noise; detection of signals in noise; sonar systems; system requirements and operations; and signal processing and display.

MAST 686 Remote Sensing Seminar 1
Basic and applied research topics in remote sensing of earth resources, coastal processes, estuarine productivity, ocean dynamics and climatic effects presented by University students, faculty and guest speakers. Stresses advanced data acquisition and spectral and spatial image analysis techniques.
RESTRICTIONS: May be repeated for credit when topics vary.

MAST 687 Colloidal Science Seminar 1
Basic scientific and applied research topics in colloidal science presented by University students, faculty and guest speakers. Stresses the processes related to fine particles in the marine environment.
RESTRICTIONS: May be repeated for credit when topics vary.

MAST 800 Dynamic Physical Oceanography 3
Topics include basic definitions, conservation of mass, conservation of momentum, conservation of vorticity, horizontal frictionless flow, wind-driven circulation, stability and double diffusion, thermohaline circulation and sides.
RESTRICTIONS: Requires permission of instructor.

MAST 804 Air-Sea Interaction 1 3
Atmospheric surface layer above and aequous boundary layer below the air-sea interface, and laboratory.
RESTRICTIONS: Requires permission of instructor.

MAST 806 Geophysical Fluid Dynamics I 3
Development of the fundamental fluid dynamics used in analyzing flows in physical oceanography and meteorology. Fundamentals of vorticity dynamics and geostrophy, inviscid theory of Rossby waves, and Ekman boundary layers.
PREREQ: MEEG863 and MEEG864.

MAST 807 Geophysical Fluid Dynamics II 3
Investigation of fundamental topics in the dynamics of waves and circulation in dynamical physical oceanography and meteorology. Wind-driven ocean circulation, quasi-geostrophic motion of a stratified fluid, and instabilities.
PREREQ: MAST606.

MAST 808 Coastal/Estuarine Physical Dynamics 3
Coastal and estuarine dynamics covering continental shelf wind-forced circulation; continental shelf waves; modes of estuarine circulation; shelf estuary interaction; shelf break frontal dynamics; and estuarine and river plume fronts.
PREREQ: MAST602.

MAST 809 The Ocean and Climate Variation 3
Study of the ocean-atmosphere system; the fluxes of heat, water and energy in the ocean and interchanges with the atmosphere; budgets and mechanisms of exchange; and annual and long-term climate variations as related to the ocean.
PREREQ: MAST602.

MAST 810 Numerical Ocean Modeling 3
Application and analysis of numerical techniques for simulating time-dependent fluid flow in two and three dimensions with specific application to large-scale ocean flows. Covers finite-difference, finite-element and spectral techniques. Computer implementation of at least one example problem.
PREREQ: MAST807 and MATH610.
RESTRICTIONS: Requires proficiency in FORTRAN, C or Pascal.

MAST 811 Oceanographic Time Series Analysis 3
Quantitative techniques for data processing and time series analysis. Topics include basic definitions, linear systems, digital filters, statistical techniques, auto-spectrum estimation, cross-spectrum estimation, Monte Carlo technique, empirical orthogonal function analysis and rotary spectrum estimation.
RESTRICTIONS: Requires permission of instructor.

MAST 816 Biological Oceanographic Process 1-4
Multidisciplinary approach to the abundance and distribution of organisms in the oceans, the physiological and behavioral responses of organisms to the abiotic and biotic environment and the role of organisms in modifying the environment. Taught as six modules: algae, bacteria, protozoa, zooplankton, benthos, fish and fisheries.
PREREQ: General Biology, Ecology, Microbiology, and Invertebrate Biology.
RESTRICTIONS: May be repeated for credit when topics vary.

MAST 820 Experimental Design Seminar 1
Forum for presentation of research plans or results with emphasis on experimental design and data analysis. Ensuring discussion aids preparation of research proposals and sharpen critical assessment of own and colleagues' work.

MAST 821 Marine Biology/Biochemistry Seminar 1
With each offering, addresses a different specific topic, e.g., tropical marine biology, larval dispersal, estuarine productivity, etc.
RESTRICTIONS: May be repeated for credit when topics vary.

MAST 823 Phytoplankton Biology 3
Comprehensive treatment of the structure, biochemistry, physiology and ecology of phytoplankton to understand its distribution and growth in the sea. Aspects include spatial and temporal variations of phytoplankton biomass and production; mathematical descriptions of growth, photosynthesis and nutrient uptake; mechanisms of physiological adaption to environmental variables; and structural and biochemical bases of phytoplankton taxonomy and biogeochemistry.
PREREQ: MAST624.

MAST 827 Current Topics in Marine Biology 1-4
Subject areas change each term and will be announced in the registration booklet. Topics include aspects of plant biology, fish and invertebrate ecology and other aspects of marine ecology. May include lectures, tutorials and demonstration of techniques.
RESTRICTIONS: Requires permission of instructor. May be repeated for credit when topics vary.

MAST 828 Current Topics in Marine Biochemistry 1-4
Subject areas change each term and will be announced in the registration booklet. Topics include marine chemical ecology, marine natural products chemistry, marine biochemistry of marine plants and animals. May include lectures, tutorials and demonstration of technique.
PREREQ: Graduate course in biochemistry.
RESTRICTIONS: May be repeated for credit when topics vary.

MAST 831 Estuarine and Shelf Geological Oceanography 3
Origin, distribution and character of sediments deposited in the estuarine and shelf environment. Identifies interaction of sediments and physical, biological and chemical processes.
PREREQ: MAST631 and GEO631.

MAST 847 Current Topics in Chemical Methods in Oceanography 1-3
Principles, capabilities and limitations of analytical methods to the chemistry of marine waters and sediments. Analytical methods include: electrochemical, spectroscopic, chromatographic, electron microscopy and surface techniques. Emphasis on the analysis of trace components (biochemical, inorganic and organic) in the marine environment. Laboratory experiments. Topics vary and will be announced in the registration booklet.
PREREQ: MAST646 or analytical chemistry.
RESTRICTIONS: May be repeated for credit when topics vary.

MAST 848 Geochemical Oceanography 3
Chemical origin and formation of the ocean; chemistry of marine sediments; transfer of chemicals to and within the sea (weathering and global cycles); marine precipitates; chemical principles of marine geological reactions (solubility and redox); sediment diagenesis and pore water chemistry; and use of stable and radioisotopes in the oceans.
PREREQ: Aquatic Chemistry and Physical Chemistry.

MAST 849 Organic Chemical Oceanography 3
Covers descriptive organic chemical studies of seawater and processes that influence organic reactions in seawater. Laboratory devoted to methodology for analyses of organic compounds in seawater and marine organisms.
PREREQ: Organic Chemistry.

MAST 850 Marine Inorganic Chemistry 3
Principles of inorganic chemistry are used to explain and to understand the speciation and reactivity of the elements in the marine environment. Emphasis on the mechanistic aspects of important marine processes including mineral dissolution and formation, electron transfer reactions and the role of metals in biochemical reactions. May be cross-listed with CHEM655.
PREREQ: MAST646. aquatic chemistry or physical chemistry.

MAST 853 Oceanography Seminar 1
A review of current oceanographic literature through student presentations.
RESTRICTIONS: May be repeated for credit when topics vary.

MAST 854 Marine Sedimentary Geochemistry 3
Fluxes of major, minor, trace and nutrient elements from ocean waters to marine sedimentary deposits, with emphasis on the deposition of material on the ocean floor, the reaction and transport regimes in sediments that redistribute this material, and return fluxes from sediments to the overlying water.
PREREQ: MAST646.

MAST 856 Biogeochemical Oceanography 1-4
Modular graduate seminar of individual offerings inspects aspects of marine biogeochemical cycle. Includes such topics as atmospheric and oceanic fluxes, climatic feedback controls involving the ocean, and the role of the marine environment in global change.
RESTRICTIONS: May be repeated for credit when topics vary.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 105</td>
<td>Intermediate Algebra</td>
<td>Establishes, or reestablishes, the background of those who desire to take College Algebra. Experience indicates that many persons who need college mathematics are not able to proceed because of a deficient background.</td>
</tr>
<tr>
<td>MATH 114</td>
<td>College Mathematics and Statistics</td>
<td>Basic algebra skills and concepts with a strong emphasis on graphing and applications in the areas of management, life, and social sciences. Topics include exponential functions, logarithms, and sequences.</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Pre-Calculus</td>
<td>Develops concepts required for calculus around the unifying notions of a function and the graph of a function.</td>
</tr>
<tr>
<td>MATH 170</td>
<td>Pre-Calculus with Analytic Geometry</td>
<td>Develops concepts required for calculus around the unifying notions of a function and the graph of a function.</td>
</tr>
<tr>
<td>MATH 172</td>
<td>Algebra and Precalculus</td>
<td>Mastery-based algebra review followed by concepts required for MATH221 developed around functions and their graphs (polynomial, rational, logarithmic, and exponential).</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Calculus</td>
<td>Topics include functions, graphing functions, limits, derivatives, series, exponential and logarithmic functions, and integration.</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Calculus II</td>
<td>Topics include integration, Taylor polynomials, series, multivariable calculus, and trigonometric functions.</td>
</tr>
<tr>
<td>MATH 230</td>
<td>Finite Mathematics with Applications</td>
<td>Set theory, probability, optimization, linear programming, and an introduction to matrix methods.</td>
</tr>
<tr>
<td>MATH 241</td>
<td>Analytic Geometry and Calculus A</td>
<td>Functions, limits, continuity, derivatives, and definite integrals.</td>
</tr>
<tr>
<td>MATH 242</td>
<td>Analytic Geometry and Calculus B</td>
<td>Exponential, logarithmic, and trigonometric functions.</td>
</tr>
<tr>
<td>MATH 243</td>
<td>Analytic Geometry and Calculus C</td>
<td>Vectors, partial derivatives, multiple integrals, line integrals, and Green’s Theorem.</td>
</tr>
</tbody>
</table>

**Mathematics Department**

**Restrictions:**
- Only three credits from any combination of MATH114, MATH115, MATH170, MATH171, and MATH172 can count toward graduation.
- Credit cannot be received for both MATH210 and MATH230.
- Credit cannot be received for both MATH221 and MATH242.
- Credit cannot be received for both MATH242 and MATH222.
MATH 251 Mathematics for the Elementary School I 3
Basic number concepts: numeration, whole numbers, integers, rational numbers, real numbers and arithmetic procedures.

MATH 252 Mathematics for the Elementary School II 3
Continuation of MATH 251
PREREQ: MATH 251

MATH 260 Basic Concepts of Analysis 3
The notion of limit, continuity, convergence, uniform continuity, least upper bound, greatest lower bound, compactness and connectedness
PREREQ: MATH 243

MATH 280 Insights into Mathematics 3
A basic course. Mathematics presented as a human endeavor. Topics include problem solving, reasoning and modeling
PREREQ: MATH 114 or MATH 115
RESTRICTIONS: For liberal arts students not necessarily planning further study in mathematics.

MATH 302 Ordinary Differential Equations 3
Solutions of ordinary differential equations of first and second order; and applications, Laplace transforms, Fourier series and power series solutions
PREREQ: MATH 243
RESTRICTIONS: Credit not given for both MATH 302 and either MATH 341 or MATH 342

MATH 303 Differential Equations Computing Lab 1
Provides computing experience in differential equations
COREQ: MATH 302

MATH 305 Applied Mathematics for Chemical Engineering 3
A special applied mathematics course designed for chemical engineering majors
Emphasis is given on the interaction between mathematical theory and its engineering applications
PREREQ: MATH 302
RESTRICTIONS: For chemical engineering majors (Seniors) only

MATH 315 Discrete Mathematics II 3
Algorithmic graph theory, correctness and complexity of algorithms, recurrence relations, numerical algorithms, algorithms for polynomials (such as Horner’s method)
PREREQ: MATH 210 and MATH 241

MATH 341 Differential Equations with Linear Algebra I 3
Topics include first and second order differential equations, systems of algebraic equations, determinants, vector spaces, eigenvalues and eigenvectors of matrices and systems of differential equations
Emphasis on the interaction between these topics and appropriate physical systems
PREREQ: MATH 242
RESTRICTIONS: Credit not given for both MATH 302 and MATH 341, or both MATH 349 and MATH 342

MATH 342 Differential Equations with Linear Algebra II 3
A continuation of MATH 341. Topics include series solutions, Laplace transform methods, boundary value problems, orthogonalities, higher order equations, difference equations and numerical techniques
Continued emphasis on the interaction between these topics and physical systems
PREREQ: MATH 341
RESTRICTIONS: Credit not given for both MATH 349 and MATH 342, or both MATH 302 and MATH 342

MATH 349 Elementary Linear Algebra 3
Systems of linear equations, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors
PREREQ: MATH 230 OR MATH 242
RESTRICTIONS: Credit not given for both MATH 349 and either MATH 341 or MATH 342

MATH 366 Independent Study 1-6

MATH 379 Problem Solving Strategies 1
Studies a multitude of problem solving strategies such as looking for a pattern, making a model, working backwards, etc
COREQ: MATH 380
RESTRICTIONS: Requires permission of the Committee on Secondary School Mathematics
Not for major (B A or B S ) or minor credit in Mathematical Sciences

MATH 380 Approaches to Teaching Math 3
Aims, course planning, instructional strategies, evaluation and selection of materials for teaching mathematics in secondary schools
COREQ: MATH 379
RESTRICTIONS: Requires permission of the Committee on Secondary School Mathematics
Not for major (B A or B S ) or minor credit in Mathematical Sciences

MATH 381 Practicum in Secondary Mathematics 1 PF
Teaching experience in a clinical setting. The Math Center. Helps develop an enquiring attitude: to be a perceptive observer of the learning behaviors of those taught; one must develop hypotheses about the causes of misconceptions, means of diagnosing them and methods of treatment (including uses of technology)
COREQ: MATH 243
RESTRICTIONS: Requires permission of the Committee on Secondary School Mathematics
Not for major (B A or B S ) or minor credit in Mathematical Sciences

MATH 389 Graph Theory 3
Basic graph theory (paths and circuits, trees and forests, connectivity and coloring theorems) and network flow theory. Applications to areas such as economics, engineering, chemistry and sociology
PREREQ: MATH 210

MATH 401 Advanced Calculus 3
A rigorous treatment of one variable calculus. Topics will include sequences of real numbers, limit theorems, monotone sequences, Cauchy sequences, Bolzano-Weierstrass Theorem, continuity, uniform continuity, differentiability and Riemann integral
PREREQ: MATH 245

MATH 426 Introduction to Numerical Analysis and Algorithmic Computation 3
Direct and iterative methods for solution of algebraic equations and systems of linear equations, matrix inversion, pseudo-inverses, algebraic eigenvalue problems, linear least-squares problems and nonlinear equations. Stresses both numerical analysis and algorithmic aspects. May be cross-listed with CISC 410
PREREQ: MATH 349 and CISC 105
RESTRICTIONS: Requires familiarity with computing (e.g., programming language)

MATH 428 Algorithmic and Numerical Solution of Differential Equations 3
Algorithms for numerical integration and differentiation. Initial value problems; boundary value problems in ordinary differential equations; finite difference (explicit and implicit) methods; polynomial and spline approximation; finite elements and collocation; and introduction to numerical methods for partial differential equations. May be cross-listed with CISC 411
PREREQ: MATH 426 or CISC 410

MATH 450 Abstract Algebra 3
Integers, modular arithmetic, euclidean algorithm and chinese remainder theorem, polynomial rings, including the fundamental theorem of algebra and lagrange interpolation
Introduction to field theory, primitive elements and simple extensions
PREREQ: MATH 349

MATH 451 Abstract Algebra I 3
Basic properties of the integers and the rationals, fields of quotients, polynomial rings, including the fundamental theorem of algebra and lagrange interpolation
Introduction to field theory, primitive elements and simple extensions
PREREQ: MATH 349 and MATH 260

MATH 466 Independent Study 1-6

MATH 503 Advanced Calculus for Applications 3
Multivariable calculus, vector calculus, infinite series, uniform convergence and fourier analysis
PREREQ: MATH 302

MATH 508 Introduction to Complex Variables and Applications 3
Introduction to analytic functions, contour integration, power series, residues and conformal mapping
PREREQ: MATH 243

MATH 510 Modeling and Analysis of Environmental Systems 3
An elementary course to introduce basic analytical and numerical methods for studying mathematical problems arising in environmental sciences
PREREQ: MATH 242 or equivalent
RESTRICTIONS: Open to Environmental Science graduate students or by consent of instructor

MATH 514 Topics in Advanced Mathematics for Engineers 3
Basic methods of analysis: introduction to complex variables; special functions including Bessel functions and Legendre polynomials; Fourier series and integrals, partial differential equations; and emphasis on engineering applications
PREREQ: MATH 302
RESTRICTIONS: For engineering students

MATH 518 Mathematical Models and Applications 3
Illustration and analysis of mathematical models for problems in the biological, physical and social sciences
PREREQ: Either MATH 230, or MATH 349 and STAT 370
MATH 529 LINEAR PROGRAMMING: METHODS AND APPLICATIONS
Theory of linear programming (linear inequalities, convex polyhedra, duality), related topics (games, integer programming), main algorithms (simplex, dual) and representative applications in agriculture, economics, engineering, operations research and mathematics. Familiarity with computer implementation of IP methods acquired by individual (or small group) projects of applying IP to the students' chosen areas.
PREREQ: MATH349

MATH 540 GEOMETRY
Axiomatic systems; transformations; Euclidean, projective and hyperbolic geometry.
PREREQ: MATH349
RESTRICTIONS: Graduate credit only for teachers

MATH 555 APPLIED CALCULUS FOR BUSINESS AND ECONOMICS
Acelerated version of the usual two-semester undergraduate preparation in calculus.
RESTRICTIONS: Requires high school algebra. Designed for students enrolling in the MBA program.

MATH 600 FUNDAMENTALS OF REAL ANALYSIS
Rigorous introduction to classical real analysis. Brief review of real numbers and a thorough discussion of the basic topology of metric spaces. Covers in detail the following topics: the analysis of sequences and series, continuity, differentiation and Taylor's theorem, and the analysis of sequences and series of functions.
PREREQ: MATH245

MATH 602 ADVANCED CALCULUS - INTRODUCTION TO ANALYSIS II
Continuation of MATH600 or MATH601.
PREREQ: MATH600

MATH 605 APPLIED FUNCTIONAL ANALYSIS
Introduction to formulation and solution of problems of engineering and science by means of functional analytic methods in Hilbert and Banach spaces. Includes boundary and initial value problems in ordinary and partial differential equations as well as integral equations. Emphasis on constructive techniques: variational methods, approximate solutions, bounds for eigenvalues, etc.
PREREQ: MATH514, PHYS508, MEEG864 or advanced calculus

MATH 609 INTERMEDIATE ORDINARY DIFFERENTIAL EQUATIONS WITH APPLICATIONS
Theory and applications of ordinary differential equations; existence theorems of linear and nonlinear systems, oscillation theorems, stability theory, and Sturm-Liouville theory.
PREREQ: MATH302, MATH349 and one semester of advanced calculus.

MATH 610 INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS WITH APPLICATIONS
Introduction to partial differential equations; equations of mathematical physics and their classical theories emphasizing boundary and initial value problems and their interpretations.
PREREQ: One semester of advanced calculus.

MATH 611 INTRODUCTION TO NUMERICAL ANALYSIS AND SCIENTIFIC COMPUTING I
Introduction to numerical computing, analysis and solution of systems of linear equations, least squares, eigenvalue problems, methods for unconstrained optimization, solution of systems of nonlinear equations, experience with standard computer packages, code development and simulations of applied problems.
PREREQ: MATH503 or MEEG863 or PHYS207

MATH 612 INTRODUCTION TO NUMERICAL ANALYSIS AND SCIENTIFIC COMPUTING II
Approximation, interpolation, data fitting and smoothing, numerical methods for ordinary differential equations. Additional topics treated at discretion of instructor. Experience with standard computer packages, code development and simulations of applied problems.
PREREQ: MATH503 or MEEG863 or PHYS207

MATH 613 APPLIED SYMBOLIC COMPUTATION
See CIS/CSE 223 for course description.

MATH 616 INTRODUCTION TO APPLIED MATHEMATICS I
Introduction to formulation of mathematical problems for systems of interest outside mathematics, particularly those from engineering and physics, systems studied vary; emphasis on interplay between system and mathematical model.
PREREQ: One semester of advanced calculus and PHYS208

MATH 617 INTRODUCTION TO APPLIED MATHEMATICS II
Methods of attack on mathematical problems for systems of interest outside mathematics; calculus of variations techniques; interpretation of solutions to problems in terms of systems.
PREREQ: MATH616
RESTRICTIONS: Familiarity with systems treated acceptable in lieu of Prereq
MATH 815  Functional Analysis  3  
Topological vector spaces with short introductory review of Banach spaces.
PREREQ: MATH602.

MATH 818  Theory of Ordinary Differential Equations  3  
Linear systems with isolated singularities and systems with periodic coefficients; bound-
ary value problems; Poisson-Bendixson theory.
PREREQ: MATH609 and MATH805.

MATH 819  Theory of Ordinary Differential Equations  3  
Singular Sturm-Liouville theory; asymptotic behavior of linear and nonlinear systems; and
topics of current research.
PREREQ: MATH818.

MATH 822  Integral Equations  3  
Fredholm and Hilbert-Schmidt theories of Fredholm integral equations of the second kind.
Equations of the first kind; Volterra equations; Nonlinear eigenvalue problems; Applica-
tions to physics and engineering.
RESTRICTIONS: Requires permission of instructor.

MATH 823  Integral Equations  3  
Singular integral equations (Carleman and Wiener-Hopf equations). Nonlinear integral
equations (Volterra and Hammerstein equations). Nonlinear singular integral equations.
Applications to physics and engineering (the nonlinear oscillator, the airfoil equation, the
Tricomi Problem in partial differential equations, etc.)
PREREQ: MATH822.

MATH 824  Topics in Applied Mathematics  3  
Topics chosen from asymptotic analysis, elasticity, electromagnetic theory, fluid dynam-
ics, optimal control theory and other areas.
RESTRICTIONS: Requires permission of instructor.

MATH 827  General Topology I  3  
Generation and properties of topological spaces. Continuity, separation and countability
properties; and convergence of nets and filters.

MATH 828  General Topology II  3  
Compactness and connectedness, metrization, uniform spaces and basic homotopy theory.
PREREQ: MATH827.

MATH 835  Partial Differential Equations I  3  
First order differential equations and systems. Existence and uniqueness for elliptic, parabol-
ic and hyperbolic equations. Boundary and initial value problems for equations of hyper-
bollic and parabolic type in two independent variables. Classical approaches employed.
PREREQ: MATH610.

MATH 836  Partial Differential Equations II  3  
Cauchy's problem and initial boundary value problems for hyperbolic and parabolic equations
PREREQ: MATH835 and MATH805.

MATH 838  Numerical Methods for Partial Differential Equations  3  
Introduces concepts of consistency, stability and convergence of numerical schemes.
Emphasis on various finite difference schemes and their applications to fundamental par-
tial differential equations.
PREREQ: MATH610.

MATH 839  Numerical Methods for Partial Differential Equations  3  
Emphasis on finite element method and its applications to physical problems.
PREREQ: MATH838.

MATH 845  Group Theory with Applications  3  
Groups acting on sets, the class equation, Sylow's theorems, free groups, classical
groups, Polya enumeration theory, groups and graphs, Frieze groups and crystallo-
graphic groups, and the group Snapack problem.
PREREQ: MATH650.

MATH 846  Field Theory with Applications  3  
Field extensions, structure of finite fields, and basics of Galois theory. Applications of
finite fields to block designs and finite geometries. Additional applications may include
impulse response sequences, pseudorandom sequences, algebraic coding theory (BCH and
Goppa codes) and cryptosystems.
PREREQ: MATH650, MATH672, and MATH845.

MATH 850  Foundation of Probability Theory  3  
Mathematically rigorous treatment of the foundations of probability theory. Families of
sets, semiring and sigma algebras, axioms of probability, and extension theorem. Ran-
dom variables; probability distributions, and modes of convergence for sequences of
random variables. Product measure and independence and conditional expectation.
The weak and strong laws of large numbers, the central limit theorem and the law of the iter-
ated logarithm.
PREREQ: MATH650 and MATH805.

MATH 851  Stochastic Processes  3  
Mathematically rigorous treatment of stochastic processes. Course content: general anti-
nations, separability, Kolmogorov consistency condition. Markov processes and Brownian
motion. In-depth discussion of topics such as weak convergence of processes, martingale
theory, diffusion processes or second order processes, as announced by instructor.
PREREQ: MATH650.

MATH 868  Research  1-6

MATH 869  Master's Thesis  1-6

MATH 870  Reading in Mathematics  1-6

MATH 887  Mathematical Methods of Physics and Engineering  3  
Green's function and eigenfunction expansions for boundary value problems, theory of
distributions, weak solution, metric spaces, contractions, integral equations and Hilbert
spaces.
PREREQ: MATH503, MATH508 or MEEG863, MEEG864 or PHYS507, and PHYS508.

MATH 964  Pre-Candidacy Study  3-12 PF  
Research and readings in preparation of dissertation topic and/or qualifying examination-
tions for doctoral students before admission to candidacy but after completion of all
required course work.
RESTRICTIONS: Not open to students who have been admitted to candidacy.

MATH 969  Doctoral Dissertation  1-12 PF

MECHANICS

MECH 305  Fluid Mechanics  3  
Incompressible fluid mechanics: fluid statics, control volume analysis of fluid flows, differ-
ential analysis of inviscid and viscous fluid flows and dimensional analysis.
PREREQ: CIEG212 or MEEG213 and MATH302.
COREQ: MECH306.

MECH 306  Fluid Mechanics Laboratory  1  
Experiments in fluid mechanics.
COREQ: MECH305.

MEDICAL TECHNOLOGY

MEDT 100  Introduction to Medical Technology  1 PF  
Orientation to profession of Medical Technology.

MEDT 366  Independent Study  1-6

MEDT 370  Phlebotomy Practicum  1 PF  
Supervised clinical experience in the application of laboratory theory and techniques in
phlebotomy.
COREQ: MEDT400.
RESTRICTIONS: Open to medical technology majors only.

MEDT 372  Diagnostic Parasitology  2  
Study of human parasites, emphasizing detection and identification of diagnostic forms.
RESTRICTIONS: Open to Medical Technology majors only.

MEDT 376  Clinical Virology and Immunology  2  
Fundamentals of diagnostic virology, chlamydiology and serology, including theory, dis-
ease correlation, laboratory techniques and safety.
RESTRICTIONS: Open to Medical Technology majors only.

MEDT 378  Clinical Laboratory Computer Applications  2  
Introduction to the use and application of computers in the clinical laboratory.
RESTRICTIONS: Open to Medical Technology majors only.

MEDT 400  Urinalysis and Body Fluids  3  
The study of routine urinalysis examination, renal function and body fluid testing procedures.
RESTRICTIONS: Open to Medical Technology majors only.

MEDT 401  Clinical Physiological Chemistry  1  4  
Introduction to basic laboratory principles, mathematics, quality control and spectropho-
tometry. Application and theory of manual and automated techniques used in diagnostic
and therapeutic medicine. Emphasis on clinical procedures for carbohydrates, proteins,
lipids, inorganic ions, blood gases and pH, and electrolytes.
RESTRICTIONS: Open to Medical Technology majors only.

MEDT 402  Medical Mycology  1  
Epidemiology, pathology and diagnosis of human mycoses. Identification of pathogenic
and saprophytic fungi found in clinical specimens.
COREQ: MEDT412.
RESTRICTIONS: Open to Medical Technology majors only.
MEDT 403  CLINICAL PHYSIOLOGICAL CHEMISTRY II  4
Application and theory of methodologies in enzymology, endocrinology and toxicology
Relationship of normal and abnormal laboratory findings in organ functional tests
PREREQ: MEDT401

MEDT 404  HEMATOLOGY I  2
Quantitative and qualitative study of the formed elements of the blood with emphasis on the
normal state, as well as the study of normal and abnormal coagulation and hemostasis
RESTRICTIONS: Open to Medical Technology majors only

MEDT 405  HEMATOLOGY II  2
Study of the pathophysiology of erythrocytic and leukocytic disorders and the laboratory
findings of these disorders
PREREQ: MEDT404

MEDT 406  MEDICAL MICROBIOLOGY  3
Study of the occurrence and pathogenesis of human infections and microorganisms associated with humans in health and disease
RESTRICTIONS: Open to Medical Technology majors only

MEDT 407  DIAGNOSTIC MICROBIOLOGY  2
Diagnostic microbiology, emphasizing the correlation of in vitro and in vivo findings in the
diagnosis and treatment of infectious disease
PREREQ: MEDT406 and MEDT416
COREQ: MEDT417

MEDT 409  IMMUNOHEMATOLOGY I  1
Study of antigen and antibody systems of human red cells and compatibility testing of
blood for transfusion
PREREQ: Open to Medical Technology majors only

MEDT 411  CLINICAL PHYSIOLOGICAL CHEMISTRY LABORATORY I  2
Laboratory exercises that complement the topics covered in MEDT401
COREQ: MEDT401

MEDT 412  MEDICAL MYCOLOGY LABORATORY  1
Laboratory procedures consistent with MEDT402
COREQ: MEDT402

MEDT 413  CLINICAL PHYSIOLOGICAL CHEMISTRY LABORATORY II  2
Laboratory exercises that complement the topics covered in MEDT403
COREQ: MEDT403

MEDT 414  HEMATOLOGY I LABORATORY  1
Study and implementation of laboratory procedures that correlate with the material
taught in MEDT404
COREQ: MEDT404

MEDT 415  HEMATOLOGY II LABORATORY  2
Study and implementation of laboratory procedures in hematology consistent with the
material taught in MEDT405
COREQ: MEDT405

MEDT 416  MEDICAL MICROBIOLOGY LABORATORY  2
Laboratory study of microorganisms important in the normal flora and infectious diseases
of humans
COREQ: MEDT406

MEDT 417  DIAGNOSTIC MICROBIOLOGY LABORATORY  2
Laboratory procedures consistent with MEDT407
COREQ: MEDT407

MEDT 418  MEDICAL TECHNOLOGY SENIOR SEMINAR  0  PF
Readings, case studies, career planning and orientation for clinical education
RESTRICTIONS: Requires Senior and major status

MEDT 419  IMMUNOHEMATOLOGY I LABORATORY  1
Laboratory procedures consistent with MEDT409
COREQ: MEDT409

MEDT 420  IMMUNOHEMATOLOGY II  1
Study of blood and component transfusions, their risks, complications and quality assur-
ances. Also blood component therapy and testing of the neonate and adult
PREREQ: MEDT409

MEDT 421  IMMUNOHEMATOLOGY II LABORATORY  1
Laboratory procedures consistent with MEDT420
COREQ: MEDT420.

MEDT 466  INDEPENDENT STUDY  1-6

MEDT 471  CLINICAL LABORATORY MANAGEMENT SEMINAR  1  PF
Discussion of laboratory management areas as they relate to the employer and employ-
ee Emphasis on communication, motivation, interviewing, staffing, job descriptions, gov-
ernment regulations and capital budgeting as they relate to the medical technologist and
laboratory

MEDT 472  CLINICAL URINALYSIS AND SEROLOGY PRACTICUM  2  PF
Clinical experience in the application of laboratory theory and techniques in urinalysis and
serology. Emphasis on team concept of health care provided through medical semi-
nars and conferences with clinical laboratory personnel

MEDT 473  CLINICAL CHEMISTRY PRACTICUM  3  PF
Supervised experience in the application of laboratory theory and techniques in clinical
chemistry
PREREQ: MEDT403 and MEDT413

MEDT 475  CLINICAL HEMATOLOGY  3  PF
Supervised experience in the application of laboratory procedures in hematology
PREREQ: MEDT405 and MEDT415

MEDT 477  CLINICAL MICROBIOLOGY  3  PF
Supervised experience in the application of laboratory procedures in diagnostic microbiology
PREREQ: MEDT402 and MEDT412, and MEDT407 and MEDT417

MEDT 479  CLINICAL IMMUNOHEMATOLOGY  3  PF
Supervised experience in the application of laboratory procedures in immunohematology
PREREQ: MEDT420 and MEDT421

MECHANICAL ENGINEERING

MEEG 125  INTRODUCTION TO MECHANICAL ENGINEERING  0  PF
Introduces the excitement of the Mechanical Engineering Profession Objectives include
understanding engineering, how fundamental sciences relate to elements of ME, how ME
relates to other engineering fields, and what career paths are enabled by an ME educa-
tion. Emphasizes teamwork with oral, written, and electronic communications

MEEG 213  PRINCIPLES OF MECHANICS I  3
Vector and scalar methods applied to the statics of rigid bodies , structures, and machines. Introduction to theory of stress and to work-energy principles Emphasis on three dimensional problems and on the role of statics in the design process.
PREREQ: PHYS207
COREQ: MATH243

MEEG 214  PRINCIPLES OF MECHANICS II  3
Intermediate-level development of the kinematics and dynamics of particle systems and rigid bodies. Solution of engineering problems by force, momentum and energy methods with applications to mechanisms, machines, and vehicles. Computer problems
PREREQ: PHYS207 and MEEG213
COREQ: MATH302

MEEG 302  HEAT TRANSFER  3
Conductive, convective, and radiative heat transfer. Finite difference methods for solving transient, multimdimensional problems numerically Design and optimization of fins and heat exchangers
PREREQ: MEEG307

MEEG 307  THERMODYNAMICS I  3
Basic concepts of thermodynamics including properties of substances, first and second law analysis of systems and control volumes, entropy and availability. Power and refriger-
ation cycles.
PREREQ: MEEG307

MEEG 308  THERMODYNAMICS II  3
Properties of non-ideal gases. Properties of mixtures as applied to humidity and chemical
equilibrium. Analysis and computer-aided optimization of air conditioning and combus-
tion systems
PREREQ: MEEG307

MEEG 313  STRENGTH OF MATERIALS  4
Analytical study of stresses and deformatons and their application to the design of machine and structural elements under axial, torsional, bending and lateral loads. Buck-
ling and energy methods will also be discussed
PREREQ: MEEG213

MEEG 316  MATERIALS ENGINEERING  3
Mechanical properties and materials behavior under static and dynamic loading; fatigue, creep, wear and corrosion. Properties and applications of metals, ceramics, polymers, and composites. Forming and joining of materials. Practical examples of mate-
rials selection in design and the use of materials data bases.
PREREQ: MASC302
MEEG 336 Fluid Mechanics II 3
Compressible flows, isentropic flow, shock waves, Lift and drag, inviscid flows, potential and stream functions, elementary wing theory, Boundary layers, Computational fluid dynamics
PREREQ: MEC305

MEEG 347 Mechanical Design I 3
Kinematic analysis of machines and mechanisms, Kinematic synthesis, cam design, gear train analysis, balancing and machine dynamics
PREREQ: MEEG215 and MEEG214

MEEG 348 Mechanical Design II 3
Statistical methods in design, failure theories and design for strength; and design of machine elements
PREREQ: MEEG347 and MEEG313

MEEG 361 Applied Engineering Analysis 3
Linear algebra, vector field theory, Fourier series and partial differential equations, Engineering applications
PREREQ: MATH302

MEEG 366 Independent Study 1-6

MEEG 391 Engineering Science Laboratory 4
An introduction to experimentation with experiments drawn from subjects without scheduled laboratories such as heat transfer, thermodynamics, vibrations, gas dynamics, etc. Lectures cover topics in treatment of experimental data, error analysis and analytic techniques useful to the experimentalist
PREREQ: MEC305, MEEG214, MEEG307 and MEEG361

MEEG 408 Power Generation System Design 3
Design and optimization of fossil fuel and nuclear power plants, cogeneration and peaking systems, Numerical solution combustion problems and thermal balance, Renewable energy, economics and environmental impacts
PREREQ: MEE307

MEEG 410 Experimental Mechanics for Composite Materials 3
Study of the micromechanical and thermostress response of composite materials. Execution and assessment of experiments conducted to investigate the strength and stiffness characteristics of composite material and structural elements
PREREQ: MEEG410

MEEG 411 Structural Mechanics for Mechanical and Aerospace Engineering 3
Introduction to theory of plates and shells, including analysis of stresses and deformations, vibrations, stability and thermal response of structures typical of modern aerospace and undersea vehicles, pressure vessels and other continuous structures
PREREQ: MEEG214 and MEEG313

MEEG 413 Advanced Mechanics of Materials 3
Intermediate topics in the mechanics of deformable media with applications to the analysis and design of machine elements and structures. Inelastic material response and failure analysis will also be discussed
PREREQ: MEEG313 and MATH302

MEEG 415 Finite Element Analysis 3
Introduction to the finite element method with applications to structural engineering problems. Direct and variational approaches to element formulation; interpolation functions and isoparametric elements
PREREQ: MEEG313

MEEG 423 Vibrations 3
Introduction to mechanical vibrations and structural dynamics. Analysis and synthesis by matrix and energy methods. Applications to machine design, vehicle dynamics and shock and vibration isolation
PREREQ: MEEG213 and MEEG214

MEEG 427 System Dynamics 3
Introduction to modeling, analysis and control of dynamic systems of mechanical, electrical, electromechanical, thermal and hydraulic nature. Introduction to mechanical vibration analysis, analytical and computer methods for linear systems, transfer functions, feedback controls, stability analysis, and design methods
PREREQ: MEEG214, MATH302, and MEEG361

MEEG 432 Aerodynamics 3
Theoretical and computational aerodynamics. Review of fluid mechanics, Airfoils and finite wings in incompressible flows, Panel and vortex lattice methods, Complex variable techniques, Boundary-layer theory
PREREQ: MECH305

MEEG 434 Air Pollution Processes 3
Physical, chemical, and meteorological processes that govern the photochemistry and transport of gas-phase and aerosol-phase air pollutants in the atmosphere. Topics to be covered include air quality, pollutant emissions, gas-phase and liquid-phase chemistry, aerosol dynamics, plumes, turbulent transport in geophysical flows, meteorology, and deposition
RESTRICTIONS: Requires upper division status in Engineering

MEEG 445 Senior Research I 3
Investigation of an experimental nature to be carried out and reported upon by each student
RESTRICTIONS: Open to Seniors only

MEEG 446 Senior Research II 3
Investigation of an experimental nature to be carried out and reported upon by each student
RESTRICTIONS: Open to Seniors only

MEEG 447 Design and Systems Synthesis I 3
Lectures on engineering case studies, project planning and engineering ethics; project work emphasizing project definition and evolution of design concepts

MEEG 448 Design and Systems Synthesis II 3
Lectures on engineering case studies and patents, engineering economics; project work emphasizing implementation of a design concept through detailed design, analysis and prototype testing
PREREQ: MEEG447

MEEG 466 Independent Study 1-6

MEEG 600 Seminar 1 PF

MEEG 606 Fluid Mechanics Measurements 3
Point-wise velocity measurement: differential pressure measurement, hot-wire anemometry, and Laser-Doppler anemometry. Global measurement techniques based on particle imaging and digital image processing. Signal processing, statistics and uncertainty analysis. Course is a combination of classroom and laboratory sessions

MEEG 610 Experimental Mechanics 3
Anatomy and physiology including microanatomy and mechanics of bone, cartilage, tendon and muscle. Mechanical modeling of body including joint loads, motion analysis, muscle forces, and interaction with orthopedic devices
PREREQ: MEEG313 and MEEG214

MEEG 614 Fracture of Materials 3
See MASC614 for course description

MEEG 615 Mechanical Properties of Materials 3
See MASC615 for course description

MEEG 616 Composite Materials Structures 3
Introduction to composite materials, anisotropic elasticity and laminate theory, plates and panels of composite materials, beams, columns and rods, composite materials in structures, analysis methods, strength and failure theories, adhesive bonding and mechanical fastening, hygrothermal effects, stress analysis, buckling, vibrations and impact

MEEG 617 Composite Materials 3
Fiber and matrix materials, fiber-matrix interface, polymer, metal, ceramic, carbon, and fiber composites, geometric aspects, elastic properties, laminates and composite structures, strength of unidirectional composites, strength of laminates, durability, hybrid composites, flexible composites and textile composite structures

MEEG 623 Nonlinear Dynamics and Chaos 3
Nonlinear dynamics and chaotic phenomena as applied to natural and engineering systems. Geometric and computational techniques, analytical methods for the qualitative analysis of dynamical systems modeled by differential equations and iterated maps. Flow and non-planar phase space analysis, local and global bifurcation analysis, catastrophe, resonances
PREREQ: MATH302

MEEG 625 Vehicle Dynamics 3

MEEG 626 Random Vibration 3
See CIEG616 for course description

MEEG 634 Air Pollution Processes 3
Physical, chemical, and meteorological processes that govern the photochemistry and transport of gas-phase and aerosol-phase air pollutants in the atmosphere. Topics to be covered include air quality, pollutant emissions, gas-phase and liquid-phase chemistry, aerosol dynamics, plumes, turbulent transport in geophysical flows, meteorology, and deposition
RESTRICTIONS: Requires graduate standing in Engineering
### ADVANCED CONTINUUM MECHANICS

- **MEEG 652 Flow of Viscous Materials**
  - Applied fluid dynamics with an emphasis on flow processes dominated by viscous effects. Flow phenomena in polymeric, ceramic, and composite materials. Modeling of flows in processing and manufacturing and its application to the design of molds and machinery.  
  - **Prerequisites:** MEEG0302

### MANUFACTURING PROCESSES

- **MEEG 655 Manufacturing Processes**
  - Comprehensive view of many manufacturing processes and technologies. Processes include: packaging, plastic molding, food, pharmaceutical, metal cutting and more. Concepts and technologies include: robotics, numerical control, just-in-time inventory, ergonomics, material handling, quality management and more.

### COMPUTER-AIDED DESIGN

- **MEEG 663 Computer-Aided Design**
  - Essentials of computer-aided design for engineers: specific topics include theory and application of computer graphics, introduction to data structures, numerical methods for curve and surface fitting and generation, and solid modeling.  
  - **Prerequisites:** MEEG0311

### ADVANCED THERMODYNAMICS

- **MEEG 801 Advanced Thermodynamics**
  - Critical examination of thermodynamic principles, equations of state for liquids, gases and mixtures. Interpretation of thermodynamic functions and applications to processes, reactions and equilibrium states.

### CONDUCTION HEAT TRANSFER

- **MEEG 802 Conduction Heat Transfer**
  - **Prerequisites:** MEEG0361 or MATHS14

### CONVECTION HEAT TRANSFER

- **MEEG 803 Convection Heat Transfer**
  - Forced convection heat transfer in laminar and turbulent boundary layers including viscous dissipation effects. Forced convection to fluids flowing through channels. Free convection, condensation and evaporation in boundary layers.  
  - **Prerequisites:** MEEG0361 or MATHS14

### SPECIAL TOPICS IN THERMODYNAMICS

- **MEEG 805 Special Topics in Thermodynamics**
  - Selection of topics that may include thermodynamics of irreversible processes, statistical mechanics, nonequilibrium statistical mechanics, thermodynamics of materials with memory, etc.

### THEORY OF ELASTICITY

- **MEEG 813 Theory of Elasticity**

### THEORY OF PLASTICITY

- **MEEG 814 Theory of Plasticity**
  - **Prerequisites:** MEEG0813

### FINITE ELEMENT ANALYSIS

- **MEEG 815 Finite Element Analysis**
  - Develops the theory of the finite element method and illustrates its application to problems in solid mechanics, fluid mechanics and heat transfer.

### ADVANCED CONTINUUM MECHANICS

- **MEEG 816 Advanced Continuum Mechanics**
  - A rigorous study of kinematics of finite deformations and the field equations of mechanics and thermodynamics of continua. Tensor analysis employed throughout.  
  - **Prerequisites:** MEEG0813

### COMPOSITE MATERIALS

- **MEEG 817 Composite Materials**
  - Introduction, thermoelastic behavior of laminated composites, statistical strength theories of continuous-fiber composites, short-fiber composites, hybrid composites, two-dimensional textile structural composites, three-dimensional textile structural composites, flexible composites, and nonlinear elastic finite deformation of flexible composites. Many may be cross-listed with MASC817.  
  - **Prerequisites:** MEEG0813

### PLATES AND SHELLS IN AEROSPACE STRUCTURES I

- **MEEG 818 Plates and Shells in Aerospace Structures I**
  - **Prerequisites:** MEEG0813

### PLATES AND SHELLS IN AEROSPACE STRUCTURES II

- **MEEG 819 Plates and Shells in Aerospace Structures II**
  - General theory of thin shells from three-dimensional equations of elasticity; shells of revolution under axial symmetric loads; asymmetric loads; thermoelastic effects; geometric bending theory; membrane theory; inextensible theory; Donnell equations; edge load solutions; orthotropic shells; laminated shells.  
  - **Prerequisites:** MEEG0813

### ADVANCED DYNAMICS

- **MEEG 821 Advanced Dynamics**
  - General principles of spatial dynamics. Lagrangian and Hamiltonian methods. Application to engineering problems.

- **MEEG 822 Servomechanisms and Controls**
  - Linear and nonlinear analysis and synthesis of mechanical, electrical, hydraulic and pneumatic systems. Use of Laplace transform and other techniques. Stability and performance criteria.

### VIBRATION ANALYSIS

- **MEEG 823 Vibration Analysis**
  - Engineering analysis of the vibrations of machines and structures. Free, forced and random vibrations with emphasis on linear, multidegree-of-freedom systems by matrix and energy methods. Introduction to the Lagrangian method and normal coordinate analysis of complex systems.

### SPECIAL TOPICS IN FLUID MECHANICS

- **MEEG 830 Special Topics in Fluid Mechanics**
  - Offered occasionally and with varying subject matter. Topics may include turbulence, plasma kinetic theory, stability, etc.

### FLUID DYNAMICS I

- **MEEG 831 Fluid Dynamics I**
  - Physical properties of fluids; description of motion, vector and tensor algebra; Navier-Stokes equation; kinetic theory of gases; incompressible viscous flows; boundary-layer theory and turbulence.  
  - **Prerequisites:** MEEG0361 or MATHS14

### FLUID DYNAMICS II

- **MEEG 832 Fluid Dynamics II**
  - Rotational and irrotational flows; potential theory; airfoils, creeping motion, lubrication theory, wave motion, compressibility, supersonic flow and shock waves, and hydrodynamic stability.

### SPECIAL TOPICS IN CONTINUUM MECHANICS

- **MEEG 840 Special Topics in Continuum Mechanics**
  - Study of advanced principles of continuum mechanics in one or more special fields. Topics selected by instructor. Special subjects may include the general theory of constitutive equations, hyperelasticity, electroelasticity, hypoelasticity, simple and nonsimple fluids, and solutions of special problems in these areas.

### POLYMER FLUID MECHANICS

- **MEEG 853 Polymer Fluid Mechanics**
  - Development and application of constitutive equation to describe flow of polymeric liquids.

### ADVANCED ENGINEERING ANALYSIS

- **MEEG 862 Advanced Engineering Analysis**
  - Emphasis on asymptotic and perturbation methods. Topics from among the following: steepest descent and stationary phase; phase plane; asymptotic analysis of ODEs and PDEs using such methods as WKB, matched asymptotic expansions, Padé approximants, strain, and multiple scales; similarity methods; catastrophe theory; and chaos. Engineering applications.

### ENGINEERING ANALYSIS I

- **MEEG 863 Engineering Analysis I**
  - N-space, eigenvalue problem, diagonalization and quadratic forms; field theory; Sturm-Liouville theory; integral transforms; Bessel and Legendre functions; and partial differential equations. Engineering applications.

### ENGINEERING ANALYSIS II

- **MEEG 864 Engineering Analysis II**
  - Continuation of partial differential equations; complex variables; variational calculus. Engineering applications.  
  - **Prerequisites:** MEEG0863

### RESEARCH

- **MEEG 868 Research**
  - **1-9**

### MASTER'S THESIS

- **MEEG 869 Master's Thesis**
  - **1-6**

### PRE-CANDIDACY STUDY

- **MEEG 964 Pre-Candidacy Study**
  - **3-12 PF**

### DOCTORAL DISSERTATION

- **MEEG 969 Doctoral Dissertation**
  - **1-12 PF**

---

**UNIVERSITY OF DELAWARE 1995-96 CATALOG / PAGE 319**
**MILITARY SCIENCE**

**MLSC 206 Basic Leadership II 1**
Continues to build on the basics of MLSC 205. Learn small unit tactics, how to handle up to ten people in stressful situations with feedback on performance. Further develop skills with map and compass, weapons safety, and learn emergency first aid techniques for basic life saving. No military obligation is associated with this course.

**MLSC 305 Applied Leadership I 2**
Advanced training in military leadership. One of two courses designed to prepare cadets for the ROTC Advanced Camp/Nurse Summer Training Program. Focuses on leadership development through multiple, small unit leadership opportunities and counseling. Fine-tunes skills learned in the previous two years of Military Science, ROTC. Basic Camp or prior military service, especially marksmanship, land navigation, drill and ceremonies, and physical fitness. Commitment to military service is required.

RESTRICTIONS: Requires permission of instructor.

**MLSC 306 Applied Leadership II 2**
Continues to build on the basics of MLSC 205. This course completes student preparation for Advanced Camp/Nurse Summer Training Program, and focuses on leadership at the platoon and company level. Small unit tactics, and training are emphasized, information is provided to help the student to make wise decisions about a military service option. Commitment to military service is required.

PREREQ: MLSC 305

**MLSC 366 Independent Study 1-3**

**MLSC 405 Advanced Leadership I 2**
Designed to prepare cadets for commissioning by refining professional skills and leadership ability. Students will be assigned leadership positions and learn how to function as commanders and staff officers in planning and executing cadre training activities. Instruction will focus on technical skills needed to accomplish assigned missions and other topics which expand cadre knowledge of Army systems and procedures. Commitment to military service is required.

PREREQ: MLSC 306

**MLSC 406 Advanced Leadership II 2**
Builds on leadership lessons learned in MLSC 405 and helps students complete the transition from cadre to lieutenant. Cadets will be assigned new leadership positions to broaden their leadership experience. Instruction will focus on officer professional development subjects needed to manage a military career and personal affairs. Commitment to military service is required.

PREREQ: MLSC 306

**MLSC 466 Independent Study 1-3**

**MUSEUM STUDIES**

**MSST 802 Leadership and Management of Museums 3**
Treats governance and administrative operations of museums, highlighting planning, legal and organizational structure, trustees and directors, personnel management, finance, development, marketing, merchandising, maintenance and security, libraries and archives, publishing, computer applications, public programming, and professional standards and ethics.

RESTRICTIONS: Open to graduate students only. Includes field trips and team task force projects.

**MSST 804 Museum Internship 3**
Internship practice in administration, collections management, exhibition and interpretation at museums and related institutions. Students spend ten full weeks, or an equivalent, at the University Gallery, Winterthur Museum, Hagley Museum, Longwood Gardens or other acceptable institution. May be cross-listed with HIST 804.

RESTRICTIONS: Open to graduate students only. Requires at least one semester course in Museum Studies and permission of instructor.

**MSST 805 Historical Properties 3**
Administration and interpretation of historical properties, including historic site surveys, preservation research, building restoration, conservation techniques and the establishment and attainment of interpretive objectives. Field trips to area historic sites. Combines classroom instruction and work projects at area historic sites.

RESTRICTIONS: Open to graduate students only.

**MSST 807 Museum Curatorship: Temporary and Economical Exhibits 3**
Focuses on the planning, designing and fabrication of economical museum exhibits for changing exhibition rooms and alternative spaces. Emphasizes time, money and labor-saving techniques. Includes design and fabrication of a temporary exhibit in the University Gallery or in a local museum.

RESTRICTIONS: Open to graduate students only.

**MSST 808 Museum Education and Interpretation 3**
The theory, strategies, practices, evaluation and administration of learning in a museum environment. Includes an interpretation of collections through a variety of instructional means. Lectures, discussions, field trips, program planning, curriculum development, proposal writing, audience studies, practice and special projects work with area museums.

RESTRICTIONS: Open to graduate students only.

**MSST 810 Environmental Institution Management 6**
Seminar sessions at Delaware Nature Society headquarters with staff and guest lecturers, including attorneys, investment counselors and museum administrators. Experiences at area environmental institutions. Covers goal definition, long-range planning, building/gardens management, programming, fund raising, financial management, personnel policies, volunteers, publicity and publications, legal considerations and conservation/preservation roles.

RESTRICTIONS: Open to graduate students only. Permission of instructor required.

**MUSIC EDUCATION**

**MUED 279 Practical in Music Education 3**
Observation of differing elementary and secondary school music program structures; studies and observations of children’s growth and development patterns in terms of music learning; and experience in music instructional methods.

RESTRICTIONS: Requires permission of instructor.

**MUED 336 Choral Conducting 2**
Specific problems in conducting choral literature. Comparative analysis of works to be conducted.

PREREQ: MUSC 335

RESTRICTIONS: For vocal music education majors.

**MUED 337 Instrumental Conducting 2**
Specific problems in conducting instrumental literature. Practical application of conducting techniques through supervised conducting of instrumental ensembles.

PREREQ: MUSC 335

RESTRICTIONS: For instrumental music education majors.

**MUED 366 Independent Study 1-3**

**MUED 379 Music in the Elementary and Junior High (or Middle) School 3**
Introduction to music materials and approaches through clinical experiences.

PREREQ: MUED 279

RESTRICTIONS: For music majors.

**MUED 381 Music in Early Childhood 3**
Methods and materials for developing musical skills and understanding of children ages three to eight. Includes clinical experience.

RESTRICTIONS: For majors in Colleges of Education and Human Resources.
MUED 385 MUSIC FOR THE SPECIAL LEARNER 3
Analysis of types of exceptional learners and analysis of music materials and methods appropriate for special learners.
RESTRICTIONS: For College of Education elementary majors and College of Human Resources young exceptional children majors.

MUED 390 MUSIC IN THE ELEMENTARY SCHOOL 3
Introduction to music materials and approaches through clinical experiences.
RESTRICTIONS: For elementary education and child development majors.

MUED 479 SECONDARY MUSIC MATERIALS AND APPROACHES 3
Procedures and materials used for teaching music in the secondary school.
PREREQ: MUED379
RESTRICTIONS: Requires permission of instructor.

MUED 559 FIELD WORKSHOP 1-4

MUED 574 MUSIC CONCEPTS IN THE ELEMENTARY SCHOOL 3
Methods and materials for developing children’s understanding of music concepts by involvement in listening to, performing and describing musical sound events.
RESTRICTIONS: For experienced teachers.

MUED 575 MUSIC IN EARLY CHILDHOOD 3
Advanced study of musical content and techniques of teaching.
RESTRICTIONS: For experienced teachers.

MUED 576 GENERAL MUSIC: MIDDLE SCHOOL AND HIGH SCHOOL 3
Methods and materials for involving students in musical experiences.
RESTRICTIONS: For experienced teachers.

MUSIC

MUSC 061 PRIVATE STUDY 1-8 R
RESTRICTIONS: Requires audition and departmental placement tests. Credits do not apply toward bachelor’s degree.

MUSC 062 PRIVATE STUDY 1-8 R
PREREQ: MUSC061.
RESTRICTIONS: Credits do not apply toward bachelor’s degree.

MUSC 095 BASIC HARMONY AND EAR-TRAINING 3 R
Designed to establish or re-establish basic harmony and ear-training skills.
RESTRICTIONS: For beginning music majors and minors. Requires Musicality Test. Credits do not apply toward degree.

MUSC 100 RECITAL ATTENDANCE 0 PF
A recital experience; see Department of Music Student Handbook for details.
RESTRICTIONS: May be repeated.

MUSC 101 APPRECIATION OF MUSIC 3
Introduction to Western music literature through a nontechnical presentation of various musical styles and forms.

MUSC 102 APPRECIATION OF MUSIC 3
Music literature through a nontechnical presentation of various musical styles and forms. Continuation of MUSC101 with emphasis on the larger forms: symphonies, operas, concertos, concertos - and the 20th century.
PREREQ: MUSC101.

MUSC 103 INTRODUCTION TO OPERA 3
Explores the world of opera including categories of singers; types of operas, e.g., opera seria, opera buffa, singspiel; and the roles of the chorus. Includes experience seeing an opera performed live.

MUSC 104 INTRODUCTION TO OPERA II 3
Introduction to opera, concentrating on opera comic, singspiel, opera seria, and Wagnerian music dramas. Explores philosophies associated with music in the context of opera. Time span covered is 1607 to present.

MUSC 105 FUNDAMENTALS OF MUSIC I 3
Introduction into the elements of music theory including ear training, music reading and harmony with keyboard application.
RESTRICTIONS: Designed for nonmusic majors.

MUSC 106 FUNDAMENTALS OF MUSIC II 3
Continuation of MUSC105. Survey and analytical approach to music styles. Composing original works for voice and instruments.
PREREQ: MUSC105.

MUSC 108 UNIVERSITY SINGERS 1
Members enter by audition. University Singers is a chorus of sopranos and altos that performs its own concerts and may also perform with other choirs.
RESTRICTIONS: Requires permission of instructor. May be repeated for credit.

MUSC 109 CHORAL UNION 1
Members enter by audition. Choral Union is a chorus of 100+ voices that rehearses en masse on Monday nights. The Union performs large-scale choral works. Smaller sections perform independently as well.
RESTRICTIONS: Requires permission of instructor. May be repeated for credit.

MUSC 110 CHORALE 1
Members enter by audition. Chorale is the university’s most select chorus of mixed voices.
RESTRICTIONS: Requires permission of instructor. May be repeated for credit.

MUSC 115 BAND 1
Marching band, Wind Ensemble and Symphonic Band. Representative original and transcribed works performed.
RESTRICTIONS: Audition required for entrance to Wind Ensemble and Symphonic Band. May be repeated for credit.

MUSC 116 JAZZ ENSEMBLE 1
Study and performance of the diverse styles characteristic of the medium.
RESTRICTIONS: Requires audition. May be repeated for credit.

MUSC 117 UNIVERSITY ORCHESTRA 1
Rehearsal and performance of representative works for orchestra.
RESTRICTIONS: Requires audition. May be repeated for credit.

MUSC 118 PERCUSSION ENSEMBLE 1
Study and performance of works for percussion instruments.
RESTRICTIONS: Requires audition. May be repeated for credit.

MUSC 119 GAMELAN TRADITIONS OF INDONESIA 3
A performance-oriented introductory course in the “knobbed gong” musical traditions of Java and Bali. Includes traditional as well as contemporary literature study, theoretical analysis and historical overview, with performance experience.

MUSC 121 GAMELAN ENSEMBLE 1
Gamelan is the largest instrumental ensemble from Southeast Asia, and is considered the “orchestra of the Eastern world.” This is a performing ensemble, dealing with traditional and contemporary Japanese and Balinese literature.
RESTRICTIONS: Open to anyone without prior musical experience. May be repeated for credit.

MUSC 125 COLLEGIUM MUSICUM 1
Ensemble for the performance of instrumental and vocal music of the Medieval, Renaissance and Early Baroque periods. Size, instrumentation, and repertoire for the group varies from semester to semester dependent upon resources at hand, players’ skills and other factors.
PREREQ: Audition.

MUSC 161 PRIVATE STUDY 1-8
The student adds to the course title the branch of study elected: piano, organ, voice or an orchestral instrument. Includes a one-contact-hour studio class.
RESTRICTIONS: Contact department to register for correct number of credit hours. Requires audition.

MUSC 162 PRIVATE STUDY 1-8
The student adds to the course title the branch of study elected: piano, organ, voice or an orchestral instrument. Includes a one-contact-hour studio class.
PREREQ: MUSC161.
RESTRICTIONS: Contact department to register for correct number of credit hours.

MUSC 171 DICTION: ENGLISH AND ITALIAN 1
Study of pronunciation rules for singing in English and Italian. Includes practicum.
COREQ: Enrollment in applied study.

MUSC 173 CLASS VOICE 1
Fundamentals and techniques of singing.
RESTRICTIONS: For nonmajors.

MUSC 174 CLASS VOICE: BEGINNING 1
Fundamentals of singing for the nonvocal music major. Study of basic techniques, repertoire and function of vocal mechanism.
RESTRICTIONS: Requires permission of instructor for nonmajors. Requires one semester of University vocal experience.

MUSC 175 CLASS PIANO: ELEMENTARY I 1
Beginning piano primarily for the vocal or instrumental music major. Basic techniques, reading, transcription and playing by ear.
PREREQ: MUSC105 or Co-requisite of MUSC195. Preference for enrollment will be given to music majors.
RESTRICTIONS: None.

MUSC 176 CLASS PIANO: ELEMENTARY II 1
A continuation of MUSC175. Scale and arpeggio playing, keyboard harmony, repertoire of pieces appropriate to technical ability.
PREREQ: MUSC175 and MUSC195.
MUSC 177  CLASS GUITAR I  1
Introduction to the fundamentals of guitar technique and note reading for non-major students. Topics include guitar history, repertoire, scales and exercises with an emphasis on classical as well as folk music. Music Education majors may also find this course particularly useful for classroom teaching.
PREREQ: MUSC 177

MUSC 178  CLASS GUITAR II  1
A continuation of Class Guitar I with a stronger emphasis on ensemble playing and development of a repertoire.
PREREQ: MUSC 177

MUSC 181  APPLIED JAZZ STYLES/TECHNIQUES I  2
Private studio instruction covering techniques and interpretation used in jazz performance. Examines a cross-section of styles and repertoire.
RESTRICTIONS: Requires audition.

MUSC 185  EAR TRAINING AND SIGHT SINGING I  2
Techniques of sight singing and music reading skills. Development of ability in the aural recognition of melody, harmony and rhythm.
COREQ: MUSC 185
PREREQ: MUSC 185
RESTRICTIONS: Requires permission of instructor.

MUSC 186  EAR TRAINING AND SIGHT SINGING II  2
Techniques of sight singing and music reading skills. Development of ability in the aural recognition of melody, harmony and rhythm.
PREREQ: MUSC 185 and MUSC 195
COREQ: MUSC 196

MUSC 189  PIANO FOR THE CLASSROOM  1
Functional piano skills.
RESTRICTIONS: For teachers of elementary school children.

MUSC 190  JAZZ IMPROVISATION  3
Techniques of harmonic, rhythmic and melodic embellishment and improvisation in jazz.
RESTRICTIONS: Requires intermediate level of performance.

MUSC 193  SIGHT READING AT THE KEYBOARD I  1
Techniques for improving coordination and musical comprehension when playing from sight at the keyboard.
RESTRICTIONS: For keyboard majors.

MUSC 194  SIGHT READING AT THE KEYBOARD II  1
Continuation of MUSC 193.
PREREQ: MUSC 193

MUSC 195  HARMONY I  3
COREQ: MUSC 185
PREREQ: MUSC 195
RESTRICTIONS: Requires permission of instructor.

MUSC 196  HARMONY II  3
Continuation of harmony: diatonic through chromatic harmony with keyboard application. Chord structures and functional relationships. Basic melodic and contrapuntal compositional techniques. Writing, playing and analysis.
PREREQ: MUSC 185 and MUSC 195
COREQ: MUSC 186

MUSC 197  JAZZ HARMONY  3
Study of harmonic aspects of melody, harmony, texture, dynamics, rhythm and form in selected jazz and American popular literature; development of elementary aural-perceptual and compositional skills related to jazz and American popular music.
PREREQ: MUSC 105

MUSC 205  MUSIC OF THE NON-WESTERN WORLD  3
Survey of non-Western world musical cultures utilizing textbook, reprinted reserve articles, films and in-class performance/demonstrations. Goal is the understanding and appreciation of various world musics.
PREREQ: MUSC 105

MUSC 206  MUSIC OF CHINA, KOREA AND JAPAN  3
Systematically examines the origin and historical development of the musical cultures of the Far East. Studies how the musical and cultural influence of Chinese musical culture has had an enormous impact on the development of such cultures in Korea and Japan.
PREREQ: MUSC 105

MUSC 207  HISTORY OF JAZZ  3
Chronological study of the style changes in jazz from the late 19th century to the present. Emphasis on the sociological, economic and technological influences of the period and on the principal personalities who have been primarily responsible for change.
PREREQ: MUSC 105

MUSC 208  HISTORY OF THE AMERICAN MUSICAL THEATRE  3
The musical-dramatic forms of the 18th, 19th and 20th centuries in the United States and their impact on the modern musical theatre. Complete works read in class and compared to a series of criteria found in successful modern shows. Comparison of older and current works. May be crosslisted with THEA 208.

MUSC 209  HISTORY OF SPANISH MUSIC  3
Covers the most outstanding traditions of Spanish music, including Arab-influenced Andalusian music, 13th-century music, schools of the "Renacimiento", 17th-century court music, the "Zarzuela", 19th-century Nationalism, and the most modern tendencies of the 20th century.
RESTRICTIONS: Taught abroad only.

MUSC 211  INTRODUCTION TO MUSIC HISTORY  3
Survey of selected works in music history with emphasis on selected basic terminology, forms and style changes, through score reading and listening.
PREREQ: MUSC 195

MUSC 214  STRINGED INSTRUMENTS CLASS: VIOLIN, VIOLA, CELLO, BASS  1
Development of performing and teaching skills.

MUSC 215  HIGH BRASS INSTRUMENTS CLASS  1
Development of performing and teaching skills.
RESTRICTIONS: MUSC 215 and MUSC 216 to be taken consecutively in one academic year.

MUSC 216  LOW BRASS INSTRUMENTS CLASS  1
Development of performing and teaching skills.
RESTRICTIONS: MUSC 215 and MUSC 216 to be taken consecutively in one academic year.

MUSC 217  WOODWIND INSTRUMENTS CLASS I  1
Development of performing and teaching skills.
RESTRICTIONS: MUSC 217 and MUSC 218 to be taken consecutively in one academic year.

MUSC 218  WOODWIND INSTRUMENTS CLASS II  1
Development of performing and teaching skills.
RESTRICTIONS: MUSC 217 and MUSC 218 to be taken consecutively in one academic year.

MUSC 219  PERCUSSION INSTRUMENTS  1
Development of performing and teaching skills.

MUSC 241  ACCOMPANYING CHAMBER MUSIC: PIANO  1
Accompanying vocalists and instrumentalists in the performance of chamber music with keyboard.
PREREQ: Sight-Reading Placement Test
RESTRICTIONS: First course of a six-semester sequence.

MUSC 242  ACCOMPANYING CHAMBER MUSIC: PIANO  1
Accompanying vocalists and instrumentalists in the performance of chamber music with keyboard.
PREREQ: MUSC 241

MUSC 261  PRIVATE STUDY  1-8
The student adds to the course title the branch of study elected: piano, organ, voice or an orchestral instrument. Includes a one-contact-hour studio class.
PREREQ: MUSC 162
RESTRICTIONS: Contact department to register for correct number of credit hours.

MUSC 262  PRIVATE STUDY  1-8
The student adds to the course title the branch of study elected: piano, organ, voice or an orchestral instrument. Includes a one-contact-hour studio class.
PREREQ: MUSC 261
RESTRICTIONS: Contact department to register for correct number of credit hours.

MUSC 271  DICTION: GERMAN  1
A study of pronunciation rules for singing in German. Includes practicum.
COREQ: Enrollment in applied study.

MUSC 272  DICTION: FRENCH  1
A study of pronunciation rules for singing in French. Includes practicum.
COREQ: Enrollment in applied study.

MUSC 273  CLASS VOICE: INTERMEDIATE  1
Basic voice study. Repertoire, technique and vocal problems isolated through performance, research and discussion.
PREREQ: MUSC 173 and MUSC 174
RESTRICTIONS: One-year of university-level vocal experience acceptable in lieu of Prerequisites. For music majors and students with exceptional vocal ability.
MUSIC

MUSC 274  CLASS VOICE: ADVANCED  1
Basic voice
PREREQ: MUSC273
RESTRICTIONS: For music majors and students with exceptional vocal ability.

MUSC 275  CLASS PIANO: INTERMEDIATE I  1
Piano techniques applicable to the levels and needs of the students; a continuation of reading and transcription; and improvisation and repertory of grade two pieces
PREREQ: MUSC176 and MUSC196
RESTRICTIONS: For vocal or instrumental music majors with some background in piano playing

MUSC 276  CLASS PIANO: INTERMEDIATE II  1
A continuation of MUSC275
PREREQ: MUSC275

MUSC 281  APPLIED JAZZ STYLES/TECHNIQUES II  2
Private studio instruction covering techniques and interpretation used in jazz performances. Examines a cross-section of styles and repertoire
PREREQ: MUSC181
RESTRICTIONS: Requires audition.

MUSC 285  ADVANCED EAR TRAINING AND SIGHT SINGING I  2
Continuation of MUSC185 and MUSC186
PREREQ: MUSC185 and MUSC295
COREQ: MUSC295

MUSC 286  ADVANCED EAR TRAINING AND SIGHT SINGING II  2
Continuation of MUSC185, MUSC186 and MUSC285
PREREQ: MUSC285 and MUSC295
COREQ: MUSC295

MUSC 287  MUSIC TECHNOLOGY I  3
Overview and experience with commercially-available music-related hardware and software. Hardware includes IBM and Macintosh microcomputers, electronic keyboards and tone generators incorporating Musical Instrument Digital Interface (MIDI), digital recording systems, CD-ROM and videodisc. Software includes sequencers, notation packages, interactive composers, educational programs and hypermedia applications
PREREQ: MUSC105 or MUSC195

MUSC 293  JAZZ IMPROVISATION I  3
A comprehensive study of jazz improvisation vocabulary and techniques which will result in the student being able to improvise in a stylistically acceptable manner over a given set of chord progressions
PREREQ: MUSC197

MUSC 294  JAZZ IMPROVISATION II  3
An advanced study of jazz improvisation vocabulary and techniques which will result in the student being able to improvise in a stylistically acceptable manner
PREREQ: MUSC293

MUSC 295  ADVANCED HARMONY I  3
PREREQ: MUSC186 and MUSC196
COREQ: MUSC286

MUSC 296  ADVANCED HARMONY II  3
Continuation of MUSC295. Study of late 19th- and 20th-century harmony, techniques and styles. Introduction to instrumentation. Original compositions
PREREQ: MUSC285 and MUSC295
COREQ: MUSC286

MUSC 301  JUNIOR RECITAL  0 PF
A 30-minute public recital
RESTRICTIONS: Requires junior status and permission of instructor

MUSC 303  CHAMBER MUSIC LITERATURE  3
Chamber music written for various combinations from the Baroque period to the present
PREREQ: MUSC211, or MUSC101 and MUSC102

MUSC 305  THE SYMPHONY  3
The development of the symphony from the early 18th century to the present
PREREQ: MUSC211 or MUSC101

MUSC 307  MUSIC IN AMERICAN CULTURE  3
Music in the United States from 1620 to 1875. Folk music in an expanding nation. The evolution of jazz

MUSC 308  MUSIC IN AMERICAN CULTURE  3
The development of the United States as an international leader in musical composition, performance and technology 1865 to the present. Also, the history of the Broadway musical

MUSC 311  MUSIC HISTORY: 400 THROUGH 1600  3
The history of musical style and theory in the Middle Ages (5th through 14th centuries) and the Renaissance (15th and 16th centuries)
PREREQ: MUSC211 or MUSC101

MUSC 312  MUSIC HISTORY: 1600 THROUGH 1827  3
The history of musical style and theory during the Baroque period (1600-1750), and the Classical period through the death of Beethoven (1827)
PREREQ: MUSC211 or MUSC101

MUSC 313  MUSIC HISTORY: 1825 TO THE PRESENT  3
The Romantic era, Impressionism and the 20th century Musical thought and style from 1825 to the present
PREREQ: MUSC211 or MUSC101

MUSC 321  ENSEMBLE: INSTRUMENTAL, PIANO, OR VOCAL  1
Performance of chamber literature for instrument, piano or voice
RESTRICTIONS: May be repeated for credit

MUSC 327  GERMAN LIEDER  2
Literature survey of the standard vocal repertoire of the German tradition. Includes examples of the works of such composers as Schubert, Brahms, Schumann, Wolf and Strauss
RESTRICTIONS: Open to Juniors and Seniors

MUSC 328  CHORAL LITERATURE  3
Study of style, structure and interpretations of representative choral works, including large and small forms composed since 1500
PREREQ: MUSC211

MUSC 331  ORCHESTRATION  2
Orchestral and band arranging; review of instrumental ranges and colors; scoring for small ensembles; special problems in scoring accompaniments. Final arrangement performed by a University ensemble
PREREQ: MUSC296

MUSC 335  BASIC CONDUCTING  2
The principles of conducting and score reading
PREREQ: MUSC286 and MUSC296

MUSC 339  VIENNESE COMPOSERS  3
Selected Viennese composers including Mozart, Beethoven, Schubert, and the Strausses. Emphasis of the course will be on Viennese music. A combination of Music History and Music Appreciation. This course is offered in the Semester in Vienna Program only
RESTRICTIONS: Taught in Semester in Vienna program only

MUSC 341  ACCOMPANYING CHAMBER MUSIC: PIANO  1
Accompanying vocalists and instrumentalists and in the performance of chamber music with keyboard
PREREQ: MUSC242

MUSC 342  ACCOMPANYING CHAMBER MUSIC: PIANO  1
Accompanying vocalists and instrumentalists and in the performance of chamber music with keyboard
PREREQ: MUSC341

MUSC 345  HISTORY OF THEATRE: AMERICAN MUSICAL THEATRE  3
See THEA245 for course description

MUSC 361  PRIVATE STUDY  1-8
The student adds to course title the branch of study elected: piano, organ, voice or an orchestral instrument. Includes a one-contact-hour studio class
PREREQ: MUSC262
RESTRICTIONS: Contact department to register for correct number of credit hours

MUSC 362  PRIVATE STUDY  1-8
The student adds to course title the branch of study elected: piano, organ, voice or an orchestral instrument. Includes a one-contact-hour studio class
PREREQ: MUSC262
RESTRICTIONS: Contact department to register for correct number of credit hours

MUSC 363  KEYBOARD LITERATURE I  3
Style, structure and technical performance of keyboard music from the 17th century to the present
PREREQ: MUSC262

MUSC 364  KEYBOARD LITERATURE II  3
Intensive study of one composer or style period from the keyboard repertory. Content varies from year to year
PREREQ: MUSC363

MUSC 366  INDEPENDENT STUDY  1-3
MUSC 387 Music Technology II 3
Explores intermediate to advanced applications of music technology including profes-
sonal level implementation of MIDI hardware and software. Topics include multipoint
interfaces, synchronization, MIDI sequencing and notation techniques, multimedia, and
music related Internet services. Additional topics may be examined depending on student
experience.
PREREQ: MUSC 287
MUSC 390 Honors Colloquium 3
See ARSC 390 for course description.
MUSC 392 Contrapuntal Writing 2
Contrapuntal techniques with emphasis on 16th- and 18th-century styles and forms.
PREREQ: MUSC 295
MUSC 393 Keyboard Harmony 2
A practical course for the development of facility in applying knowledge of harmony to
the keyboard. Emphasis on melody harmonization and improvisation.
PREREQ: MUSC 296
RESTRICTIONS: Requires two years of class or private piano.
MUSC 394 Keyboard Harmony II 2
An advanced practical course for the development of facility in applying knowledge of
harmony to the keyboard.
PREREQ: MUSC 393.
MUSC 395 Form Analysis 3
Structure of homophonic and polyphonic music representing different periods of musical
history.
PREREQ: MUSC 296
MUSC 397 Contemporary Harmony 3
Styles, harmonic principles and techniques in 20th-century music.
PREREQ: MUSC 296.
MUSC 401 Senior Recital 0 PF
A 60-minute public recital.
RESTRICTIONS: Requires Senior status.
MUSC 407 Contemporary Music Literature 3
Analysis of styles and techniques of contemporary composers beginning with composi-
tions of the late 1950s.
PREREQ: MUSC 313 or permission of instructor.
MUSC 420 Advanced Composition 3
Creative writing in the vocal and instrumental media with individual and group criticism.
PREREQ: MUSC 397.
RESTRICTIONS: May be repeated for up to nine credit hours.
MUSC 421 Special Projects in Music Theory 3
Theory majors do research and study under guidance of a faculty advisor on an
approved topic for a formal paper to be presented at a public lecture.
PREREQ: MUSC 485
MUSC 427 French Art Song 2
A literature survey of the standard vocal repertoire of the French tradition. Includes exam-
amples of the works of such composers as Faure, Debussy, Duparc and Poulenc.
RESTRICTIONS: Requires Junior or Senior status.
MUSC 428 Twentieth-Century Art Song 2
A literature survey of the standard vocal repertoire of the 20th Century. Includes exam-
amples of the works of such composers as Barber, Britten, Schönberg, Ives, Vaughan
Williams and Roem.
RESTRICTIONS: Requires Junior or Senior status.
MUSC 441 Accompanying Chamber Music: Piano 1
Accompanying vocalists and instrumentalists and in the performance of chamber music
with keyboard.
PREREQ: MUSC 342.
MUSC 442 Accompanying Chamber Music: Piano 1
Accompanying vocalists and instrumentalists and in the performance of chamber music
with keyboard.
PREREQ: MUSC 441.
MUSC 461 Private Study 1-8
The student adds to course title the branch of study elected: piano, organ, voice or an
orchestral instrument. Includes a one-contact-hour studio class.
PREREQ: MUSC 362.
RESTRICTIONS: Contact department to register for correct number of credit hours.
MUSC 462 Private Study 1-8
The student adds to course title the branch of study elected: piano, organ, voice or an
orchestral instrument. Includes a one-contact-hour studio class.
PREREQ: MUSC 461.
RESTRICTIONS: Contact department to register for correct number of credit hours.
MUSC 466 Independent Study 1-3
MUSC 480 Vocal Pedagogy 3
Designed for those who plan to work with the singing voice. Includes vocal research,
comparative pedagogy, observation of teaching and practical teaching experience.
MUSC 485 Pedagogy of Theory 3
Materials, organization, techniques and problems of teaching high school and basic col-
lege theory courses. Attention to sight singing, ear training, keyboard and form and
analysis materials. Observation and teaching of theory courses at the Freshman and
Sophomore levels.
PREREQ: MUSC 286 and MUSC 296.
MUSC 489 Opera Workshop 1
Dramatic and musical preparation of operatic roles through the production of a complete
opera/operetta.
RESTRICTIONS: Admission by audition, with permission of private instructor, and prefer-
ence given to vocal performance majors.
MUSC 495 Analysis for Performance 3
Examination of structural, melodic, rhythmic, harmonic and textual aspects of selected
music literature and their significance in artistic performance.
PREREQ: MUSC 296.
MUSC 561 Advanced Private Study 1-4
Advanced instruction in voice or instrument. The student adds to course title the branch of
study elected: piano, organ, voice, or an orchestral instrument, e.g., Private Study
(Piano).
PREREQ: MUSC 462.
MUSC 601 Master's Recital 2 PF
A sixty-minute public recital.
PREREQ: MUSC 662.
COREQ: MUSC 662.
MUSC 603 Chamber Music Literature 3
Survey of chamber music literature from the 17th century to the present.
RESTRICTIONS: Requires permission of instructor.
MUSC 605 Symphonic Literature 3
Historical and structural analysis of major symphonic works from the 18th century to the
present.
RESTRICTIONS: Requires permission of instructor.
MUSC 606 Wind Literature 3
History of the wind band and its music from the Renaissance to the present, with empha-
sis on the wind music from the 19th and 20th centuries for wind ensemble and concert
band. Examines wind literature suitable for secondary school and college-level perform-
ing groups.
RESTRICTIONS: Requires permission of instructor.
MUSC 611 Studies in Music History 3
A survey of representative compositions from various periods of music history. Includes a
study of the relationship of music to the socio-cultural background of each epoch and dis-
cussions of performance practice problems. Topics of study may change with each time
of offering.
RESTRICTIONS: Requires satisfactory score on music history graduate placement exam.
MUSC 620 Large Ensemble 1
Participation as a performer in a large ensemble.
RESTRICTIONS: Entry audition required.
MUSC 621 Chamber Ensemble 1
Participation as a performer in a chamber ensemble.
RESTRICTIONS: Entry audition required.
MUSC 622 Materials and Methods of Research 3
Examines the major materials used in research in the areas of music history, theory, per-
formance and education, as well as the methods of conducting research in these fields.
RESTRICTIONS: Requires permission of instructor.
MUSC 636 Advanced Choral Conducting 3
A study of the conducting of vocal ensemble literature of the historical periods from the
Renaissance through the 20th century.
RESTRICTIONS: Requires permission of instructor.
### NUTRITION AND DIETETICS

**MUSC 637 Advanced Instrumental Conducting 3**
Advanced conducting techniques for directors of instrumental performing groups.

**MUSC 638 Large Ensemble Practicum 1**
Participation in a large ensemble and seminar with ensemble director.

**MUSC 640 History and Philosophy of Music Education 3**
Topics include philosophical issues concerning the role of arts in education, intrinsic and extrinsic rationales for music in the schools, and arts advocacy at the local, state, and national levels. Also includes the history and philosophy of music education in the United States from the colonial period to the present.

**MUSC 661 Advanced Private Study 1-4**
Advanced instruction in voice or instrument. The student adds to course title the branch of study elected: piano, organ, voice or an orchestral instrument, e.g., Private Study (Piano).

**MUSC 662 Advanced Private Study 1-4**
Advanced instruction in voice or instrument. The student adds to course title the branch of study elected: piano, organ, voice or an orchestral instrument, e.g., Private Study (Piano).

**MUSC 663 Advanced Keyboard Literature 3**
Style, structure and technical performance of keyboard music from the 17th century to the present.

**MUSC 675 General Music K-12 3**
Learning strategies to develop listening, performing, creating and literacy skills in a general music curriculum. Recommended for directors of performing ensembles.

**MUSC 676 Seminar in Music Education 3**
Advanced topics in music education.

**MUSC 679 Professional Improvement Project I 3**
Development of a portfolio to include unit plans based on synthesis of content from prior courses.

**MUSC 680 Professional Improvement Project II 3**
Implementation of the portfolio developed in MUSC679.

**MUSC 681 Pedagogy and Literature 3**
The study of teaching methods and literature (music scores, books and other media). Shows teaching skills needed at the university level and lower.

**MUSC 695 Advanced Analytical Techniques 3**
Examination of structural, melodic, rhythmic, harmonic and textural aspects of selected music literature and their significance in artistic performance.

**MUSC 869 Master's Thesis 1-6**

### NUTRITION AND DIETETICS

**NTDT 103 Introduction to Nutrition Professions 1 PF**
Career opportunities in dietetics and nutrition. Provides information about undergraduate programs and the competencies required of dietitians and nutritional scientists. Introduces opportunities for undergraduate research. Introduction to concepts of a profession and relevant professional organizations.

**NTDT 200 Nutrition Concepts 3**
Functions and sources of nutrients, dietary adequacy and dietary guidelines. Energy balance, weight control and evaluation of popular diets and ideas. Includes nutrition concerns such as world food problems, food safety, alcohol and nutrition.

**NTDT 205 Nutrition in the Lifespan 3**
Nutrition and health during the different stages of life: pregnancy, lactation, infancy, preschool years, middle childhood, adolescence, adulthood and later maturity.

**NTDT 222 Nutrition Controversies 1**
Explores topical issues in nutrition via discussion format.

**NTDT 240 Introduction to Clinical Dietetics 3**
Orientation to clinical dietetics, basic skills required for nutritional care; nutritional assessment, dietary counseling, clinical simulations, nutritional care plans and composition of basic therapeutic diets.

**NTDT 255 Multicultural Food Habits 3**
Food habits of diverse cultural groups. Determinants of traditional and current food habits, historical and cultural context. Emphasis on ethnic population groups in the United States. Contributions and selected dietary patterns to knowledge of health and disease prevention. Impact of migration to different cultural settings.

**NTDT 256 Multicultural Foods Laboratory 1**
Sampling of foods of diverse cultural groups utilizing demonstrations by restauranteurs and individuals as well as class preparation. Field trips to markets and ethnic food stores.

**NTDT 310 Nutrition and Activity 3**
Energy and nutrient needs for activity with emphasis on particular physical and athletic activities; common myths and fallacies concerning diet and athletic performance; and appropriate dietary approaches for specific activities and active people.

**NTDT 321 Quantity Food Production and Service 3**
Principles of quantity food production and delivery systems; menu planning and purchasing design. Safety, sanitation and technical operations in a food service system. Applied computer-assisted management.

**NTDT 322 Food Service Systems Management 4**
Organization and administration of food service systems. Function and responsibilities specific to this management. Personnel, food cost accounting, production and service facility planning, and environmental design.

**NTDT 325 Laboratory in Quantity Food Production and Service 1**
Laboratory experience in quantity food production and delivery systems. Application of principles of sanitary practice, technical reporting and management.

**NTDT 326 Computer-Assisted Foodservice Systems Management 2**
Investigation of microcomputers and computer software programs that could be used in the management of foodservice systems. Understanding of basic computer concepts, appropriate applications, maintenance of data bases and data integrity and use of management information reports.

**NTDT 330 Nutrition Counseling 3**
Theories, skills and techniques of nutrition interviewing and counseling.

**NTDT 331 Quantity Foods Practice 6**
Supervised practice in quantity food production and delivery systems with emphasis on sanitation, employee training, quality standards and controls, and menu planning.

**NTDT 332 Foodservice Management Practice 6**
Supervised practice in foodservice systems management, emphasizes organization and administration, marketing, management of personnel and financial resources and facility design.

**NTDT 350 Nutrition and Older Adults 3**
Discussion of the physiology of aging on fundamental nutrition processes, food and nutrient requirements and intake, assessment of nutritional status, and nutrition related problems of older adults.

**NTDT 366 Independent Study 1-6**

**NTDT 400 Macronutrients 3**
Metabolism of carbohydrates, proteins and fats in human nutrition, interdependence and relation to energy metabolism/balance, scientific bases of macronutrient requirement during the life cycle.

**COREQ:** NTDT200, CHEM214 and CHEM216.
NUTRITION AND DIETETICS

NTDT 401  Micronutrients 3
Mechanisms and interactions of vitamins and minerals in cellular metabolism, scientific bases of nutrient requirements during the life cycle.
PREREQ: NTDT200, NTDT400, CHEM214 AND CHEM216

NTDT 403  Dietetics Seminar 1 PF
Explores registration, specialty certification and licensure for dietitians. Discusses the roles and activities of the national professional organization. The American Dietetic Association. Clarifies professional values and ethical behavior.
RESTRICTIONS: Open only to Senior dietetics majors.

NTDT 404  Nutrition Seminar 1 PF
Clarifies professional and ethical behavior of nutrition professionals. Roles and activities of relevant professional organizations. Career development, position acquisition and interview.
RESTRICTIONS: Open to majors in Applied Nutrition and Nutritional Science.

NTDT 420  Maternal and Infant Nutrition 3
Maternal physiological adjustments in pregnancy and their relationship to nutritional needs; effect of maternal nutrition on fetal growth and development; physiology of lactation and maternal nutrient needs; and neonatal nutritional needs and current infant feeding practices.
PREREQ: NTDT400 and BISC276

NTDT 421  Nutrition Research Methods 2
Discussion of and experience with selected methods and techniques in nutrition research.
PREREQ: NTDT400 and a course in statistics.

NTDT 430  Nutrition Clinic Practicum 1-3
Experience in ongoing activities of the University of Delaware Nutrition Clinic including client counseling, group presentations, nutrition education materials development and research activities.
PREREQ: NTDT330
RESTRICTIONS: Requires permission of instructor.

NTDT 440  Nutrition and Disease 3
Examination of the metabolic and physiological aberrations in selected conditions and implications for medical nutrition therapy.
PREREQ: NTDT400 and BISC106 or BISC406

NTDT 445  Nutrition Education 3
Identification of objectives for nutrition education, selection and use of methods, materials and resources for different age levels; integration of nutrition into the total health and consumer aspects of school, non-school and adult programs.
PREREQ: NTDT200

NTDT 450  Clinical Dietetics Practice 8
Supervised practice in clinical nutrition, nutritional assessment and case management of patients undergoing various medical treatments, nutritional counseling and education of hospitalized patients.
PREREQ: NTDT132
COREQ: NTDT440
RESTRICTIONS: Open to CUD majors only.

NTDT 452  Topics in Human Nutrition 2
Current perspectives on the physiological functions of nutrients and other food constituents.
PREREQ: NTDT400 and BISC106/116 or BISC276

NTDT 460  Community Nutrition 3
Nutritional care as a part of health maintenance and health care delivery; the relationship of community resources, structure and dynamics to an individual's ability to be well fed. Nutritional needs and programs. Means of affecting change in nutrition knowledge and practice.
PREREQ: NTDT400 and NTDT321

NTDT 464  Community Nutrition Field Experience 2
Direct client contact through delivery of nutritional services in community health maintenance and health care delivery facilities. First-hand experience with the nutritional management of children in a community nutrition program.
PREREQ: NTDT322 and NTDT440
COREQ: NTDT460

NTDT 466  Independent Study 1-6
Supervised practice in nutritional components of community programs in health promotion, health maintenance and community health care delivery settings.
PREREQ: NTDT450
COREQ: NTDT440
RESTRICTIONS: Open to CUD majors only.

NTDT 470  Community Dietetics Practice 6
Supervised practice in nutritional components of community programs in health promotion, health maintenance and community health care delivery settings.
PREREQ: NTDT450
COREQ: NTDT440
RESTRICTIONS: Open to CUD majors only.

NTDT 475  Transcultural Food Habits 5
Travel study of transcultural food habits: attitudes, beliefs, customs and taboos. Visits to major food industries and health organizations, and interaction with indigenous populations.
PREREQ: NTDT200

NTDT 550  Dietetics Practicum I 4 PF
Introduces supervised practice experiences for incorporation and application of skills, knowledge, and attitudes with special emphasis on current dietetic issues facing the health professional in public health nutrition.
COREQ: NTDT650
RESTRICTIONS: Open to Dietetic Internship students only.

NTDT 551  Dietetics Practicum II 4 PF
Continued supervised practice experiences for incorporation and application of skills, knowledge, and attitudes, focusing on entry-level competence with special emphasis on current dietetic issues facing the health professional.
PREREQ: NTDT550
COREQ: NTDT651
RESTRICTIONS: Open to Dietetic Internship students only.

NTDT 610  Fundamentals of Nutrition and Metabolism 3
Review of metabolic processes related to nutrition and current research related to macronutrient and micronutrient functions.
RESTRICTIONS: Undergraduate preparation in biochemistry, physiology and basic nutrition.

NTDT 611  Advanced Nutrition 3
Metabolism and its relation to human nutrition; current literature; methods and techniques of nutrition research.
PREREQ: NTDT400 or NTDT610

NTDT 615  Advanced Nutrition and Physical Activity 3
Critical analysis of current research on effects of nutrition, food and diet on physical activity and optimal athletic performance. Develops specific topics and interests through independent projects.
PREREQ: Undergraduate nutrition and physiology courses.

NTDT 620  Maternal and Infant Nutrition 3
Maternal physiological adjustments in pregnancy and their relationship to nutritional needs; effect of maternal nutrition on fetal growth and development; physiology of lactation and maternal nutrient needs; neonatal nutritional needs and current infant feeding practices.
PREREQ: NTDT400 and BISC106 or BISC406

NTDT 621  Nutrition Research Methods 2
Discussion and experience with selected methods and techniques in nutrition research.
PREREQ: Upper-division course work in nutrition, biochemistry and physiology.

NTDT 624  Monogastric Nutrition 3
See ANSC624 for course description.

NTDT 630  Trace Minerals and Vitamins 3
Recent advances in knowledge of the nutritional significance of trace minerals and vitamins; their physiological function(s); factors affecting needs and utilization; assessment of requirements, occurrence in food supply, and current issues and concerns. Primary focus on human nutrition with comparative aspects in other living systems utilized to illustrate significant similarities and/or differences. May be cross-listed with ANSC630.
PREREQ: Junior-level course work in human or animal nutrition, biochemistry or biological sciences.

NTDT 640  Nutrition and Aging 3
Addresses topics related to the effects of aging on fundamental nutrition processes, food and nutrient requirements, nutrition screening and assessment of nutritional status, nutrition intervention and food assistance programs and nutrition related disorders of older adults.
PREREQ: NTDT310 or NTDT400 or NTDT401

NTDT 645  Nutrition Education 3
Identification of objectives for nutrition education; selection and use of methods, materials and resources for different age levels, and integration of nutrition into the total health and consumer aspects of school, non-school and adult programs.
PREREQ: NTDT200

NTDT 650  Current Perspectives in Dietetics I 2
Continued exploration of roles and responsibilities of today's dietitian in foodservice management, clinical, and community dietetics. Emphasis on concepts relevant to evolving therapies and technologies in the profession and issues that influence ethical, legal, and professional responsibilities of dietitians.

NTDT 651  Current Perspectives in Dietetics II 2
Continued exploration of roles and responsibilities of today's dietitian in clinical, community and foodservice management dietetics. Emphasis on concepts relevant to evolving therapies and technologies in the profession and issues that influence ethical, legal, and professional responsibilities of dietitians.
NURS 205 SOCIETAL CONTEXT OF NURSING 3
Introduces conceptual frameworks for nursing practice within a pluralistic society. Utilizes historical perspective to examine the current status of nursing within the health care system. Discusses importance of professionalism, including ethical and legal responsibilities.
PREREQ: BISC207, BISC208, CHEM105, MATH114 and SOC102 level or above.
COREQ: NURS215.
RESTRICTIONS: Open to nursing majors only.

NURS 212 PATHOPHYSIOLOGICAL CONCEPTS 3
Application of sciences to maintenance of, and alterations in, homeostasis. Pathophysiological concepts relate to stress, inflammation, immunity, neoplasia, pain and alterations in fluid/electrolytes balance, blood flow and respiration. Exploration of disorders common throughout an individual's lifespan.
PREREQ: BISC207, BISC208, CHEM105 and CHEM106.
COREQ: BISC371.
RESTRICTIONS: Open to nursing majors only.

NURS 215 BASIC NURSING PRACTICE SKILLS 1
Introduces basic client care skills. Emphasis on the intellectual, interpersonal and psychomotor skills foundational to nursing practice.
PREREQ: BISC207, BISC208, CHEM105 and ENGL110.
COREQ: NURS205.
RESTRICTIONS: Open to nursing majors only.

NURS 305 DETERMINANTS OF WELLNESS 10
Utilization of the nursing process to assist well clients of all ages in the maintenance and promotion of health. Biopsychosocial assessment of the well client within a family context and in relation to other systems of health care. Includes clinical experience.
PREREQ: NURS205, NURS215, MATH114, ENGL301, CHEM106, IFST201, BISC276, BISC371, PHYS104, ND7100, ANTH100 level and SOC200 level.
RESTRICTIONS: Requires 2.0 G.P.A.

NURS 306 DETERMINANTS OF WELLNESS 5
Selected concepts/theories pertinent to promotion of optimal health of well clients of all ages from diverse sociocultural backgrounds within the context of family, community and health care system.
PREREQ: BISC276, BISC371, CHEM106, IFST201, NURS205, NURS215, ND7100 and PSYC201.
COREQ: NURS312, NURS314, NURS315.
RESTRICTIONS: Open to nursing majors only. Offered in Fall.

NURS 307 RESTORATIVE NURSING PRACTICE I 10
Biopsychosocial stresses in health and illness with emphasis on the nursing process, the client's state of disequilibrium, role of the nurse and therapeutic intervention. Includes clinical experience with individuals and groups.
PREREQ: NURS305, NURS312 and NURS314.
RESTRICTIONS: Requires 2.0 G.P.A.

NURS 308 RESTORATIVE NURSING PRACTICE I 4
Concepts/theories pertinent to promotion of optimal health of clients experiencing common and/or recurring health problems.
PREREQ: NURS305, NURS312, NURS314 and NURS315.
COREQ: NURS317; NURS318 or NURS319; and NURS332.
RESTRICTIONS: Open to nursing majors only. Offered in Spring.

NURS 312 PATHOPHYSIOLOGY 3-4
Focuses on biological processes leading to alterations of body structure and functions. Emphasis on identification of etiology and pathogenesis of selected diseases.
PREREQ: Nursing major - BISC276, BISC371, CHEM106, IFST201, NURS205, NURS215, ND7100 and PSYC201.
COREQ: Nursing major - NURS306, NURS314 and NURS315.
RESTRICTIONS: Open to nursing majors only. Nursing major must take 3 credits. BRN majors must take 4 credits.

NURS 314 PSYCHOPATHOLOGY 2-3
Delineates psychopathological processes across the life span. Emphasis on the etiology, manifestations and treatment options of selected psychopathological processes. Address current trends and issues in the mental health field.
PREREQ: Nursing majors - BISC276, BISC371, CHEM106, IFST201, NURS205, NURS215, ND7100 and PSYC201.
COREQ: Nursing majors - NURS306, NURS312 and NURS315.
RESTRICTIONS: BRN major - Admission to BRN Program. Offered to nursing majors only. Nursing major must take 2 credit hours. BRN major must take 3 credit hours.

NURS 315 PRACTICUM I 4
Experiences for incorporation and application of selected concepts/theories underlying nursing care for well clients of all ages, from diverse sociocultural backgrounds, within the context of family, community and health care systems. Comprises 112 clinical hours.
PREREQ: BISC276, BISC371, CHEM106, IFST201, NURS205, NURS215, ND7100, and PSYC201.
COREQ: NURS312, NURS314, NURS315 and NURS306.
RESTRICTIONS: Open to nursing majors only. Offered in Fall.

NURS 317 PRACTICUM II 3
Experiences for incorporation and application of selected concepts/theories underlying nursing care that promotes optimal health of adult clients with common and/or recurring health problems. Emphasizes assessment and planning steps of nursing process. Comprises 84 clinical hours.
PREREQ: NURS306, NURS312, NURS314 and NURS315.
COREQ: NURS308, NURS318 or NURS319; and NURS332.
RESTRICTIONS: Open to nursing majors only. Offered in Spring.

NURS 318 PRACTICUM III 3
Experiences for incorporation and application of selected concepts/theories underlying nursing care that promotes optimal health of adult clients with common and/or recurring health problems. Emphasizes assessment and planning steps of nursing process. Comprises 84 clinical hours.
PREREQ: NURS306, NURS312, NURS314 and NURS315.
COREQ: NURS317, NURS318 and NURS332.
RESTRICTIONS: Open to nursing majors only. Offered in Spring.

NURS 319 PRACTICUM IV 3
Experiences for incorporation and application of selected concepts/theories underlying nursing care that promotes optimal health of adults with mental illness. Emphasizes assessment and planning steps of nursing process. Comprises 84 clinical hours.
PREREQ: NURS306, NURS312, NURS314 and NURS315.
COREQ: NURS308, NURS317 and NURS332.
RESTRICTIONS: Open to nursing majors only. Offered in Spring.

NURS 332 PHARMACOLOGICAL NURSING RESPONSIBILITY 3
Uses the conceptual framework of human needs to focus on the therapeutic and adverse biological, psychological and social reactions to pharmacological agents; drug use and medication abuse; client teaching; pertinent laboratory tests; current research findings; Nursing responsibilities emphasized with the nursing process.
PREREQ: NURS306, NURS312, NURS314, NURS315 and MATH114.
COREQ: NURS308; NURS317; NURS318 or NURS319.
RESTRICTIONS: Open to nursing majors only.

NURS 340 CURRENT PERSPECTIVES IN NURSING 2
Introduces nursing theory and conceptual foundations for practice within a pluralistic society. Provides overview of principles of nursing education and practice at the baccalaureate level. Focuses on healthcare needs within diverse practice settings, emphasizing emerging legal and ethical responsibilities, economic and sociocultural influences.
RESTRICTIONS: Admission to BRN Program.
NURS 342 NURSING INFORMATICS 2
Addresses the current utilization of evolving technologies in nursing/client education, practice, administration and research.
RESTRICTIONS: Admission to BRN Program.
NURS 343 TRANSITION TO BACCALAUREATE NURSING 1
Addresses issues related to the socialization and transition to baccalaureate nursing education and practice. Complements content of NURS340 and NURS342. Incorporates the practical application of evolving technologies with emphasis on nursing/client education.
Introduces University and BRN Program resources.
PREREQ: NURS340 and NURS342.
NURS 344 WELLNESS AND HEALTH ASSESSMENT 2
Explores selected concepts, theories and skills utilized in health promotion and disease prevention of individuals from socioculturally diverse populations within the context of family, community and healthcare system. Includes key elements of a biopsychosocial-cultural health history and health assessment of individuals across the life course.
PREREQ: NURS343

NURS 366 INDEPENDENT STUDY 1-6

NURS 405 INTRODUCTION TO NURSING RESEARCH 2-3
Introduction to nursing research methods basic to identification of researchable nursing problems and to evaluation of existing nursing research for consumerism.
PREREQ: Nursing major - NURS308, NURS317, NURS318 or NURS319, and NURS332 BRN major - NURS441
COREQ: Nursing major - NURS408, NURS417, NURS418 or NURS419
RESTRICTIONS: Nursing major must take 3 credit hours. BRN major must take 2 credit hours. Open to nursing majors only.

NURS 407 RESTORATIVE NURSING PRACTICE II 10
PREREQ: NURS307, NURS314 and NURS332
RESTRICTIONS: Requires 2.0 G P A

NURS 408 RESTORATIVE NURSING PRACTICE II 4
Concepts and theories pertinent to promotion of optimal health of clients with selected and less common health problems.
PREREQ: NURS308, NURS317, NURS318 or NURS319, NURS332, ANTH100 level or above, PHYS104 and ENGL301
COREQ: NURS417; NURS418 or NURS419; and NURS405
RESTRICTIONS: Open to nursing majors only. Offered in Fall.

NURS 409 PROFESSIONALISM IN NURSING PRACTICE 2
Concepts, theories and issues that influence nurses’ legal, ethical and professional responsibilities to nursing and to the public.
PREREQ: NURS405, NURS408, NURS417, NURS418 or NURS419
COREQ: NURS420
RESTRICTIONS: Open to nursing majors only. Offered in Spring.

NURS 410 PROFESSIONALISM IN NURSING PRACTICE 8
Research, current issues in nursing, management, including strategies of administration and complex organizational theory, and the concept of interdisciplinary collaboration of health care personnel as they relate to clients in varying stages of health and illness. Includes clinical experience.
PREREQ: NURS322 and NURS407
RESTRICTIONS: Requires 2.0 G P A

NURS 411 TOPICS IN HEALTH CARE DELIVERY 1-6
A consideration of selected issues and problems of nursing practice within the health care delivery system. Exploration of some topics may include a laboratory or clinical component. Variable topics.
PREREQ: NURS308; NURS317, NURS318 or NURS319; and NURS332. No prerequisites for BRN major.
COREQ: NURS405, NURS417; NURS418 or NURS419
RESTRICTIONS: Open to nursing majors only. May be repeated for up to six credit hours.

NURS 417 PRACTICUM V 3
Experiences for incorporation and application of selected concepts and theories underlying nursing care that promotes optimal health for adult clients with less common health problems. Emphasizes implementation and evaluation steps of nursing process. Comprises 84 clinical hours.
PREREQ: NURS308; NURS317, NURS318 or NURS319; and NURS332
COREQ: NURS408, NURS418 or NURS419; and NURS405
RESTRICTIONS: Open to nursing majors only. Offered in Fall.

NURS 418 PRACTICUM VI 3
Experiences for incorporation and application of selected concepts/theories underlying nursing care that promotes optimal health of children with common and/or recurring health problems. Emphasizes implementation and evaluation steps of nursing process. Comprises 84 clinical hours.
PREREQ: NURS308; NURS317, NURS318 or NURS319; and NURS332
COREQ: NURS408, NURS417 and NURS405
RESTRICTIONS: Open to nursing majors only. Offered in Fall.

NURS 419 PRACTICUM VII 3
Experiences for incorporation and application of selected concepts and theories underlying nursing care that promotes optimal health of adults with mental illness. Emphasizes implementation and evaluation steps of nursing process. Comprises 84 clinical hours.
PREREQ: NURS308, NURS317, NURS318 or NURS319, and NURS332.
COREQ: NURS408, NURS417 and NURS405
RESTRICTIONS: Open to nursing majors only. Offered in Fall.

NURS 420 PRACTICUM VIII 6
Selected experiences for the exploration and application of the basic concepts and theories of nursing leadership and management that facilitate transition to the professional role of the nurse. Comprises 168 clinical hours.
PREREQ: NURS405, NURS408, NURS417, and NURS418 or NURS419
COREQ: NURS407
RESTRICTIONS: Open to nursing majors only. Offered in Spring.

NURS 431 HONORS: DYING AND THE HOSPICE ALTERNATIVE 1
Exploration of personal attitudes and philosophy of death and dying and predominant views of society. Discussion of needs of persons involved in the dying experience with special attention to how hospice care meets those needs, as well as hospice development in modern British and U.S. health systems.

NURS 441 LEARNING LABORATORY: HEALTH ASSESSMENT 1
Demonstrates and integrates physical and psychological assessment skills on selected clients in the laboratory setting. Incorporates the practical application of evolving technologies in nursing practice and administration. Includes orientation to BRN Role Practicum.
PREREQ: NURS344.

NURS 442 COMMUNITY HEALTH NURSING 3
Focuses on conceptual foundations for community health nursing practice with the community, family and individual as clients. Diversity in nursing roles and practice is related to community health promotion and community health problems.

NURS 443 BRN ROLE PRACTICUM 3
A preceptorship clinical experience focused upon the integration of concepts learned in baccalaureate nursing education.
PREREQ: NURS441 and NURS442.
COREQ: NURS445.
RESTRICTIONS: NURS446 is either a prerequisite or a corequisite.

NURS 445 NURSING RESEARCH APPLICATIONS 1
Demonstrates the practical application of technology in selected steps of the research process. Explores the process of research utilization as a mechanism to develop a research based nursing practice.
PREREQ: NURS441, NURS405 and NURS442.
COREQ: NURS443.
RESTRICTIONS: NURS446 is either a prerequisite or a corequisite.

NURS 446 LEADERSHIP AND ORGANIZATIONAL BEHAVIOR 2
Introduces organizational theory and structure, nursing care delivery systems and components of leadership. Focuses on the role of the nurse leader in organizing, teaching, decision making, evaluating, planning change and managing conflict.
PREREQ: NURS441.

NURS 462 PHYSICAL ASSESSMENT OF ADULTS 3
Introductory course in the physical assessment of adults for registered nurses to expand their skills in health assessment. Explores all aspects of the physical examination of adults covered with limited clinical application.
RESTRICTIONS: Requires permission of instructor.

NURS 466 INDEPENDENT STUDY 1-6

NURS 470 WELLNESS: SURVIVAL IN MODERN SOCIETY 3
Exploration of major issues in wellness care: holistic movements, stress, habit control, nutritional controversies, touch and massage, physical fitness and health maintenance organizations. Nursing roles emphasized in context of facilitation of wellness.

NURS 800 HEALTH ASSESSMENT OF THE AGED 4
Knowledge and theory of biophysical aging and psychosocial development. Methods of logical clinical protocol in a systems approach to collect and arrange data as a baseline for nursing diagnoses.
PREREQ: NURS312.
RESTRICTIONS: Open to nursing majors only. Requires permission of instructor.

NURS 801 HEALTH PROMOTION AND RESTORATION FOR THE AGED 4
Knowledge, theory and nursing skills for health promotion, maintenance and restoration of abilities of aged individuals with functional losses complicated by psychosocial problems. Clinical experience with individuals and their families with a multidisciplinary healthcare team approach.
PREREQ: NURS800.
RESTRICTIONS: Open to nursing majors only. Requires permission of instructor.

NURS 802 ACUTE CARE NURSING OF THE AGED 4
PREREQ: NURS801.
RESTRICTIONS: Open to nursing majors only. Requires permission of instructor.
Nursing

Nursing 872 Medical-Surgical Nursing III 4
Exploration of nursing theory as applied to patients with cardiopulmonary or with oncolo-
gical nursing problems, and with complex physiological and psychosocial problems. Experiential learning focuses on the practice of the specialty with patients, families and
groups in a variety of settings
PREREQ: NURS871
RESTRICTIONS: Requires permission of instructor

Nursing 880 Nursing Assessment of Women, Children and Families 4
Integration of theories and concepts related to assessment of health and developmental
status of women, children and their families
PREREQ: NURS880
RESTRICTIONS: Requires permission of instructor

Nursing 881 Nursing of Women and Developing Families I 4
Biopsychosocial needs of women and developing families. Emphasis on nursing interven-
tion to maintain or restore steady state in clients with health care needs of varying
degree of complexity
PREREQ: NURS880
RESTRICTIONS: Requires permission of instructor

Nursing 882 Nursing of Women and Developing Families II 4
Biopsychosocial needs of women and developing families. Emphasis on nursing interven-
tion to maintain or restore steady state in clients with health care needs of increased
complexity
PREREQ: NURS881
RESTRICTIONS: Requires permission of instructor

Operations Research

Operations Research 601 Survey Operations Research I 3
Covers various deterministic mathematical programming methods (LP, integer dynamic
nonlinear and goal) network models and Markov chain analysis
PREREQ: Linear algebra

Operations Research 602 Survey Operations Research II 3
Oriented towards developing analysis of dynamic production decision processes primari-
ly within stochastic settings. Estimation of linear and nonlinear systems of equations
along with transportation models
PREREQ: Linear algebra

Operations Research 603 Operations Research Practice 3
Instructors from hard sciences and social sciences introduce realistic Operations
Research case studies based on their expertise. Students implement proposed solution
methodologies using a variety of available computer software packages
PREREQ: ORES601
COREQ: ORES602

Operations Research 650 Urban Transportation Systems 3
See CIEG650 for course description

Operations Research 690 Operations Research Seminar 0 PF
Seminars to be given by faculty and by visiting academic, industry and government per-
sons. Graduate students provide topical insights in significant methods and results of cur-
current research in operations research

Models and principles of basic interest to the theory and practice of operations research
Classic models of inventory and queuing theories, maintenance and replacement or equip-
ment and government planning. Contemporary models from research literature of energy
management, urban planning, artificial intelligence and flexible manufacturing systems
COREQ: MATH529, STAT601 or MATH630

Operations Research 802 Operations Research Applications 3
Applications of models and principles of basic interest to the theory and practice of oper-
ations research. Classic models of inventory and queuing theories, maintenance and replac-
ent of equipment and government planning. Contemporary models from research literature of energy
management, urban planning, artificial intelligence and flexible manufacturing systems
COREQ: MATH529, STAT601 or MATH630

Operations Research 806 Research Techniques and Procedures 3
See PREC806 for course description

Operations Research 810 International Agricultural Trade Special Topics 3
See PREC810 for course description

Operations Research 827 Advanced Production Economics 3
See PREC827 for course description

Operations Research 834 Seminar in Resource Economics 3
See PREC834 for course description

Research

Research 868 Research 1-6

Research 869 Master's Thesis 1-6

Pre-Candidacy Study 964 Pre-Candidacy Study 3-12 PF
Research and readings in preparation of dissertation topic and/or qualifying examina-
tions for doctoral students before admission to candidacy but after completion of all
required coursework
RESTRICTIONS: Not open to students who have been admitted to candidacy

Doctoral Dissertation 969 Doctoral Dissertation 1-12 PF

Philosophy

Philosophy 100 Philosophies of Life 3
Survey of selected past and present moral philosophies that people strive to live by, typi-
cally including individualistic, group-oriented, religious and nonreligious positions. May
be cross-listed with WOMS100

Philosophy 101 Great Western Philosophers 3
Survey of the key ideas of great Western philosophers concerning the nature of reality
as they have been known. Focus on individual philosophers such as Plato, Aristotle,
Descartes, Kant, Hegel, James and Wittgenstein

Philosophy 102 Introduction to Philosophy 3
An examination of such central philosophical problems as ethics, theories of knowledge,
the nature of reality, philosophy of religion and political philosophy

Philosophy 105 Critical Thinking 3
Emphasis on developing skill at logical criticism of arguments. Topics include informal
colloquial fallacies, deceiving with statistics, the role of definitions in reasoning, the importance
of evidence and confirmation

Philosophy 109 Modern Religious Issues 3
The biblical world view and modern science, controversies over the nature of Scripture,
doctrines of religious authority, the nature of theological language and existentialist inter-
pretations of myth

Philosophy 125 Topics: Philosophy in Popular Culture 1-4
Philosophical ideas expressed in popular media such as science fiction or fantasy litera-
ture, films and music. Topics are variable
RESTRICTIONS: May be repeated for up to four credit hours

Philosophy 200 Business Ethics 3
Ethical theory applied to moral problems in business. Corporate social responsibility,
and ethical issues in advertising, personnel and investment

Philosophy 201 Social and Political Philosophy 3
Classical and contemporary views on such problems as the proper scope and functions
of government, on what a just distribution of wealth is, and on the extent of an individu-
al's rights, liberties and obligation to obey the law

Philosophy 202 Contemporary Moral Problems 3
The application of philosophical techniques to contemporary moral problems such as
abortion, punishment, biomedical ethics, reverse discrimination and sexual morality.
May be cross-listed with WOMS203

Philosophy 203 Ethics 3
Study of moral value, moral obligation and moral virtue through comparison of notable
schools of ethical theory, including utilitarianism, existentialism, Kantianism, classical
Greek eudaemonism, pragmatism and Thomism

Philosophy 204 World Religions 3
Varieties of religious belief and practice from diverse cultures, including representa-
tive Asian and Western traditions, studied mainly in terms of their historical development and
importance

Philosophy 205 Logic 3
Concepts and techniques of elementary symbolic logic: truth and consistency of sen-
tences, validity and soundness of arguments; translation of English sentences into a for-
mal language, construction of truth tables and the use of a system of natural deduction to
prove the validity of deductive arguments

Philosophy 206 Introduction to Science, Technology and Society 3
See CSE206 for course description

Philosophy 207 Inductive Logic and Scientific Method 3
Critical survey of basic concepts and forms of inductive reasoning. Applications to the
physical, social and biomedical sciences. Topics include: interpretations of prob-
ability, probabilistic fallacies, methods of statistical induction, logic of hypothesis test-
ing, judging correlations, criteria of causation, experimental design and definitions
of confirmation.
PHIL 208  INTRODUCTION TO JEWISH PHILOSOPHY  3
Fundamental issues in philosophy of religion reflecting both general theological
approaches to resolving the tension between philosophy and religion and the unique
Jewish attempt to do so. Topics include: God, miracles, good and evil, divine command-
ments and free will. May be cross-listed with JWST208

PHIL 209  PHILOSOPHY OF RELIGION  3
Religious experience, proofs for God's existence, religious language and critiques of reli-
gion. Selected special topics such as mysticism, evil, atheism, miracles, immortality and
myth

PHIL 210  WOMEN AND RELIGION  3
See WOMS210 for course description

PHIL 211  BASIC DECISION THEORY  3
Rational decision-making using only elementary logic and high-school algebra. Decisions
under ignorance: max-min rules for preference orderings; Decisions under risk; probabil-
ity, utility, and the expected-utility rule. Game theory: equilibrium strategies; prisoner's
dilemma. Social choices: voting paradoxes and Arrow's theorem

PHIL 216  INTRODUCTION TO FEMINIST THEORY  3
The concepts of love, marriage, sexuality, family, work, power and equality of women.
Theories of women and their position in society, including classical Marxism, the status
politics of the suffragettes, radical feminism and socialist feminism. May be cross-
listed with WOMS216

PHIL 225  SCIENCE OR PSEUDOSCIENCE  3
Examination of claims and theories like astrology, biorythms, parapsychology, ancient
astronauts and the Bermuda triangle. Emphasis on methodology, patterns of reasoning
and assumptions used to support such claims and theories and how they compare with
those used in natural and social sciences. Topics include confirmation, explanation, cau-
sation, testing, scientific method, rationality and scope of science

PHIL 226  MIND, ESP AND SURVIVAL  3
An exploration of major philosophical conceptions of the relation of mind (soul) and brain.
Implications for the nature of mind from the literature of psychic research and immortality

PHIL 229  THE NATURE OF SCIENCE  3
See CSCC229 for course description

PHIL 241  ETHICAL ISSUES IN HEALTH CARE  3
See CSCC241 for course description

PHIL 242  TOPICS: PHILOSOPHY OF EDUCATION  3
Themes and individuals in philosophy of education such as moral and character educa-
tion. Variable topics. May be repeated for degree credit. May be cross-listed with
EDST242
PREREQ: One philosophy course or permission of instructor

PHIL 244  PHILOSOPHY OF ART  3
An introduction to main philosophic problems concerning art: the nature, evaluation and
value of art.

PHIL 246  PHILOSOPHICAL PERSPECTIVES OF MEDICINE  3
See CSCC246 for course description

PHIL 250  ENGINEERING ETHICS  3
Concrete ethical problems in engineering practice, both professional/entrepreneural and in
industrial research settings. Other topics include the social responsibilities of engineering societies. May be cross-listed with CSCC250.

PHIL 301  ANCIENT PHILOSOPHY  3
Beginnings of Western science and philosophy. The pre-Socratics, Sophists, Socrates, post-Socratic ethics, Plato, Aristotle, the Epicureans, Stoics, Skeptics and Neoplatonists

PHIL 302  MEDIEVAL PHILOSOPHY  3
Christian European philosophy from the 4th to the 14th century. Augustine and early
medieval thought; Aquinas and the 13th century; Ockham and the rise of nominalism.
Problems such as the relation between faith and reason, the possibility of demonstrating
God's existence and the status of universals.

PHIL 303  MODERN PHILOSOPHY  3
Main trends: Francis Bacon and scientific empiricism; Thomas Hobbes and materialism,
Descartes, Spinoza and Leibniz; Locke, Berkeley, Hume and Kant; and the Age of
Enlightenment and its impact on theories of art and history

PHIL 304  NINETEENTH-CENTURY PHILOSOPHY  3
Major philosophies of the 19th century with special emphasis on Hegel and Nietzsche

PHIL 305  TWENTIETH-CENTURY PHILOSOPHY  3
Major philosophical movements from the 20th century to the present. Includes logical
empiricism and the recent criticism of this movement

PHIL 307  BLACK THOUGHT AND PHILOSOPHY  3
See BAM307 for course description

PHIL 308  JUSTICE AND EQUALITY  3
Theories of justice and rights. Constraints on liberty, the enforcement of morals, legal vs
moral responsibility, authority, disobedience and loyalty

PHIL 309  INDIAN RELIGION AND PHILOSOPHY  3
The Vedas, Upanishads, and Bhagavad-Gita; Sankhya, Yoga, Nyaya, Vaisheshika and
Mimamsa; Jainism and Indian Hinayana and Mahayana Buddhism, Vedanta and mod-
ern developments such as Aurobindo

PHIL 310  CHINESE RELIGION AND PHILOSOPHY  3
Ancient China: Confucianism, Taoism and the 100 Schools. The Buddhist conquest of
China: Buddhism in China and Chinese Buddhism Medieval Syntheses: Neo-Confucian-
ism. The Response to the West: Marxism and Modern Confucianism

PHIL 313  MAJOR THEOLOGICAL TRADITIONS  3
Selected major theologies of decisive importance for the historical development of
Christian thought and the relation of theology to philosophy and culture

PHIL 317  AMERICAN PHILOSOPHY  3
Classical American philosophers, including Emerson, Thoreau, Peirce, James and
Dewey. Includes ethics, epistemology and social and political theory

PHIL 320  THEORY OF KNOWLEDGE  3
An examination of some central issues in epistemology and metaphysics. The nature of
minds and the world, and the nature and possible extent of our knowledge of both

PHIL 322  EXISTENTIALISM  3
Study of the origins and development of existential philosophy. Emphasis on the fundamen-
tal insight into the nature of man that separates the existentialists from the rest of the West-
ern philosophical traditions. Sources include Pascal, Kierkegaard, Nietzsche and Sartre

PHIL 324  THE PHILOSOPHY OF LOVE  3
Erotic, agape, caritas, "passion-love," romantic love, fraternal love, friendship, Tristanism,
Don Juanism, the forms serving to identify discrete life-styles, ages and cultures. Readings
include Ortega y Gasset, Sartre, Santayana, Kierkegaard, Schopenhauer, Havelock,
Augustine, Platnus and Plato

PHIL 325  DIMENSIONS OF PERSONAL GROWTH  3
Using eudaimonist ("self-actualization") presuppositions, seeks to uncover the intrinsic
values, virtues and obligations of four stages of personal development: childhood, ado-
lescence, maturation and old age

PHIL 338  TOPICS IN PHILOSOPHY AND GENDER  3
Critical examination of philosophical issues raised by feminism. May be cross-listed with
WOMS338
RESTRICTIONS: May be repeated twice for degree credit when topics vary

PHIL 341  ETHICS OF ENGINEERING PROFESSION  1
Introduction to cases involving engineers' moral responsibilities; emphasis on making
reasonable ethical choices. May be cross-listed with CSCC341.

PHIL 345  PHILOSOPHY OF HISTORY  3
Nature and limits of our knowledge of the past, categories of explanation used by histo-
rians and the aim of historical inquiry. Speculation about the "meaning" of history and
the structure of historical process

PHIL 351  ADVANCED LOGIC  3
Axiomatic quantified predicate calculus with identity; axiomatic set theory and number
theory; and demonstration of metatheorems
PREREQ: PHIL205

PHIL 360  HUMANITIES COLLOQUIUM  3
See ARSC360 for course description. May be cross-listed with ENGL360

PHIL 366  INDEPENDENT STUDY  1-3

PHIL 390  HONORS COLLOQUIUM  3
See ARSC390 for course description. May be cross-listed with WOMS390

PHIL 392  HONORS COLLOQUIUM  3
See ARSC392 for course description. May be cross-listed with WOMS392.

PHIL 444  MEDICAL ETHICS  3
Seminar focuses on such topics as experimentation with human subjects, genetic engi-
neering and the moral problems of health care. May be cross-listed with CSCC444
RESTRICTIONS: For students of philosophy and health professions

PHIL 446  PHILOSOPHY OF LAW  3
The nature and function of law; relations among law, morality and society; the logic of
legal reasoning; and analysis of fundamental concepts and institutions

PHIL 454  PHILOSOPHY OF SOCIAL SCIENCE  3
Critical examination of the central historical and contemporary questions about the con-
cepts, methods, social structure and purposes of social science inquiry. May be cross-list-
ed with ANTH465
PREREQ: A theory of methodology course in a social science, or an epistemology or phi-
losophy of science course
PHILOSOPHY

PHIL 463  ETHICAL THEORY  3
Justification of ethical beliefs, alternative criteria of moral rightness and the meaning of moral concepts
PREREQ: PHIL202 or PHIL203

PHIL 465  SENIOR SEMINAR  3
Various authors and themes; e.g., Plato, Kant, epistemology, philosophy of mind
RESTRICTIONS: May be repeated once for credit when topics vary

PHIL 466  INDEPENDENT STUDY  1-3

PHIL 467  PHILOSOPHY OF TECHNOLOGY  3
Philosophical reflections on working with tools in the broadest sense; definitions; studies of processes, products and uses; and ethical, cultural and political critiques. Seminar format. May be cross-listed with CSCE647, MALS647 and/or URAF647

PHIL 868  RESEARCH  1-3
A detailed study of certain philosophical problems with special reference to research problems under way in the department

PHYSICS AND ASTRONOMY

PHYS 104  ELEMENTARY PHYSICS  3
Overview of the principles of physics and their applications. Course is designed for beginners with no previous exposure to physics
RESTRICTIONS: Requires working knowledge of algebra and the use of scientific notation. Only one course among PHYS101, PHYS104, PHYS201, PHYS207 and SCEN101 can count toward graduation

PHYS 133  INTRODUCTION TO ASTRONOMY  4
Objects of the universe from the earth to galaxies. How the universal laws that govern them; e.g., gravity and electromagnetic radiation, permit us to learn their nature from quantitative observations. Telescopic observations, visual and electronic, included in the laboratory

PHYS 139  STAR AND CONSTELLATION IDENTIFICATION  1
Familiarity with the sky, its changing aspects, constellations, mythology, bright stars, and planets. Topics will include use of sky maps and coordinates, how to estimate directions and time from knowledge of the sky, and the use of binoculars and small telescopes

PHYS 140  GREAT CONCEPTS OF PHYSICS  3
Designed for non-science majors, will concentrate on understanding both the content and impact of five great concepts of physics: the Newtonian Universe, Conservation of Energy, Entropy, Relativity, and Wave-Particle Duality. The influence of these concepts in other areas of human concern, e.g., philosophy, art, history, politics, medicine, etc. will be an important feature

PHYS 141  LIGHT, LASERS, CAMERAS, PERCEPTION  3
Introduction to the phenomena of light, optics and perception for non-science majors. Topics include: nature of light, sources of light and shadows, rainbows, mirages and other atmospheric phenomena, cameras, telescopes, microscopes, color creation and observation, physics influences in art, the human eye and perception

PHYS 143  ENERGY TECHNOLOGY AND SOCIETY  3
Basic principles of physics are applied to discuss forms of energy (mechanical, thermal, chemical, electrical and nuclear), and how energy is derived from sources such as coal, petroleum, solar, nuclear fission and fusion. Environmental consequences of energy use are treated.
PREREQ: College algebra

PHYS 144  CONCEPTS OF THE UNIVERSE  3
Survey of astronomy emphasizing early and modern concepts. Stars, planets, galaxies, cosmic evolution and intelligent life are studied in the context of physical principles which describe the dynamics of the universe. Scientific process is used to interpret observations that shape our perceptions of the cosmos.
RESTRICTIONS: Not for credit to students who have taken PHYS133 or PHYS134

PHYS 145  QUASARS, BLACK HOLES AND THE UNIVERSE  3
A non-mathematical course focusing on the role of explosions and other violent events in the universe. The major topics are Einstein's theory of special relativity, black holes, galaxies, exploding galaxies, quasars, the expanding universe, pulsars, supernovae and x-ray stars

PHYS 146  QUARKS, GLUONS, AND THE BIG BANG: PARTICLES AND COSMOLOGY  3
Non-mathematical course focusing on the elementary particles and their influence on the early evolution of the universe. Major topics are quarks and the forces they feel, Einstein's theory of relativity, Quantum Mechanics made fairly simple, and the Inflationary Universe
RESTRICTIONS: High School Algebra

PHYS 201  INTRODUCTORY PHYSICS I  4
First course in a two-part sequence with PHYS202 which provides a comprehensive introduction to physics for students in physical, biological, health, and environmental sciences. Topics include: geometrical optics, rectilinear mechanics, fluid, and thermodynamics.
PREREQ: MATH115
RESTRICTIONS: Requires a grade of "C" or better in MATH115 and strong mathematics background in geometry, algebra and trigonometry. MATH221 strongly recommended. Recommended for pre-dentistry students. Only one course among PHYS104, PHYS201, PHYS207 and SCEN101 can count toward graduation

PHYS 202  INTRODUCTORY PHYSICS II  4
Second course in a two-part sequence with PHYS201 which provides a comprehensive introduction to physics for students in physical, biological, health, and environmental sciences. Topics include: rotational and oscillatory motion, waves, electricity and magnetism, structure and properties of nuclei, atoms, molecules and solids
PREREQ: MATH115 and PHYS201
RESTRICTIONS: Requires a grade of "C" or better in MATH115 and strong mathematics background in geometry, algebra and trigonometry. MATH221 strongly recommended. Recommended for pre-dentistry students. Only one course among PHYS102, PHYS202 and PHYS208 can count toward graduation

PHYS 207  FUNDAMENTALS OF PHYSICS I  4
Calculus-based introduction to physics, with primary emphasis on mechanics. Integrates conceptual understanding with extensive problem solving and laboratory experience.
COREQ: MATH242
RESTRICTIONS: Only one course among PHYS101, PHYS104, PHYS207 and SCEN101 can count toward graduation

PHYS 208  FUNDAMENTALS OF PHYSICS II  4
Calculus-based introduction to physics, with primary emphasis on electricity and magnetism. Integrates conceptual understanding with extensive problem solving and laboratory experience.
PREREQ: PHYS207
COREQ: MATH242

PHYS 209  FUNDAMENTALS OF PHYSICS III  3
Calculus-based introduction to waves and quantum physics. Material on waves will include the damped and undamped harmonic oscillator, mechanical and electromagnetic waves, and the basics of Fourier series. The quantum physics material will include the Bohr model, diffraction and interference of electrons, photoelectric effect, blackbody radiation, Compton scattering, and the interpretation of the Schrodinger equation.
PREREQ: PHYS208

PHYS 313  PHYSICAL OPTICS  4
Introduction to optics at an intermediate level with emphasis on physical concepts and the properties of waves. Appropriate for physics as well as engineering students and others with a physical science background.
PREREQ: PHYS207
COREQ: MATH243

PHYS 366  INDEPENDENT STUDY  1-3

PHYS 419  CLASSICAL MECHANICS I  3
Intermediate course which emphasizes the fundamental principles of classical mechanics treated in detail and with mathematical rigor, particle mechanics, conservation laws, harmonic oscillation, motion under central force, rigid body dynamics, and moving coordinate systems.
COREQ: MATH302

PHYS 422  QUANTUM MECHANICS  3
Introduces quantum mechanical concepts by reviewing experiments which cannot be explained by classical physics. The Schrodinger equation is solved for simple cases such as free-particle motion, the simple harmonic oscillator and the hydrogen atom, with a basic treatment of angular momentum.
PREREQ: PHYS209, MATH302, and MATH349

PHYS 442  QUANTUM MECHANICS  0-0
Introduces quantum mechanical concepts by reviewing experiments which cannot be explained by classical physics. The Schrodinger equation is solved for simple cases such as free-particle motion, the simple harmonic oscillator, and the hydrogen atom, with a basic treatment of angular momentum. The material is fundamental to almost all physics developed in the 20th-century.
PREREQ: PHYS209, MATH302, and MATH349

PHYS 449  INTRODUCTION TO RESEARCH  1-6
Undergraduate research on an assigned problem carried out under the supervision of the staff

PHYS 466  INDEPENDENT STUDY  1-3

PHYS 600  PHYSICS RESEARCH TALKS  1 PF
Lectures by Physics faculty describing their current research to aid graduate students in selection of an area of thesis research.
PHYS 601 INTRODUCTION TO TEACHING PHYSICS AND ASTRONOMY 1 PF
Introduction to the methods and techniques of teaching and tutoring physics at a level appropriate for teaching assistants and tutors of undergraduate courses in Physics and Astronomy. Discussion and workshop formats will be used during the course.

PHYS 603 ELECTRICITY AND MAGNETISM I 3
First course in a two-part sequence with PHYS504 which provides a detailed treatment of electrodynamics and magnetostatics at the intermediate level. Topics include: Maxwell’s equations in the static limit, multiple expansions, capacitors and electrostatic energy, analytical and numerical solutions to boundary-value problems, dielectric and magnetic media, and steady currents.
PREREQ: PHYS208 or PHY202
COREQ: MATH503 or MATH601.

PHYS 604 ELECTRICITY AND MAGNETISM II 3
Second course in a two-part sequence with PHYS504 which provides a detailed treatment of electromagnetic theory at the intermediate level. Maxwell’s equations are developed and applied to electromagnetic waves in vacuum, material media, and wave guides, includes application to electromagnetic radiation, and special relativity.
PREREQ: PHYS208 or PHYS202, and PHYS603.

PHYS 607 METHODS OF MATHEMATICAL PHYSICS 3
Mathematical subjects commonly employed in physics with examples taken from physics. Linear vector spaces; Fourier series; orthogonal function expansions and eigenvalue problems.
PREREQ: PHYS562, MATH302 and MATH602.

PHYS 608 METHODS OF MATHEMATICAL PHYSICS 3
Mathematical subjects commonly employed in physics with examples taken from physics. Complex variables and asymptotic analysis.
PREREQ: PHYS562, MATH302 and MATH602.

PHYS 610 QUANTUM MECHANICS 3
PREREQ: PHYS522.

PHYS 616 KINETIC THEORY AND THERMODYNAMICS 3
Elements of the kinetic theory of gases, a treatment of thermodynamic principles and introduction to statistics.
PREREQ: MATH243 and PHYS509.

PHYS 620 CLASSICAL MECHANICS II 3
Topics covered are Lagrangian and Hamiltonian dynamics, dynamics of systems of particles, rigid bodies and fluids, oscillations of systems of coupled particles, oscillations and waves in continuous systems. Provides a classical introduction to techniques that are used extensively in quantum and statistical physics.
PREREQ: MATH302 and PHYS419.

PHYS 621 FUNDAMENTALS OF MODERN PHYSICS I 3
Comprehensive and critical discussion of the phenomenological bases of atomic, electronic, and nuclear physics and their assimilation into a wave mechanical view of the microscopic world.
PREREQ: MATH302.

PHYS 622 FUNDAMENTALS OF MODERN PHYSICS II 3
Application of wave mechanical and quantum statistical ideas to elucidate fine structures in atomic and molecular spectra, thermal and electrical properties of metals and semiconductors, superfluidity, nuclear reactions, and elementary particles.
PREREQ: PHYS509 and MATH302.

PHYS 624 INTRODUCTION TO SOLID STATE PHYSICS 3
X-ray diffraction, structure and properties of metals, insulators and semiconductors, and band theory of solids; includes electrical, optical, magnetic and thermal properties.
PREREQ: PHYS616 and PHYS502.

PHYS 631 ACOUSTICS 3
Vibrations of particles, strings and membranes; acoustic waves; radiation of sound; room acoustics; and acoustic measurements.
PREREQ: MATH302.

PHYS 632 ASTROPHYSICS 3
Survey of diverse astronomical objects and the physical principles used in modeling them. Emphasis on the observational basis and foundations of astrophysics. Stellar magnitudes, colors and spectra; the HR diagram; solar and stellar activity; binary stars; the phenomena of galactic and extragalactic astronomy.
PREREQ: MATH302 plus 14 hours of physics.

PHYS 633 INTRODUCTION TO STELLAR ASTROPHYSICS 3
Introduction to the physics of stellar interiors and atmospheres. The evolution of stars is explored by studying the changes in internal composition due to nuclear reactions. The physical processes underlying stellar spectra are investigated. Computer simulations of stars and their atmospheres may be used.
PREREQ: PHYS502 and MATH502.

PHYS 638 SELECTED TOPICS IN PHYSICS 3
Treatment of a specialized subject, taken from the following list: low-temperature physics, advanced experimental physics in research areas active in the department, cosmology, elementary particles, lasers and Fourier optics and plasma physics.
RESTRICTIONS: May be repeated for credit when topics vary.

PHYS 645 ELECTRONICS FOR SCIENTISTS 3
Fundamentals of analog and digital electronics, with emphasis on applications in science. Circuits analysis, operational amplifiers, filters, gates, flip-flops, counters, analog to digital and digital to analog converters.
PREREQ: PHYS208 or equivalent.

PHYS 646 INSTRUMENTATION FOR SCIENTISTS 3
Electronic measurements and instrumentation with emphasis on applications in science. Amplification, noise, low-level signal recovery, lock-in amplifiers, digital signal averaging, frequency and time measurements, transducers, bridges, interfacing to laboratory computers and automation of experiments.
PREREQ: PHYS208 and PHYS504 or equivalents.

PHYS 647 MODERN PHYSICS LABORATORY 3
Introduction to modern experimental methods and techniques. Consists of a variety of experiments for the study of the structural, transport, magnetic, optical and nuclear properties of matter. Covers basic experimental techniques involved in materials preparation, vacuum design and measurement, and temperature control and measurement.
PREREQ: PHYS509 and PHYS621.

PHYS 803 SOLID STATE PHYSICS 3
Crystal structure; mechanical, thermodynamic, electrical, optical and magnetic properties of solids; and imperfections in crystals.
PREREQ: PHYS524.

PHYS 804 SOLID STATE PHYSICS 3
Crystal structure; mechanical, thermodynamic, electrical, optical and magnetic properties of solids; and imperfections in crystals. Continuation of PHYS803.
PREREQ: PHYS524.

PHYS 809 ELECTROMAGNETIC THEORY 3
Review of statics; Maxwell’s equations, physical optics and wave guides.
PREREQ: PHYS504.

PHYS 810 ELECTROMAGNETIC THEORY 3
PREREQ: PHYS509 and PHYS509.

PHYS 811 QUANTUM MECHANICS 3
PREREQ: PHYS507 and PHYS501.
COREQ: PHYS508.

PHYS 812 QUANTUM MECHANICS 3
PREREQ: PHYS811.

PHYS 813 STATISTICAL MECHANICS AND THERMODYNAMICS 3
Review of equilibrium thermodynamics and probability theory. Kinetic theory including the Boltzmann equation and an introduction to fluid mechanics. Gibbsian ensemble theory in classical and quantum statistical mechanics, the ideal Bose and Fermi gases with elementary applications, the statistical aspects of light, electrical noise and irreversible thermodynamics.
PREREQ: PHYS516.

PHYS 815 THEORY OF RELATIVITY 2-3
Critique of the special theory introductory to the general theory; physical basis of the general theory; Einstein’s field equations; and problems of gravitational motion and radiation.
PREREQ: PHYS509.

PHYS 817 ADVANCED CLASSICAL DYNAMICS 3
Theoretical treatment of classical dynamics.
PHYT 608 \textbf{Musculoskeletal Evaluation and Treatment} 3
Indepth analysis of evaluation and treatment strategies of spinal and extremity joints, muscles and connective tissue. Emphasizes research on the physiological basis of traction, mobilization, and exercise.
PREREQ: PHYT 604, PHYT 622 and PHYT 604

PHYT 609 \textbf{Neurophysiological Evaluation and Treatment} 3
Indepth analysis of evaluation and treatment strategies of neurologically involved patients. Emphasizes research on the physiological basis of traction, mobilization and exercise.
PREREQ: All first-year MPT courses

PHYT 610 \textbf{Psychosocial Aspects of Disabilities} 2
Discusses the psychosocial characteristics of patient populations and therapists that impact on the rehabilitative process. Time management, death and dying, sexuality, love and hate and other topics are discussed.
PREREQ: All previous MPT courses

PHYT 611 \textbf{Clinical Management Practices} 1
Discusses concepts of administration and issues in the management of hospital clinics, private practice and consultative ventures.
PREREQ: All first-year MPT courses

PHYT 612 \textbf{Clinical Management Practicum} 3
Full or part-time practicum in a management setting. Advances skills in management.
PREREQ: All previous MPT courses

PHYT 613 \textbf{Advanced Orthopedics} 3
Discusses various schools of orthopedic intervention.
PREREQ: All previous MPT courses

PHYT 614 \textbf{Sports Physical Therapy} 3
Analyzes the various competencies required in the practice of sports physical therapy. Clinical skill acquired.
PREREQ: All previous MPT courses

PHYT 615 \textbf{Advanced Neurotherapeutics} 3
Discusses an integration of the various neurodevelopmental approaches to the treatment of the neurological patient.
PREREQ: All previous MPT courses

PHYT 616 \textbf{Pediatrics Seminar} 3 PF
Discusses selected problems encountered by the pediatric population. Studies the evaluation, treatment and research basis of these problems.

PHYT 617 \textbf{Patient Management II} 3
Continuation of PHYT 602. Teaches the theory and skills necessary for the physical therapy management of patients commonly seen in rehabilitation settings.
PREREQ: PHYT 602
RESTRICTIONS: Open to MPT Program students only

PHYT 618 \textbf{Life Span Development} 3
A study of human development and aging from birth through death. Emphasis on motor, sensory and cognitive functions and dysfunction.
PREREQ: All first-year MPT courses

PHYT 619 \textbf{Advanced Seminar} 2
Lectures pursue various topics in greater depth and develop advanced clinical skills. Examples include burn and wound care, hand therapy, geriatrics and ob/gyn. Individualized clinical experiences may be arranged.
PREREQ: All previous MPT courses

PHYT 620 \textbf{Educational Process in Community Health} 1
Focusses on the learning/teaching process for application to the teaching roles of the health professional.
RESTRICTIONS: Open to MPT Program students only

PHYT 621 \textbf{Practice Clinic} 1 PF
Student participation in faculty practice clinic treating referrals for physical therapy. All students participate in the clinic at least one semester.
RESTRICTIONS: Open to MPT Program students only

PHYT 622 \textbf{Clinical Gross Anatomy} 6
Emphasis on structural and functional aspects of regions of body such as musculoskeletal, integumentary, neurovascular and respiratory. Emphasis on the clinical significant of anatomic structure.
RESTRICTIONS: Open to first-year physical therapy graduate students only

PHYT 623 \textbf{Clinical Neurosciences} 4
A study of the structure and function of the human nervous system with major emphasis on the cause-effect relationships between lesions and their symptoms. Emphasis on the neural mechanisms controlling movement.
PREREQ: PHYT 622
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLSC 100</td>
<td>PLANTS AND HUMAN CULTURE</td>
<td>3</td>
<td>PLSC 101</td>
</tr>
<tr>
<td>PLSC 101</td>
<td>BOTANY I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PLSC 105</td>
<td>INTRODUCTORY FORESTRY</td>
<td>3</td>
<td>PLSC 101, PLSC 204</td>
</tr>
<tr>
<td>PLSC 133</td>
<td>ORNAMENTAL HORTICULTURE</td>
<td>3</td>
<td>PLSC 201</td>
</tr>
<tr>
<td>PLSC 151</td>
<td>INTRODUCTION TO CROP SCIENCE</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 154</td>
<td>TOPICS IN PRODUCTION AND MANAGEMENT OF ORNAMENT PLANTS</td>
<td>1-6</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 201</td>
<td>BOTANY II</td>
<td>4</td>
<td>PLSC 101, PLSC 204</td>
</tr>
<tr>
<td>PLSC 204</td>
<td>INTRODUCTION TO SOIL SCIENCE</td>
<td>4</td>
<td>PLSC 101, PLSC 204</td>
</tr>
<tr>
<td>PLSC 211</td>
<td>HERBACEOUS LANDSCAPE PLANTS</td>
<td>3</td>
<td>PLSC 101, PLSC 204</td>
</tr>
<tr>
<td>PLSC 212</td>
<td>WOODY LANDSCAPE PLANTS</td>
<td>4</td>
<td>PLSC 101, PLSC 204</td>
</tr>
<tr>
<td>PLSC 213</td>
<td>TURF ESTABLISHMENT AND MAINTENANCE</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 270</td>
<td>BIOTECH SCIENCE AND SOCIOECONOMIC ISSUES</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 300</td>
<td>PRINCIPLES OF ANIMAL AND PLANT GENETICS</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 302</td>
<td>VEGETABLE SCIENCE</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 303</td>
<td>INTRODUCTORY PLANT PATHOLOGY</td>
<td>4</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 305</td>
<td>ENVIRONMENTAL SOIL MANAGEMENT</td>
<td>4</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 310</td>
<td>ANIMAL AND PLANT GENETICS LABORATORY</td>
<td>1</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 331</td>
<td>LANDSCAPE CONSTRUCTION</td>
<td>4</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 332</td>
<td>BASIC LANDSCAPE DESIGN</td>
<td>4</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 334</td>
<td>ORNAMENTAL HORTICULTURE INTERNSHIP</td>
<td>1-6</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 366</td>
<td>INDEPENDENT STUDY</td>
<td>1-6</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 401</td>
<td>AGRONOMIC CROP SCIENCE</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 402</td>
<td>PLANT TAXONOMY</td>
<td>4</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 403</td>
<td>NURSERY AND GARDEN CENTER MANAGEMENT</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 404</td>
<td>INTRODUCTION TO PLANT PHYSIOLOGY</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 405</td>
<td>DIAGNOSTIC PLANT PATHOLOGY</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 406</td>
<td>PRINCIPLES OF PLANT DISEASE CONTROL</td>
<td>3</td>
<td>PLSC 201, PLSC 204</td>
</tr>
<tr>
<td>PLSC 407</td>
<td>PLANT CELL AND TISSUE CULTURE</td>
<td>4</td>
<td>PLSC 201, PLSC 204</td>
</tr>
</tbody>
</table>

UNIVERSITY OF DELAWARE 1995-96 CATALOG / PAGE 335
PLSC 417 GREENHOUSE MANAGEMENT 4
Greenhouse structures, environmental control, cultural techniques and general management practices in greenhouse operations. Laboratory exercises supplement lecture material
PREREQ: PLSC201 and PLSC204

PLSC 420 PLANT PHYSIOLOGY LABORATORY 2
The extraction from higher plants of enzymes and other macromolecules, and assay by chemical tests. Pigment extraction, organelle separation, ion uptake, protein manipulation using centrifuge, spectrophotometer, chromatography and electrophoresis
PREREQ: PLSC410
COREQ: PLSC410

PLSC 422 PLANT PROPAGATION 3
Practical and physiological aspects of the propagation of economic plants including both sexual and asexual methods
PREREQ: PLSC201

PLSC 429 INTRODUCTORY MYCOLOGY 4
A survey of the structure, classification and possible relationship of major groups of fungi with stress on representative organisms and a working knowledge of terminology. Practical laboratory experience in the culture and identification of fungi.
RESTRICTIONS: Requires permission of instructor

PLSC 431 LANDSCAPE CONSTRUCTION II 3
The application of the principles covered in PLSC331 to the solution of landscape construction, site drainage and grading problems, and construction documentation
PREREQ: PLSC331

PLSC 450 LANDSCAPE DESIGN II 3
Comprehensive solution of landscape problems. Field application of principles of construction and design
PREREQ: PLSC332

PLSC 454 MANAGEMENT OF LANDSCAPE ENTERPRISES 4
How to establish and finance a landscape management business; how to hire, supervise, evaluate, discipline and terminate personnel; how to manage time, select equipment, construct bids and contracts and maintain landscaped areas
PREREQ: PLSC211 and PLSC212

PLSC 465 SEMINAR 1
Oral and written reports in one of the fields of plant science

PLSC 466 INDEPENDENT STUDY 1-6

PLSC 601 AGRONOMIC CROP SCIENCE 3
Production and management of the major grain and forage crops, with emphasis on diagnosis of production problems and decision making
PREREQ: PLSC151

PLSC 602 PHYSIOLOGICAL PLANT PRODUCTIVITY 3
PREREQ: PLSC410

PLSC 603 SOIL PHYSICS 3
See AGEC603 for course description

PLSC 605 PLANT BREEDING 3
Improvement of crops through the application of genetic principles to breeding methods
PREREQ: ANSC300 or PLSC300 or introductory genetics course
RESTRICTIONS: Includes at least two mandatory Saturday field trips

PLSC 606 SOIL GENESIS AND CLASSIFICATION 4
Soil forming factors and processes; chemical, physical and mineralogical parameters useful in characterizing soil; geologic and geomorphic settings in Delaware and their influence on soil formation and classification; soil taxonomy and soil limitations and interpretations
PREREQ: PLSC204

PLSC 607 PLANT AND SOIL WATER RELATIONS 3
Environmental aspects, measurement and control of water flux and storage in the soil-plant-atmosphere continuum; and development and significance of plant water deficits
PREREQ: PLSC305 and PLSC410

PLSC 608 SOIL CHEMISTRY 3
Aspects of soil acidity and of soil colloids. Reactions of soil nitrogen, phosphorus, potassium and micronutrients. Electrochemistry of soil colloids including double layer theory, zero point of charge theory and ion exchange reactions. Kinetics and thermodynamics of exchange in pure and mixed soil systems
PREREQ: CHEM102 or CHEM104 and PLSC204

PLSC 609 PLANT MICROTECHNIQUE 4
Introduction to techniques useful in microscopically examining diseased and nondiseased plant structures. Emphasis on fixation, embedding, sectioning, staining and interpretation of prepared materials

PLSC 611 DIAGNOSTIC PLANT PATHOLOGY 3
Consideration of major pathogenic causes of economic losses of plants. Emphasis on principles of etiology, epiphytology, symptoms and control
PREREQ: PLSC303

PLSC 613 PRINCIPLES OF PLANT DISEASE CONTROL 3
Exclusion, eradication, resistance and protection with emphasis on fungicides, bactericides and nematocides and their use
PREREQ: PLSC303

PLSC 615 VASCULAR PLANT ANATOMY 3
A developmental and comparative study of the cells, tissues and organs of vascular plants. Readings in the current anatomical literature

PLSC 616 PLANT ViroLOGY 4
The epidemiology, detection, identification and control of plant viruses and virus-like agents
PREREQ: PLSC303

PLSC 619 SOIL MICROBIOLOGY 4
Characterization of microorganisms and microbial habitats in soil environments. Processes and interactions involving soil microorganisms with respect to agricultural productivity and environmental quality. Introduction to laboratory techniques for the observation, enumeration and isolation of soil microorganisms, and measurement of associated activities

PLSC 620 PLANT PHYSIOLOGY LABORATORY 2
The extraction from higher plants of enzymes and other macromolecules, and assay by chemical tests. Pigment extraction, organelle separation, ion uptake, protein manipulation using centrifuge, spectrophotometer, chromatography and electrophoresis
PREREQ: PLSC410
COREQ: PLSC410

PLSC 629 INTRODUCTORY MYCOLOGY 4
Survey of the structure, classification and possible relationship of major groups of fungi with emphasis on representative organisms and a working knowledge of terminology. Practical laboratory experience in the culture and identification of fungi.
RESTRICTIONS: Requires permission of instructor

PLSC 650 CLAY MINERALOGY 3
See MAST650 for course description

PLSC 660 PESTICIDES IN THE ENVIRONMENT 3
Role of pesticides in agriculture and public health. Classification, and environmental fate in soil, water and atmosphere. Management practices, non-target effect, detoxification of pesticide waste, risk assessment, regulation, impact of pesticide alternatives
PREREQ: CHEM102

PLSC 800 CURRENT TOPICS IN PLANT SCIENCE 1-3
Discussion of selected topics and recent literature in plant science

PLSC 801 PLANT SCIENCE TECHNIQUES 3
Theories, principles and applications of laboratory techniques used in planning and conducting plant science research
RESTRICTIONS: Requires permission of instructor

PLSC 802 PROFESSIONAL DEVELOPMENT 1
Professional development including grantsmanship, manuscript writing and reviewing, resume preparation, job interviewing and presentation of research at professional meetings

PLSC 803 ADVANCED SOIL FERTILITY AND PLANT NUTRITION 3
Analysis of chemical and biochemical factors involved in nutrient availability and transport in the soil. Evaluation of current theories of ion uptake, translocation and assimilation
PREREQ: PLSC305 and PLSC410

PLSC 804 PLANT MOLECULAR BIOLOGY 3
Fundamental and applied aspects of plant molecular biology, including organization of plant genes, genomes, gene expression, gene transfer and genetic engineering
PREREQ: ANSC670 or BISC653

PLSC 810 PLANT PHYSICAL CHEMISTRY 3
Basic physical chemistry principles applied to heterogeneous systems, including ionic distribution of the diffuse double layer, thermodynamics of cation exchange, theories of cation adsorption by soil colloids, anion exclusion, miscible displacement theory and aspects of equilibrium and kinetics
PREREQ: PLSC608

PLSC 814 ADVANCES IN PLANT TISSUE CULTURE 3
A review of current tissue culture literature supplemented with a historical perspective
RESTRICTIONS: Requires consent of instructor
**POLITICAL SCIENCE**

**PLSC 819** Ecological Soil Microbiology 3
Ecological principles of microbial activities and processes in soil-plant systems; dynamics of soil and rhizosphere populations; symbiotic interactions with plants, and selected topics in environmental quality
PREREQ: PLSC619

**PLSC 823** Seminar: Principles of Plant Infection 2
The basic factors governing the development of plant infection by phytopathogenic organisms: invasion, parasitism, colonization, dissemination, epidemiology and parasitic relationships
RESTRICTIONS: Requires permission of instructor

**PLSC 831** Taxonomy of Ornamental Plants 3
Identification, considering the plant families that include the majority of the ornamental plants grown in botanic gardens, arboretums and horticultural institutions

**PLSC 832** Botanic Garden Management 1-10
A lecture and laboratory course conducted at Longwood Gardens to familiarize Longwood Fellows with the operations and purposes of all areas of Longwood Gardens and other botanic gardens
RESTRICTIONS: May be repeated for up to ten credits

**PLSC 833** Seminar: Soil Science 1
Current topics in soil science will be discussed from the literature

**PLSC 834** Current Topics in Agronomy 1
Seminars to review current agronomic literature

**PLSC 835** Environmental Soil Physics 4
Fundamentals of water, heat and solute transport in soil. Reactions and movement of organic/inorganic compounds in the soil environment. Application of management models to solute transport
PREREQ: PLSC204 and MATH221

**PLSC 864** Seminar Planning and Development 1 PF
Planning, developing and hosting a major seminar series: topic and speaker selection, format and schedule development, marketing, local arrangements and hosting

**PLSC 865** Seminar 1

**PLSC 868** Research 1-9

**PLSC 869** Master’s Thesis 1-6

**PLSC 874** Topics in Molecular Biology 1
Provides a forum for the discussion of current topics in biological science, with critical reading of relevant primary literature
RESTRICTIONS: Requires permission of instructor

**PLSC 964** Pre-Candidacy Study 3-12 PF
Research and readings in preparation of dissertation topic, and/or qualifying examination for doctoral students before admission to candidacy but after completion of all required course work
RESTRICTIONS: Not open to students who have been admitted to candidacy

**PLSC 969** Doctoral Dissertation 1-12 PF

---

**PORTUGUESE**

**PORT 105** Brazilian Portuguese I - Elementary 4
Introduction to Brazilian Portuguese language and development of speaking, listening, reading and writing skills through the use of basic texts. Language laboratory as needed

**PORT 106** Brazilian Portuguese II - Elementary/Intermediate 4
Completion of basic Brazilian Portuguese. Increasing mastery of the basic skills of speaking, listening, reading and writing
PREREQ: PORT105

**PORT 107** Brazilian Portuguese III - Intermediate 4
Review of grammar, continued practice in speaking and writing, and reading texts of average difficulty
PREREQ: PORT106
RESTRICTIONS: Two or three years of high school Brazilian Portuguese acceptable in lieu of Prerequisite

**POLITICAL SCIENCE**

**POSC 105** The American Political System 3
Constitutional principles, structure and functions of the political process in the United States

---

**POSC 106** Introduction to Political Science: Issues 3
Selected problems of politics drawn from comparative and international politics, American government and political theory
RESTRICTIONS: Cannot be substituted for POSC105

**POSC 220** Introduction to Public Policy 3
Emphasis on what government does, with a focus on substantive policy areas as well as the mechanisms of policy making. Case studies of policy areas (e.g., health policy, environmental policy, social welfare policy, etc.) used to illustrate processes of agenda setting, decision making and policy implementation

**POSC 240** Introduction to International Relations 3
The development of international systems, their structure and political economic dynamics. Fundamental analytical concepts and approaches

**POSC 260** Humanities Colloquium 3
See ASRC260 for course description

**POSC 270** Comparative Politics 3
Introduction to comparison of politics "within nations". Covers Europe, Africa, Asia and Latin America

**POSC 285** Currents in Political Theory 3
Basic introduction to political philosophy, organized not around particular historical periods or specific philosophers, but around some of the most important, enduring questions of political theory: What is the nature of the state? What are the obligations and responsibilities of citizens?

**POSC 301** State and Local Government 3
American federalism with emphasis on government and politics, with special attention to Delaware

**POSC 302** Research Methods 3
Design, measurement of political phenomena, collection and analysis of data and use of computer in political research

**POSC 303** The Administrative Process 3
Public administration treated as process of organization, methods of management and decision making common to all levels of bureaucracy

**POSC 306** Economic Theory of Politics 3
See ECON306 for course description

**POSC 310** European Governments 3
Structure and process of British, French, West German and Russian governments

**POSC 311** Politics of Developing Nations 3
Forces determining public policy among the emerging nations. Cross-national comparative analysis

**POSC 312** East Asian Political Systems 3
An introductory survey to study the structure and process of political power in major countries in Asia. Special emphasis on China and Japan

**POSC 313** American Foreign Policy 3
The theory, policies and administration of U.S. foreign policy

**POSC 314** Making United States Foreign Policy 3
Discusses the roles of the executive foreign, defense and intelligence establishments in making American foreign policy. Also treats the impact of public opinion, interest groups and Congress

**POSC 320** Parties and Interest Groups 3
Organization and behavior of political parties and interest groups, including structure, leadership, recruitment and decision making

**POSC 321** Minority Group Politics 3
Examines the history, strategic positions and political tactics of Blacks, Chicanos (Hispanic Americans), Native Americans and women in the American political system. Where appropriate, the politics of ethnic and racial minorities will be compared/contrasted to the politics of women

**POSC 322** Black Politics 3
Provides insight and understanding about the Black experience in the American political system. Basic questions addressed are: Is Black politics unique and, therefore, different from American politics? What are the goals and aspirations of Black America and are they universally shared? May be cross-listed with BAMS322

**POSC 323** Introduction to Women and Politics 3
Political-legal status of American women since the Revolution, and their participation in the political process. Women's present political legal status as illustrated through current issues such as reproductive rights, pay equity and the feminization of poverty. May be cross-listed with WOMS323

**POSC 324** Political Behavior 3
Public opinion, voting and elections, the mass media, ideology, political socialization and violence. The relationship between public opinion and public policy
POLITICAL SCIENCE

POSC 333 COMMUNISM, FASCISM AND DEMOCRACY
Ideology and environmental backgrounds. Understanding of the operating nature and causes of these aspects of contemporary Western political life

POSC 334 LIBERALISM AND CONSERVATISM
Introduces capitalism, socialism, liberalism, conservatism and democratic forms of Marxism. Accents problems of economic growth, equality, freedom and self-realization, bureaucracy, representation, justice, brotherhood, the profit motive, social cohesion, nationalism and the international order

POSC 339 BRITAIN AND EUROPE
Examines Britain’s role in an integrated Europe, with focus on contemporary problems and prospects of closer British ties to the European Union and related bodies

POSC 340 POLITICS AND THE MEDIA
Political roles of the media in socialization, political agenda setting, the electoral process and political crises. Emphasis on media-political system interaction and its import for a democratic society

POSC 341 ENVIRONMENT OF MULTINATIONAL CORPORATIONS
See BUAD 341 for course description

POSC 350 POLITICS AND THE ENVIRONMENT
The political context of environmental issues; air and water pollution, population control, and conservation

POSC 355 URBAN POLITICS
Decision-making processes and the exercise of political power in urban communities

POSC 360 HUMANITIES COLLOQUIUM
See ASRC 360 for course description

POSC 365 MODEL UNITED NATIONS
Intensive preparation for effective participation in the National Model United Nations held in New York City each April

RESTRICTIONS: May be repeated once for credit. Open only to selected delegates to the National Model United Nations

POSC 366 INDEPENDENT STUDY
1-6

POSC 372 EAST CENTRAL EUROPEAN POLITICS
Survey of East Central European political systems (Poland, Hungary, Czechia and Slovakia, Germany, Romania, former Yugoslavia, Bulgaria and Albania) after World War II. The so-called new federal states in Germany (w/DDR) will be emphasized

POSC 377 ARAB-ISRAELI POLITICS
Development of the Arab-Israeli conflict analyzed from the Dreyfus Affair and the Balfour Declaration to current events

POSC 380 INTRODUCTION TO LAW
Broader overview of the nature, functions and limits of law. Emphasis on law as the political instrument used to regulate, control and promote behavior and deal with social problems

POSC 387 AMERICAN POLITICAL THOUGHT
Overview of American political thought. Focuses on critical formative periods in American politics, such as the Founding, Civil War and Industrial Revolution, with readings selected from the writings and speeches of key American statesmen

POSC 390 HONORS COLLOQUIUM
See ASRC 390 for description

POSC 400 PRACTICUM IN TEACHING POLITICAL SCIENCE
Practicum in Teaching Political Science. Available to outstanding Senior political science majors interested in obtaining teaching experience at the college level. Provides opportunity to lead discussion sections of students in lower division courses

RESTRICTIONS: Requires permission of instructor

POSC 402 CIVIL LIBERTIES
Individual constitutional rights of expression, religion, "fundamental rights" (such as privacy and travel) and equal protection as developed by the U.S. Supreme Court. Role of the Supreme Court in American government

POSC 404 THE JUDICIAL PROCESS
Structure, process and personnel of American courts; factors influencing decisions and judicial policy making

POSC 405 CONSTITUTIONAL LAW OF THE UNITED STATES
Constitutional principles regulating organization and function of federal government. United States Supreme Court decisions placed in a socio-political context

POSC 406 CIVIL LIBERTIES
Constitutional rights of the accused in the U.S. judicial system, especially as developed through Supreme Court cases

POSC 407 AMERICAN PRESIDENCY
Modern American presidency with emphasis on presidential recruitment, organization and staffing. The nature and exercise of presidential power in the decision-making process

POSC 408 INTERNATIONAL ORGANIZATION
Analysis of the organization of the international system, its structure, operating principles, formal and informal components

POSC 409 CONTEMPORARY PROBLEMS OF WORLD POLITICS
Critical areas of international politics. Topics vary by instructor

POSC 411 POLITICS AND POVERTY
Relationship of policy making and social conditions in the United States with regard to capacity of government to cope with problems arising from overpopulation and socioeconomic differences

POSC 412 FOREIGN POLICY OF THE POST-SOVET UNION
Principles, foreign policies and administration of the former Soviet government and its most important successor states

POSC 413 PROBLEMS IN AMERICAN GOVERNMENT
Contemporary problems in American government and politics. May be cross-listed with WOMS 413

POSC 414 PROBLEMS IN AMERICAN FOREIGN POLICY
Contemporary problems in American foreign policy and policy making

POSC 415 FORCE AND WORLD POLITICS
Interrelationship of military and foreign policy; military strategies, arms control and disarmament; and the American experience

POSC 416 TRANSNATIONAL RELATIONS AND WORLD POLITICS
Transnational political and economic phenomena; emphasis on political behavior of multinational corporations, international financial system; implications for world order

POSC 420 INTRODUCTION TO POLITICAL ECONOMY
Recent political and economic history, contemporary economic policy disputes and an analysis of how the Democratic-Republican balance of power affects, and is affected by, changing economic conditions and the results of policies put into effect

POSC 423 CONGRESS AND PUBLIC POLICY
Democratic functions of a modern legislature; legislative structures and processes; coalitions and cleavages; parties, ideological factions and interest groups; the Federal budget, national priorities and Congressional intervention in the economy; central policy issues before Congress; Congressional oversight of the bureaucracy; Congress and the Presidency; and election of the Congress

POSC 424 ENERGY POLICY AND ADMINISTRATION
World and U.S. energy policies with emphasis on nuclear power, solar energy and fossil fuels. Analyzes progress and design of U.S. science and technology policy in energy domain

POSC 426 LATIN AMERICAN POLITICAL SYSTEMS
Impact of social and economic change on the political processes

POSC 427 POLITICS IN CHINA
An in-depth study of who governs China and the relations among the major forces: the party, the military and the bureaucracy

POSC 428 POLITICS IN JAPAN
An in-depth study of who governs Japan and how these relations have evolved since the end of World War II

POSC 431 LATIN AMERICAN POLITICS COUNTRIES
Contemporary political events in three Latin American nations. Comparisons of the actions and influence of the military, church, bureaucracies, political parties and guerrilla groups in three different Latin American settings: modern, transitional and traditional

POSC 432 POLITICAL SYSTEM OF THE POST-SOVET UNION
Structure and process of the political system of the USSR and its most important successor states (Russia, Ukraine, Byelarus, Kazakhstan and others)

POSC 433 AFRICAN POLITICS
Overview of politics and society in sub-saharan Africa including: colonialism, the rise of nationalism, decolonization, single-party and military rule, the role of social movements and religious, class, gender and ethnic identities and the move toward economic and political liberalization

POSC 434 POLITICAL THOUGHT
From Plato to Machiavelli

POSC 435 POLITICAL THOUGHT
From Machiavelli to present

POSC 436 POLITICAL THEORY
Class, civil rights, feminism, revolution and other political issues examined through novels, film and other literary works. May be cross-listed with WOMS 436

POSC 437 DEMOCRATIC THEORY
Definition and operation of democracy in contemporary society; elite mass public interaction, representation, bureaucratic power, mass media and economic power as constraints on democratic theory. Emphasis on the American experience
POSC 439 PROBLEMS IN AFRICAN POLITICS 3
Examination of selected topics in contemporary African politics. Will focus indepth on aspects of politics and society in a specific region of Africa or will investigate in greater detail issues confronting Africa today such as economic structural adjustment, democratization and state-society relations.

POSC 441 PROBLEMS OF WESTERN EUROPEAN POLITICS BY COUNTRY 3
Intensive examination of European politics from the perspective of a specific country, e.g., Spain, England and France.

RESTRICTIONS: Offered only in conjunction with travel abroad programs.

POSC 442 PROBLEMS OF WESTERN EUROPEAN POLITICS 3
Examination of current political trends in Western European politics, including changes in party systems and problems of European integration.

POSC 443 CHINA AND THE WORLD 3
An objective examination of China's relations with the major countries in the world. Special attention paid to China's policy towards the superpowers and its role in the "Third World."

POSC 444 SEMINAR IN WORLD POLITICS 3
Survey of current world problems including seminar sessions with visiting scholars. Content varies from year to year.

POSC 445 HUMAN RIGHTS AND WORLD POLITICS 3
Alternative theories of human rights examined in cross-cultural and international contexts. International documents, contemporary cases (e.g., South Africa) and U.S. foreign policies also examined and evaluated.

POSC 448 THEORIES OF INTERNATIONAL RELATIONS 3
Surveys the theoretical debates regarding how we can conceive of and understand world politics, as well as how we can evaluate contending perspectives. Considers schools of thought as ancient, idealist, realist, behavioralist, interdependency, radical, neo-realist and post-structuralist perspectives.

POSC 450 PROBLEMS OF LATIN AMERICAN POLITICS 3
Current political issues in selected Latin American countries.

POSC 452 PROBLEMS IN URBAN POLITICS 3
Contemporary problems and political relationships in urban communities.

POSC 453 PUBLIC PERSONNEL ADMINISTRATION 3
Public personnel systems, including public appointees, the general civil service, professional career systems and the collective bargaining system. Emphasis on recruitment, promotion, evaluation, management, patronage, affirmative action and collective bargaining.

POSC 454 PUBLIC ADMINISTRATIVE AND ORGANIZATIONAL THEORY 3
Major administrative and organizational theories as applied to public organizations. Special attention to classical, political and pragmatic theories. Topics include administrative change and decision making.

POSC 455 PUBLIC BUDGETING AND FINANCIAL MANAGEMENT 3
Examines the role of budgeting in government policy formation, resource allocation, communication and control. Reviews the relative strength of various public budget systems. Topics also include a survey of techniques employed in the management of government financial operations.

POSC 456 DISASTER AND POLITICS 3
U.S. emergency management and disaster policy examined through books, articles and video tapes dealing with governmental preparedness for, and response to, natural and human-caused disasters and emergency incidents.

POSC 457 COMMUNITY SERVICE SEMINAR 3
Preparation for students to engage in community service fieldwork experiences. Includes consideration of issues associated with public and private service delivery organizations as well as needs of the communities served.

POSC 458 COMMUNITY SERVICE FIELDWORK 3
Allows students to earn academic credit for fieldwork experiences in public or private community service agencies. Students will share and analyze experiences in a seminar setting with academic requirements.

POSC 460 HUMANITIES COLLOQUIUM 3
See ASRC460 for course description.

POSC 463 INTERNATIONAL INSTITUTIONS 3
A consideration of the growth, development and functions of various major international organizations. Provides preparation for effective participation in Model United Nations or similar international organization simulations which may run in conjunction with course.

RESTRICTIONS: Model UN Program may be repeated once for credit.

POSC 464 FIELDWORK IN POLITICAL SCIENCE 1-6
Internship or fieldwork program under the direction of a faculty member, including preparation of a substantial bibliography and/or major research paper. PREREQ: POSC105

RESTRICTIONS: Requires permission of instructor.

POSC 465 MODEL OAS 3
Theoretical and practical preparation for participation in the Model Organization of American States conference held in Washington, D.C. each year. Participation as delegates to the week-long simulation. May be cross-listed with EDST465.

POSC 466 INDEPENDENT STUDY 1-6

POSC 468 UNDERGRADUATE RESEARCH 1-6
Research conducted under the direction of or in conjunction with a faculty member. May result in a major research paper or be incorporated into a faculty project.

POSC 470 SENIOR HONORS SEMINAR 3

POSC 477 POLITICS OF THE ARAB WORLD 3
Arab politics surveyed from Morocco to Iraq.

POSC 604 INTERNATIONAL LAW 3
See MAST673 for course description.

POSC 612 FOREIGN POLICY OF THE POST-SOVIET UNION 3
Principles, foreign policies and administration of the former Soviet government and its most important successor states.

POSC 615 FORCE AND WORLD POLITICS 3
Interrelationship of military and foreign policy; military strategies, arms control and disarmament; and the American experience.

POSC 616 TRANSLATIONAL RELATIONS AND WORLD POLITICS 3
Transnational political and economic phenomena; emphasis on political behavior of multinational corporations, international financial system, and implications for world order.

POSC 624 ENERGY POLICY AND ADMINISTRATION 3
World and U.S. energy policies with emphasis on nuclear power, solar energy and fossil fuels. Analyzes progress and design of U.S. science and technology policy in energy domain. May be cross-listed with URAF625.

POSC 627 LATIN AMERICAN POLITICAL SYSTEMS 3
Impact of social and economic change on the political processes.

POSC 632 POLITICAL SYSTEM OF THE POST-SOVIET UNION 3
Structure and process of the political system of the USSR and its most important successor states (Russia, Ukraine, Byelorussia, Kazakhstan and others).

POSC 633 AFRICAN POLITICAL SYSTEMS 3
Structure, process and policies of the governments of Africa, south and north of the Sahara.

POSC 634 POLITICAL THOUGHT I 3
An in-depth study of major political philosophers of the Western tradition from Plato to Machiavelli.

POSC 635 POLITICAL THOUGHT II 3
An in-depth study of major political philosophers of the Western tradition from Machiavelli to the present.

POSC 640 INTERNATIONAL DEVELOPMENT POLICY AND ADMINISTRATION 3
Poverty and inequality in developing countries and the economic development policies employed to alleviate them. Emphasis on policy reform, trade strategies, sustainable development, and the role of the state. The approaches used by the World Bank, the IMF and USAID. May be cross-listed with URAF640.

POSC 642 PROBLEMS OF WESTERN EUROPEAN POLITICS 3
Examination of current political trends in Western European politics, including changes in party systems and problems of European integration.

POSC 643 FOREIGN POLICY OF COMMUNIST CHINA 3
Theory, policies and administration of Communist Chinese foreign policy.

POSC 650 PROBLEMS OF LATIN AMERICAN POLITICS 3
Current political issues in selected Latin American countries.

POSC 651 COMMUNIST POLITICAL THOUGHT 3
Major theoretical ideas of Marxism-Leninism, Marx, Engels, Lenin, Stalin, Mao Tse-Tung and Castro examined for their contributions to Communist thought.

POSC 652 TOPICS IN POLITICAL THEORY 3
Focuses on selected topics in political theory, including Marxism, Liberalism and Contemporary Political Theory.

POSC 659 TOPICS IN PUBLIC ADMINISTRATION 3
See URAF659 for course description.

POSC 677 POLITICS OF THE ARAB WORLD 3
Arab politics surveyed from Morocco to Iraq.
POLITICAL SCIENCE

POSC 678 ADMIRALTY AND MARITIME LAW 3
See MAST678 for course description

POSC 679 SHIPPING AND PORT MANAGEMENT 3
See MAST679 for course description

POSC 681 METROPOLITAN INFRASTRUCTURE AND TRANSPORTATION 3
See URAF681 for course description

POSC 683 REGIONAL POLICY ANALYSIS 3
See URAF683 for course description

POSC 685 PERSONNEL AND HUMAN RESOURCE ISSUES: CURRENT TOPICS 3
See URAF685 for course description

POSC 688 TOPICS IN STATE AND LOCAL MANAGEMENT 3
See URAF688 for course description

POSC 800 SEMINAR: PHILOSOPHY OF POLITICAL INQUIRY 3
Introduces basic topics of political inquiry. Surveys philosophies of science, epistemolo-
gies, and seeks to address questions such as: What is theory? How are scientific theo-
ries of politics constructed and evaluated? What constitutes a valid description or
explanation? Conceptual and normative issues are also explored.

POSC 801 RESEARCH DESIGN FOR POLITICAL AND POLICY SCIENCES 3
Seminar helps students understand and evaluate alternative research strategies. Each
participant has an opportunity to write a research proposal that is then critiqued by mem-
bers of the class and the instructor. A wide variety of research designs is covered.

POSC 803 SEMINAR: PUBLIC ADMINISTRATION 3
Focuses on selected aspects of organizational psychology and adminis-
trative behavior related to motivation and incentives, group dynamics and lead-
ership and control. May be crosslisted with URAF835.

POSC 805 SEMINAR: PUBLIC LAW 3
Seminar on the role of courts and constitutional law within the political system. Research
der paper will be expected.

RESTRICTIONS: Graduate students only.

POSC 808 AMERICAN POLITICAL INSTITUTIONS 3
Explores major themes, viewpoints, issues and topics pertaining to the American political
system. Themes include stability, change, conflict, American exceptionalism, American
political thought, alternative perspectives on democracy, analysis of political parties,
interest groups, Congress, the presidency and the courts.

POSC 810 SEMINAR: COMPARATIVE GOVERNMENT 3
Focuses on the evolution of the study of politics within modern states, the principal theo-
retical approaches in studying politics cross-nationally and major scholarly controversies.
Students review a broad spectrum of comparative research and writing.

POSC 811 TOPICS IN COMPARATIVE GOVERNMENT 3
Focuses on selected topics in Comparative Government and Politics.

POSC 812 SEMINAR: TOPICS IN AMERICAN POLITICS 3
Focuses on selected topics in American politics, including urban politics, judicial politics
and political parties.

POSC 813 SEMINAR: AMERICAN FOREIGN POLICY 3
Overview of contemporary American foreign policy and policy making, as well as the ana-
lytical, conceptual and methodological problems associated with foreign policy analysis.

POSC 815 PUBLIC MANAGEMENT STATISTICS 3
See URAF815 for course description

POSC 816 ADVANCED SOCIAL STATISTICS 3
Provides advanced training in applied social statistics. Topics include analysis of vari-
ance, regression analysis, analysis of covariance, multi-dimensional cross-classifications
and future analysis. Lectures supplemented by laboratory work involving computer statis-
tical packages and simulations. May be crosslisted with URAF816.

POSC 817 FINANCING ALTERNATIVES IN THE PUBLIC SECTOR 3
See URAF817 for course description

POSC 818 ENVIRONMENTAL POLICY AND ADMINISTRATION 3
U.S. environmental policy and administration of air and water pollution control pro-
grams. Secondary consideration given to population control, energy and natural
resource development and conservation, as well as intergovernmental relations in envi-
nmental program implementation. May be crosslisted with MAST871 and/or
URAF818.

POSC 819 MANAGEMENT DECISION MAKING 3
See URAF819 for course description

POSC 821 PROSEMINAR: TECHNOLOGY, ENVIRONMENT AND SOCIETY 3
See URAF821 for course description

POSC 825 COMPARATIVE PUBLIC ADMINISTRATION 3
A reading and discussion seminar concentrating on the development of administration
and bureaucratic elites in developed and developing countries. Attention given to
French, British and German bureaucracies and the problems of ethics, decentralization,
planning, political influences and external controls. May be crosslisted with URAF825.

POSC 829 ADVANCED PUBLIC FINANCE 3

POSC 830 SEMINAR: INTERNATIONAL RELATIONS 3
Surveys broad range of international relations theory including realism, neo-realism,
interdependence, uni-level analysis, regime theory, world system theories, post-structural-
ism, feminism and normative theory. Epistemological and conceptual problems associat-
ed with international relations research are explored.

POSC 831 READING SEMINAR: INTERNATIONAL RELATIONS 3
Topics and problems in international relations. Content varies and ranges across the field
of international relations including historical, theoretical, global, regional, legal, organi-
zational, normative and contemporary policy questions.

POSC 833 SEMINAR: NORMATIVE POLITICAL THEORY 3
Department's core seminar in political philosophy which attempts to acquaint the student
with major themes in political thought from "Plato to the present." Within that framework
there is normally emphasis placed on the thought of one or two individuals.

POSC 835 ORGANIZATIONAL THEORY AND ADMINISTRATION 3
Examines the major theories of organization and considers their implications for strate-
gies of administration. Focuses on several aspects of organizational psychology and
administrative behavior related to motivation and incentives, group dynamics and lead-
ership and control. May be crosslisted with URAF835.

POSC 837 PUBLIC PERSONNEL ADMINISTRATION 3
See URAF837 for course description

POSC 838 PUBLIC POLICY ANALYSIS 3
Seminar covers an overview of the policy process and considers all topics central to an
understanding of policy making in the United States. May be crosslisted with URAF838.

POSC 839 PUBLIC FINANCE AND FISCAL MANAGEMENT 3
See URAF833 for course description

POSC 840 INTERNATIONAL POLITICAL ECONOMY 3
Considers the political underpinnings and effects of the interaction of political and eco-
nomic processes at the global level. Reviews schools of thought and various topics
including long cycles, foreign investment, monetary and trade regimes, and the political
dilemmas of growth and stagnation.

POSC 868 RESEARCH 3
To be taken by M.A. students seeking to satisfy the program's research requirement
through the research paper option.

POSC 869 MASTER'S THESIS 1-6

POSC 964 PRE-CANDIDACY STUDY 3-12 PF
Research and readings in preparation of dissertation topic and/or qualifying examina-
tions for doctoral students before admission to candidacy but after completion of all
required course work.

RESTRICTIONS: Not open to students who have been admitted to candidacy.

POSC 969 DOCTORAL DISSERTATION 1-12 PF

PSYCHOLOGY

PSYC 201 GENERAL PSYCHOLOGY 3
A foundation course in the application of the scientific method to problems of human
behavior and experience.

PSYC 202 HUMAN DEVELOPMENT AND EDUCATIONAL PRACTICE 3
See EDST202 for course description.

PSYC 301 PERSONALITY 3
A survey of data and theories of human personality and affect.
PREREQ: PSYC201.

PSYC 303 INTRODUCTION TO SOCIAL PSYCHOLOGY 3
Analysis of interpersonal behavior with special emphasis on problems of conformity and
influence, the organization and dynamics of social groups; and the development of opin-
ions and attitudes.
PREREQ: PSYC201.

PSYC 304 EDUCATIONAL PSYCHOLOGY - SOCIAL ASPECTS 3
See EDST304 for course description

PSYC 305 EDUCATIONAL PSYCHOLOGY - COGNITIVE ASPECTS 3
See EDST305 for course description.
PSYC 306 Computer Applications in Psychology 3
Introduction to computer programming, statistic packages, spreadsheet and database
PREREQ: PSYC309
RESTRICTIONS: Open to PSYC majors and minors only

PSYC 309 Measurement and Statistics 3
Theory and the application of statistical techniques to psychology data
PREREQ: One course in basic college mathematics and PSYC201

PSYC 310 Sensation and Perception 3
Theories and experimental study of sensation and perception
PREREQ: PSYC309

PSYC 312 Learning and Motivation 3
Experimental study of contemporary theories of learning and motivation
PREREQ: PSYC309.

PSYC 314 Brain and Behavior 3
Study of the brain mechanisms underlying hunger, sex, aggression, learning, memory, perception, sleep and waking
PREREQ: PSYC201.

PSYC 317 Sexual Behavior and Motive 3
An objective view of sex from physiological, psychological, sociological and anthropological studies. Readings include Masters and Johnson, Freud, Kinsey, Reiss, and Ford and Beach. Practical sexual information, e.g., contraception, also discussed, sometimes by outside experts
PREREQ: PSYC201 and PSYC309

PSYC 322 Psychology of Adjustment 3
Problems of human adjustment with emphasis on causation and prevention of common maladjustments

PSYC 324 Industrial Psychology 3
Psychological factors in selection, training, fatigue, morale, attitudes, accidents, and other aspects of worker efficiency
PREREQ: PSYC201 and PSYC309

PSYC 325 Child Psychology 3
Survey of the interactions of physiological, psychological, and environmental factors determining psychological development. Consideration of major theories of child development
PREREQ: PSYC201

PSYC 333 Psychology of Women 3
Psychological analysis of the meaning and implications of being a woman; and cause and consequences of the female experience. Biological sex vs. psychological sexuality, identity, stereotyping, discrimination, self-concept, and the feminist perspective. May be cross-listed with WOMS333
PREREQ: PSYC201 or any 300-level psychology course

PSYC 334 Abnormal Psychology 3
Disorders of behavior and consciousness including the various psychoses, psychoneuroses, mental deficiency, and other conditions
PREREQ: PSYC201.

PSYC 340 Cognition 3
Survey of major themes in human thought processes, concept formation, problem solving, creativity, language use and cognitive development
PREREQ: PSYC201 and PSYC309

PSYC 346 Psychology and the Law 3
See CRJU346 for course description

PSYC 347 The Jury: Guilty or Not Guilty 3
Observations of actual criminal and civil trials, mock jury deliberations of trials observed, and lectures on jury research, trials, meetings with judges, prosecutors and defense attorneys
PREREQ: PSYC201
COREQ: CRJU47
RESTRICTIONS: Requires permission of instructor

PSYC 350 Developmental Psychology 3
An analysis of theory and research in developmental psychology including the topics of developmental processes, developmental risk, systems theory and contemporary social issues
PREREQ: PSYC201 and PSYC309
RESTRICTIONS: If both PSYC325 and PSYC350 are taken, only PSYC325 will count for Major credit. Psychology majors and minors only

PSYC 365 Psychology Field Placement 3
Student contracts with any psychology instructor. Requirements include a minimum of four hours per week working in an agency, institution or business, reading assignments and writing a term paper. Placement will be made with assistance from Career Planning and Placement. Inquiries should be made several months in advance
PREREQ: PSYC201 and PSYC309

PSYC 366 Independent Study 1-6
PSYC 370 Research in Personality 3
An analysis of contemporary issues and research in personality including the assessment of personality traits, the personality situation interaction and the social and biological bases of individual differences
PREREQ: PSYC201 and PSYC309
RESTRICTIONS: If both PSYC301 and PSYC370 are taken, only PSYC301 will count for major credit. Open to Psychology majors and minors only.

PSYC 380 Psychopathology 3
Exploration of research on diagnosis, etiology and treatment of major psychological disorders. Emphasis on original research articles, class discussion, assessment instruments in addition to analysis of taped interviews with patients used to illustrate the disorders
PREREQ: PSYC201 and PSYC309, and either PSYC301, PSYC303, or PSYC325
RESTRICTIONS: If both PSYC334 and PSYC380 are taken, only PSYC334 will count for major credit. Open to Psychology majors and minors only.

PSYC 390 Social Psychology 3
An analysis of theory and research in social psychology including the topics of social cognition, attitudes, interpersonal, group and intergroup relations. Student-designed research projects including data analysis
PREREQ: PSYC201 and PSYC309
RESTRICTIONS: If both PSYC303 and PSYC390 are taken, only PSYC303 will count for major credit. Open to Psychology majors and minors only.

PSYC 403 Psychology of Nonverbal Behavior 3
A seminar on the social psychological implications of the research literature on nonverbal behavior in social interaction. Focuses on interpersonal attraction, leadership, impression formation, causal attribution, discrimination, social attitudes, and cross-cultural factors, with practical applications
PREREQ: PSYC309 and PSYC333 or PSYC390

PSYC 405 Advanced Social Psychology 3
Contemporary theories of interpersonal behavior, dynamics of social groups and experimental methods for the study of social (communication and interaction) processes
PREREQ: PSYC309, and PSYC390 or PSYC303

PSYC 406 Reduction of Intergroup Conflict 3
The reduction of intergroup conflict in business, educational and experimental laboratory settings, with special attention given to organizational mergers. Investigation of strategies for reducing intergroup conflict
PREREQ: PSYC309, and PSYC303 or PSYC390

PSYC 411 Brain and Computer 3
The computing machinery of the brain: a hands-on introduction to neural models and networks
PREREQ: PSYC310 or PSYC312 or PSYC314 or PSYC340

PSYC 412 Human Psychophysiology 3
Introduction to psychophysiological recording techniques. Elementary anatomy and physiology of the human nervous system. Application of psychophysiological techniques to the investigation of psychophysiology, information processing, and social psychology. Laboratory demonstration of polygraphic measurement of autonomic and CNS variables with small computer analysis
PREREQ: PSYC309 and PSYC314

PSYC 414 Drugs and the Brain 3
Topics covered include drug treatment of mental illness, and drug abuse/addiction
PREREQ: PSYC309; PSYC314
RESTRICTIONS: PSYC380 or PSYC334 recommended in addition to Prerequisites.

PSYC 415 History and Systems of Psychology 3
Psychology from the early Greeks through the more important "schools" of the 20th century
PREREQ: Two of the following: PSYC310, PSYC312, PSYC314 or PSYC340 as well as one of: PSYC350, PSYC370, PSYC380 or PSYC390

PSYC 416 Psychological Perspectives on the Black American 3
The experience of Black Americans as viewed from a psychological perspective. Psychological theory and research pertaining to Black Americans; reactions to oppression, collective behavior, personality development, and life styles. May be cross-listed with BAMS432
PREREQ: PSYC309; and PSYC390 or PSYC303

PSYC 417 Animal Behavior 3
Seminar on naturalistic and experimental investigations of species-typical behavior
PREREQ: PSYC309.

PSYC 418 Human Emotions 3
Emotions, cognition and behavior. Role of emotions in personality and social relationships. Includes laboratory/tutorial session with analysis and presentation of scenes from dramatic literature to illustrate integration of emotion, cognition and action
PREREQ: PSYC309; and PSYC301 or PSYC325 or PSYC350

UNIVERSITY OF DELAWARE 1995-96 CATALOG / PAGE 341
PSYC 419 Psychology of Humor 3
Systematic survey of psychological theories of humor and the empirical basis for them. Undergraduate. Emphasizes research on cognitive, motivational and social developmental bases of smiling and laughter.
PREREQ: PSYC201, PSYC303 or PSYC325 or PSYC310; and PSYC309

PSYC 424 Applied Social Psychology 3
The application of basic principles of interpersonal behavior to everyday life. Topics covered include persuasion, reciprocity, employee motivation, organizational development, liking and authority.
PREREQ: PSYC309, and PSYC303 or PSYC390

PSYC 425 Topics in Child Psychology 3
Analysis of specific topics in modern psychology, such as infancy and cognitive and social development. Topics may vary from year to year.
PREREQ: PSYC325 or PSYC 350

PSYC 441 Computers and Cognition 3
Introduction to computer models of cognitive processes. Computer models give rise to the interdisciplinary area of cognitive science. Course covers basic types of models that have been used and a discussion of their psychological plausibility.
PREREQ: PSYC340

PSYC 444 The Psychology of Aesthetics 3
Psychological and psychobiological theories and empirical investigations of aesthetic experience.
PREREQ: PSYC309, PSYC310, or PSYC314

PSYC 445 Topics in Adolescent Psychology 3
Analysis of the physiological, psychological and social factors influencing psychological development from late childhood through adolescence.
PREREQ: PSYC309, and PSYC325 or PSYC350

PSYC 452 Language and Thought 3
A survey of research dealing with the nature of linguistic and cognitive structures, their development and their interaction.
PREREQ: PSYC340

PSYC 460 Assessment of Young Children 3
See IFST452 for course description

PSYC 462 Language Acquisition 4
See EDST462 for course description

PSYC 466 Independent Study 1-6

PSYC 468 Research 3-6

PSYC 481 Clinical Psychology 3
Introduction to the clinician's role in all aspects of patient care. Case study, seminar and practical experience. Topics vary each year.
PREREQ: PSYC309, and PSYC334 or PSYC380

PSYC 605 Advanced Social Psychology 3
Contemporary theories of interpersonal behavior, dynamics of social groups and experimental methods for the study of social (communication and interaction) processes.
PREREQ: PSYC303 and PSYC309

PSYC 606 Animal Behavior 3
Seminar on naturalistic and experimental investigations of species-typical behavior.

PSYC 608 Advanced Learning and Motivation 3
Experimental origins of the principles of learning with emphasis on the role of motivation in the learning process.
PREREQ: PSYC310 and PSYC312

PSYC 612 Human Psychophysiologv 3
Introduction to psychophysiological recording techniques. Elementary anatomy and physiology of the human nervous system. Application of psychophysiological techniques to the investigation of psychopathology. Information processing and social psychology. Laboratory demonstration of polygraphic measurement of autonomic and CNS variables with small computer analysis.
PREREQ: PSYC309

PSYC 615 History of Cognitive Psychology 3
Review of major concepts in psychology and its philosophical roots that have determined the current theories and models of cognition.

PSYC 616 Computer Models of Cognition 3
Survey of computer models for perception, language and problem-solving. Covers representation schemes and control structures used in artificial intelligence models. Emphasis placed on their psychological relevance.

PSYC 624 Industrial Social Psychology 3
Social psychology applied to problems of productivity, satisfaction, communication and organization.
PREREQ: PSYC303

PSYC 626 Neuroscience I 4
See BISC626 for course description

PSYC 627 Neuroscience II 3
See BISC627 for course description

PSYC 640 Text Comprehension 3
Survey of recent theoretical and experimental work in the area of text comprehension. Based on primary sources, addresses such topics as the effects of prior knowledge on processing, semantic priming, question answering and hypertext.

PSYC 641 Visual Cognition 3
Reviews current research findings on how biological systems process visual information. Topics include basic visual processes, object recognition, spatial attention, visual search, visual memory (including imagery) and reading. Considers models derived from cognitive psychology, machine vision and neuroscience.

PSYC 650 Cognitive Neuroscience 3
Examines neurophysiological basis for a variety of cognitive processes such as object recognition, selective attention, visual imagery, memory and language. Topics include neural networks, effects of brain damage and neural imaging techniques, such as PET Scan and event-related brain potentials.

PSYC 651 Controversies in Cognitive Psychology 3
Based on empirical research, students critically evaluate selected models of visual perception, attention and human memory. Opposes theoretical perspectives chosen to highlight the controversial areas of cognitive theory.

PSYC 668 Research 1-6

PSYC 675 Language Acquisition 4
See EDST675 for course description

PSYC 681 Clinical Psychology 3
Introduction to clinical theories, research and practice. Diagnosis and classification of mental disorders.
PREREQ: PSYC309 or PSYC310

PSYC 692 Social Skills Training for Children 3
See EDST692 for course description

PSYC 803 Emotions in Human Development 3
The nature of emotions, their relation to cognition and action and their role in mother-infant interaction, attachment, temperament, personality development, psychopathology and psychotherapy.

PSYC 804 Seminar in Human Development 3
Selected research literature in developmental psychology. May be cross-listed with EDST 837.

PSYC 805 Theories in Social Psychology 3
A comprehensive examination of the dominant theories and associated research in social psychology.

PSYC 806 Psychobiology 3
The structure and function of the nervous system and the neural mechanisms underlying sensory and motor processes and arousal, sleep, emotions, motivation, learning and memory.

PSYC 807 Group and Interpersonal Processes 3
Addresses basic theoretical and empirical knowledge of group processes, structures and interactions.

PSYC 808 Clinical Neuropsychology 3
Presents an overview of the neuroanatomical and biochemical bases of normal and abnormal behavior, the essentials of the neurological examination, a survey of neuropsychological assessment and an examination of several current topics.
PSYC 809 Research Design 3
An overview of methodological issues in the conduct of psychological research, including correlational, experimental, and quasi-experimental studies. Special emphasis on clinical and personality research.

PSYC 810 Information Processing 3
Theories of information processing and psychophysics.

PSYC 811 Sensory Processes 3
Structure and function of the sense organs, with emphasis on research techniques and methodology.
PREREQ: PSYC627

PSYC 813 Seminar in Intergroup Relations 3
Cognitive, motivational and cultural factors involved in the creation and reduction of intergroup bias and conflict. Emphasis on theoretical and applied perspectives.
RESTRICTIONS: Requires permission of instructor.

PSYC 814 Research Methods in Social Psychology 3
Strategies and techniques of research on social interaction.

PSYC 815 Theory and Research in Group Behavior 3
Empirical findings and major theories of group behavior. Emphasis on research methodology.

PSYC 817 Individual Intelligence Testing 3
See EDST817 for course description.

PSYC 819 Psychotherapy I 3
Survey of theories, schools and techniques of psychotherapy and critical review of relevant research.

PSYC 820 Psychodiagnosis: Objective Trait and Behavioral Assessment 3

PSYC 821 Family Therapy 3
Survey of different models for assessing and treating family dysfunction. Particular emphasis will be placed on marital and parent-child problems. The course objective is to help students develop conceptual and observational skills required for conducting therapy.
RESTRICTIONS: Requires permission of instructor.

PSYC 823 Applied Human Development 3
See EDST823 for course description.

PSYC 824 Community Mental Health 3
The community's role in contributing to mental illness and the mode and feasibility of organizing community mental health agencies into a concerted preventive mental hygiene effort. Focuses on the Greater Wilmington community.

PSYC 825 Group Psychotherapy 3
Theories and applications of group psychodynamic practices including role playing and psychotherapy. Review of relevant research and evaluative studies.

PSYC 827 Advanced Psychotherapy II 3
Schools, theories and techniques of psychotherapy including research on psychotherapy and review of evaluative studies. Supervised practice.
PREREQ: PSYC819

PSYC 829 Advanced Psychopathology 3
Nosesology and etiology of the behavior disorders of non-organic origin. Theories of psychopathology, including various modes of conceptualizing psychopathology, i.e., medical vs. behavioral and psychosocial models. Reliability and validity of psychodiagnosis, and relevant research and problems of experimental clinical research with institutionalized populations.

PSYC 833 Seminar in Emotions 3
Theories and methods of measuring emotions, as states or traits of humans. Describes and demonstrates a range of methods, including rating, checklist, questionnaire and physiological ones.

PSYC 834 Supervised Practice in Clinical Psychology I 1-3 PF
Limited diagnostic and therapeutic practice in clinical setting under professional supervision.

PSYC 835 Supervised Practice in Clinical Psychology II 1-3 PF
Continuation of PSYC834.

PSYC 836 Supervised Practice in Clinical Psychology III 1-3 PF
Continuation of PSYC834 and PSYC835.
PREREQ: PSYC834 and PSYC835

PSYC 837 Supervised Practice in Clinical Psychology IV 1-3 PF
Continuation of PSYC834, PSYC835 and PSYC836.
PREREQ: PSYC836

PSYC 840 Advanced Personality Study 3
Theories of personality and motivation, current research in personality and motivation, relationship to psychopathology, normal adjustment and psychotherapy.
RESTRICTIONS: Requires permission of instructor.

PSYC 845 Childhood Psychopathology 3
See EDST850 for course description.

PSYC 850 Seminar in Memory 3
Theories of information storage and retrieval.
RESTRICTIONS: Requires permission of instructor.

PSYC 851 Seminar in Perception 3
Major experimental problems and theories: core-context, configuration, topological, association and others.

PSYC 852 Seminar in Personality 3
Description and measurement of personality: comprehensive theories of personality; and methods of experimental investigation.

PSYC 853 Seminar in Learning 3
Current theories of learning; and emphasis on contemporary experimental literature.

PSYC 854 Seminar in Communications 3
Syntactic, semantic, and pragmatic phenomena. Experimental study of communication processes with special attention to nonverbal aspects of interpersonal interaction.
RESTRICTIONS: Requires permission of instructor.

PSYC 855 Seminar in Attitude Theory and Measurement 3
Analysis of structure, development and change in social attitudes. Emphasis on research methodology.
PREREQ: PSYC805
RESTRICTIONS: Requires consent of instructor.

PSYC 856 Seminar in Cognitive Processes 3
Consideration of major theories and empirical research in both individual and group problem solving and decision making.

PSYC 858 Seminar in Visual Processes 3
Survey of structure and function in the visual system with particular emphasis on the nature of light and stimulus detection, as well as integration and transfer of the neural code.
RESTRICTIONS: Requires permission of instructor.

PSYC 859 Seminar in Cooperation and Competition 3
Study of negotiation, bargaining, risk taking and cooperation, in small and large groups.
RESTRICTIONS: Requires permission of instructor.

PSYC 860 Psychological Statistics 3
Applications to behavior measurement of probability, regression, analysis of variance and covariance; psychometrics and scaling techniques; and design of experiments.
PREREQ: STAT201 or PSYC309, and four courses in psychology.

PSYC 861 Psychological Statistics 3
Applications to behavior measurement of probability, regression, analysis of variance and covariance; psychometrics and scaling techniques; and design of experiments.
PREREQ: STAT201 or PSYC309, and four courses in psychology.

PSYC 863 Seminar: Child Psychology 3
Advanced treatment of the experimental literature in child psychology as it relates to the issue of the "cognitive" vs. "motivational" approach to child development.

PSYC 868 Research 1-6

PSYC 869 Master's Thesis 1-6
RESTRICTIONS: Requires department permission.

PSYC 964 Pre-Candidacy Study 3-12 PF
Research and readings in preparation of dissertation and/or qualifying examinations for doctoral students before admission to candidacy but after completion of all required course work.
RESTRICTIONS: Not open to students who have been admitted to candidacy.

PSYC 969 Doctoral Dissertation 1-12 PF

RUSSIAN

RUSS 105 Russian I - Elementary 4
Introduction to the Russian language and development of speaking, listening, reading and writing skills through the use of basic texts. Language laboratory as needed.
RUSSIAN

RUSS 106  RUSSIAN II - ELEMENTARY/INTERMEDIATE  4
Completion of basic Russian. Increasing mastery of the basic skills of speaking, listening, reading and writing.
PREREQ: RUSS105
RESTRICTIONS: Two to three years of high school Russian acceptable in lieu of prerequisite.

RUSS 107  RUSSIAN III - INTERMEDIATE  4
Review of grammar, continued practice in speaking and writing, and reading texts of average difficulty.
PREREQ: RUSS106
RESTRICTIONS: Four years of high school Russian acceptable in lieu of prerequisite. Satisfies the Arts and Science foreign language requirement.

RUSS 200  RUSSIAN GRAMMAR REVIEW  3
Systematic review of elementary and intermediate Russian grammar, study of complex sentence structure and idioms. Some conversational practice.
PREREQ: RUSS107

RUSS 205  RUSSIAN CONVERSATION  3
Practical use of the language. Topics drawn from contemporary Russian life and literature.
PREREQ: RUSS107

RUSS 211  RUSSIAN READING AND COMPOSITION: SHORT FICTION  3
Reading and discussion of 20th-century Russian short stories and novellas. Several short compositions. Grammar review where appropriate.
PREREQ: RUSS107

RUSS 305  RUSSIAN CONVERSATION AND COMPOSITION  3
Discussion of current cultural, social and political topics in Russia and the former republics. Vocabulary building, grammar exercises and frequent compositions.
PREREQ: Any 200-level course conducted in Russian.

RUSS 310  INTRODUCTION TO RUSSIAN LITERATURE I  3
Masterpieces of poetry, narrative prose and drama from the 19th century.
PREREQ: RUSS211

RUSS 312  INTRODUCTION TO RUSSIAN LITERATURE II  3
Masterpieces of poetry, narrative prose and drama from the 20th century.
PREREQ: RUSS211

RUSS 325  RUSSIAN CIVILIZATION AND CULTURE  3
Survey of the major cultural, social and political developments in Russia from its inception to the present.
PREREQ: RUSS211

RUSS 366  INDEPENDENT STUDY  1-3

RUSS 401  ADVANCED RUSSIAN GRAMMAR AND COMPOSITION  3
Selected topics in advanced Russian grammar, with special attention to participial constructions, verbs of motion, aspect and problems of syntax and word order. Exercises in writing correct and idiomatic Russian.
PREREQ: One 300-level Russian course.

RUSS 440  SPECIAL TOPICS: RUSSIAN DRAMA, PROSE OR POETRY  3
Explores one of the three major genres by examining a specific theme. Subject matter varies and will be announced in registration booklet.
PREREQ: Any two 300-level Russian courses.
RESTRICTIONS: May be repeated for credit when topics vary.

RUSS 455  SELECTED AUTHORS, WORKS AND THEMES  3
Works of one or more outstanding authors or on a special theme.
PREREQ: Two 300-level Russian literature courses.
RESTRICTIONS: May be repeated for credit when topics vary.

RUSS 465  SEMINAR  3
Various authors and themes.
PREREQ: One 400-level Russian literature course.
RESTRICTIONS: May be repeated for credit when topics vary.

RUSS 466  INDEPENDENT STUDY  1-3

RUSS 465  SEMINAR  3
Various authors and themes.
PREREQ: One 400-level Russian literature course.
RESTRICTIONS: May be repeated for credit when topics vary.

SCIENCE

SCEN 101  PHYSICAL SCIENCE  3-4
The structure, processes and concepts of the physical world.
RESTRICTIONS: Requires high school algebra. For non-science students with no physics or chemistry background. Not for physics or chemistry major credit. Only one course from among SCEN101, PHYS104, PHYS201 or PHYS207 can count toward graduation.

SCEN 102  PHYSICAL SCIENCE  3-4
The structure, processes and concepts of the physical world.
RESTRICTIONS: Requires high school algebra. For non-science students with no physics or chemistry background. Not for physics or chemistry major credit. Only one course from among SCEN101, PHYS104, PHYS201 or PHYS207 can count toward graduation.

SCEN 391  SECONDARY SCIENCE CURRICULUM  3
Content, organization, levels and design of curriculum in secondary-school programs in biology, chemistry, earth science, general science, physical science and physics. Design of a science course; planning major units.
RESTRICTIONS: Must precede SCEN491.

SCEN 491  TEACHING SCIENCE IN SECONDARY SCHOOLS  4
Techniques, approaches and preparation for teaching science in high school and middle school. Laboratory meets one full morning per week in local high schools and middle schools for observation and initial teaching.
COREQ: EDST302

SCEN 492  STUDENT TEACHING SEMINAR: SECONDARY SCIENCE  3
PF
Methods, techniques and problems in student teaching in secondary schools and their solutions. Assertiveness, authority, management, strategies and teaching for understanding.
COREQ: EDDV400.

SOCIOLOGY

SOCI 201  INTRODUCTION TO SOCIOLOGY  3
Principles of sociology

SOCI 202  SOCIAL DEVIANCE  3
Major forms of deviant behavior and the varied approaches to analysis.

SOCI 203  INDIVIDUAL AND SOCIETY  3
Analysis of the social formation of the individual. Particular emphasis on socialization and personality development. The contribution of individual patterns of behavior to the functioning of social systems.

SOCI 204  URBAN COMMUNITIES  3
Urbanization, rural-urban social differences and the organization of urban communities.
May be cross-listed with BAMS204.

SOCI 206  WOMEN AND WORK  3
See WAMS206 for course description.

SOCI 208  WORK IN AMERICA  3
The role of work in contemporary society. Social, institutional and cultural influences on work. Special emphasis on problem areas such as job satisfaction, professionalism, career patterns, leisure and occupational choices.

SOCI 209  SOCIAL PROBLEMS  3
Topics may include poverty, intergroup conflicts, war, mental illness, aging, adolescence and environmental pollution.

SOCI 210  POPULATION PROBLEMS  3
The interaction between population characteristics and other social and economic factors.

SOCI 211  MEN, CONFLICT AND SOCIAL CHANGE  3
See WAMS211 for course description.

SOCI 213  MEN AND WOMEN IN AMERICAN SOCIETY  3
Designed to provide students with a sociological framework for analyzing sex and gender relations in contemporary American society. Topics include the social construction of gender, patterns of sex role socialization, gender stratification in the paid work force, gender relations in the family and other social institutions. May be cross-listed with WAMS213.

SOCI 242  SOCIOLOGY AND THE HEALTH PROFESSIONS  3
See CSUC242 for course description.

SOCI 243  SOCIETY, POLITICS AND HEALTH CARE  3
See CSUC243 for course description.

SOCI 301  INTRODUCTION TO SOCIOLOGICAL RESEARCH  3
Survey of research methods and data analysis employed in sociology.
PREREQ: SOCI201
RESTRICTIONS: Strongly recommended - Junior status and 12 social science credits.

SOCI 303  JUVENILE DELINQUENCY  3
Delinquency as a form of socially deviant behavior; definition of the extent of limitations of statistics, theories of causation, and the delinquent subculture; prevention and treatment.
PREREQ: SOCI201 or SOCI209

SOCI 304  CRIMINOLOGY  3
The nature, kinds and causes of crime. Criminal liability, criminal careers and organized racketeering. May be cross-listed with CJUS204.
PREREQ: SOCI201 or SOCI202 or SOCI209.
PREREQ: 50CI20

SOCIO 305 SOCIAL CLASS AND INEQUALITY 3
Internal differentiation as a basis for inequality and differential life chances of human societies.

SOCIO 306 PERSONALITY AND SOCIETY 3
Interaction of personality and society, including such aspects as complex organizations and small groups. Particular emphasis on the social formation of personality, and its role in the production of various modes of social behavior and the dynamics of social change.
PREREQ: SOCIO201, SOCIO203 or PSYC201

SOCIO 308 THE FAMILY 3
The comparative study of the family in various societies provides a background for the analysis of family organization in modern America.
PREREQ: SOCIO201 or SOCIO202 or SOCIO203 or SOCIO209

SOCIO 310 SOCIOLOGY OF HEALTH CARE 3
Professionalization of health occupations, hospitals as social systems, medical education and practice organizations, health care organizations and their interrelationships (politics of health), and health service patterns. May be cross-listed with CSCC310.
PREREQ: SOCIO201

SOCIO 311 HOSPITALS 3
Hospitals, ambulances, nursing homes and other medically organized inpatient facilities viewed as health care settings and as organizations in society. Includes considerations of hospitals as organizations, as research settings, as organizations where professionals work and as sites of patient experience. May be cross-listed with CSCC311

SOCIO 312 THEORIES OF SOCIETY 3
Covers writings of Karl Marx, Emile Durkheim, Max Weber and related current approaches. Focuses on theoretical perspectives concerned with social development, social conflict, solidarity, social class and gender.
PREREQ: SOCIO201

SOCIO 320 PERSONALITY AND POLITICS 3
The role of personality in political behavior. Considerations include the social and psychological motivations for political activity and the differential relationship of personality to variations in political systems, roles, ideologies and dynamics, such as political consensus and cleavage. Attention given to particular methods of research in this specific area of social behavior.
PREREQ: SOCIO201 or SOCIO203 or PSYC201 or PSYC205

SOCIO 322 CROWDS, CULTS AND REVOLUTIONS 3
Analysis of forms of behavior in relatively unstructured situations such as crowds, panics, riots and demonstrations; and processes of interaction: susceptibility, contagion, polarization and communication.
PREREQ: SOCIO201

SOCIO 327 SOCIOLOGY OF ORGANIZATIONS 3
Business enterprises, the military, governmental bureaus and other large-scale organizations. Bureaucratic structure, internal systems of status and authority, division of labor, social control, and the individual in the organization.
PREREQ: SOCIO201

SOCIO 330 POPULATION, LAW AND SOCIETY 3
Interrelationships among population, law and social structure with an emphasis on analyzing strategies of adaptation to change. Introduction to demographic techniques; contemporary issues such as family planning, population policies, migration, marriage and divorce. May be cross-listed with CRJU330.

SOCIO 341 WELFARE AND SOCIETY 3
Institutional apparatus created to deal with the welfare problems of an industrial society, development of welfare institutions, their structure and functioning.
PREREQ: 18 credit hours in sociology, psychology, political science or economics.

SOCIO 345 SOCIOLOGY OF LAW 3
Analysis of law as a social process in both historical and comparative perspective. Focuses on various theories of law and society and relevant empirical research. May be cross-listed with CRJU345.

SOCIO 346 SOCIOLOGY OF AGING 3
Empirical and theoretical investigation of the aging process.
PREREQ: SOCIO201 or SOCIO202 or SOCIO203 or PSYC201

SOCIO 348 THEORIES OF SOCIAL WORK PRACTICE 3
Methods of social work practice, casework, group work, community organization; sociological and psychological foundations underlying social services. May be cross-listed with CRJU348.
PREREQ: SOCIO201

SOCIO 355 COMPUTERS, ETHICS AND SOCIETY 3
See CSCC355 for course description.

SOCIO 360 SOCIOLOGY OF RELIGION 3
Sociological analysis of major religions and the societies with which they have been associated; social settings of particular systems of belief; the relation of status, religious affiliation and personal behavior in modern societies.
PREREQ: SOCIO201

SOCIO 361 RACE, POWER AND SOCIAL CONFLICT 3
The structure of minority groups; processes of conflict, competition and cooperation; analysis of stratification patterns as they affect and are affected by minority groups. May be cross-listed with BAMS361.
PREREQ: SOCIO201

SOCIO 362 SOCIOLOGY OF MASS COMMUNICATION 3
Impact of mass media - television, film, radio and press - upon social attitudes, values and behavior. Problems of audience feedback, the media in social crisis and issues of control.
PREREQ: SOCIO201

SOCIO 366 INDEPENDENT STUDY 1-3

SOCIO 376 AMERICAN SOCIAL CHARACTER 3
Nature of social character in America, particularly as influenced by recent sociocultural change. Dominant and variant systems of beliefs, ideologies, values, motivations, psychodynamics, personality types and social behavior.

SOCIO 380 DEVELOPMENT AND MODERNIZATION 3
Contemporary issues of social, political and economic change in developing societies. Development theories of modernization and development. Roles of men and women in developing societies.

SOCIO 399 PRACTICUM: TEACHING SOCIOLOGY 3 (3 P)
Practical experience in undergraduate education is gained by serving as a discussion leader in a course taught by a regular member of the faculty.
RESTRICTIONS: Requires permission of instructor. Not for major credit.

SOCIO 401 ADVANCED SOCIOLOGICAL METHODS 3
Conceptualization, design, data collection and data analysis in sociological research.

SOCIO 402 URBAN STUDIES PRACTICUM AND SEMINAR 4 (PF)
Field experience and related seminar. Placement in urban planning and service agencies where students work for approximately 160 hours under professionally trained supervisors. Students meet in a weekly seminar with coordinator.
PREREQ: SOCIO204

SOCIO 407 SOCIOLOGY OF SEX AND GENDER 3
Seminar on sex and gender relations from a sociological perspective. Surveys current research on gender stratification in the paid work force, the feminization of poverty, gender relations in the family, sexual violence, and feminism as a social movement. Special attention given to current theoretical debates on the origins and persistence of sexual inequality and the intersection of gender with race and class in patterns of social stratification. May be cross-listed with WOMS407.
PREREQ: SOCIO201, SOCIO213 AND WOMS201
RESTRICTIONS: Restricted to junior and senior sociology and women's studies majors.

SOCIO 410 HEALTH SERVICES PRACTICUM AND SEMINAR 4 (PF)
Field experience and related seminar. Placement in health service settings where student works for about 160 hours under supervision of health service administrators. Students meet in a weekly seminar with coordinator. May be cross-listed with CSCC410.
PREREQ: SOCIO310 or SOCIO311

SOCIO 411 TECHNIQUES OF DEMOGRAPHIC ANALYSIS 3
Study of demographic equation (fertility, mortality and migration), population processes (composition and distribution) and the use of computers to analyze demographic data.
PREREQ: SOCIO301

SOCIO 412 RESEARCH PRACTICUM 4 (PF)
Field experience and related seminar. Placement in research, planning and service agencies where students work for approximately 160 hours under professionally trained supervisors. Students meet in a weekly seminar with coordinator.
PREREQ: SOCIO301

SOCIO 414 DATA ANALYSIS 3
Methods of analyzing data in sociological research focusing on multivariate approaches.
PREREQ: SOCIO301
RESTRICTIONS: Requires permission of instructor.

SOCIO 415 RACE, CLASS AND GENDER 3
Analysis of current American social issues that show interrelationship of race, class and gender. Readings from sociology, Afro-American studies, feminist studies, history and literature. May be cross-listed with BAMS415 and/or WOMS415.

SOCIO 416 SOCIAL THOUGHT AND CONTEMPORARY SOCIETY 3
Seminar focuses on ways in which social thought defines and analyzes contemporary society. Explores how alternative theories and methods serve to create knowledge about contemporary concerns with everyday life, democracy, equality, social structure and power.
PREREQ: SOCIO312
SOCIOLOGY

SOCI 428 CORPORATE CRIME 3
Nature and causes of the deviant behaviors and crimes of large organizations. How organizations act, are accused of deviance and defend themselves in cases such as price-fixing, sale of unsafe drugs and illegal spying. May be crosslisted with CRJU428

SOCI 430 COMPARATIVE SOCIOLOGY 3
Explores sociological similarities and differences between the United States and a selected country on a number of critical sociological topics. Topics include ethnic and religious diversity, culture, demographic structure, social institutions, social stratification and urbanization

RESTRICTIONS: Requires permission of instructor. Only 3 credits from this course may apply toward departmental requirement of 400-level credits

SOCI 441 SOCIAL WELFARE PRACTICUM AND SEMINAR 4 PF
Field experience and related seminar. Placement in social service agencies where students work for approximately 160 hours under professionally trained supervisors; students meet in a weekly seminar with coordinator
PREREQ: SOCIS41
RESTRICTIONS: Requires permission of instructor

SOCI 442 LAW AND SOCIETY PRACTICUM AND SEMINAR 4 PF
Field experience and related seminar. Placement in court, law firm or other law-related institution where students work for approximately 160 hours under professionally trained supervisors; weekly seminar with program coordinator
PREREQ: SOCIS45
RESTRICTIONS: Requires permission of instructor

SOCI 448 COMMUNITY-BASED TREATMENT 3
Explores issues related to the appropriateness and design of community-based programs for the mentally disabled, substance abusers, the homeless, dependent children, etc. Emphasis on analyzing client needs and community resources, and on understanding the perspectives of clients, staff and neighbors about these programs. May be cross-listed with CRJU448

SOCI 450 POLITICAL SOCIOLOGY 3
Analysis of political organization and action, including evaluation of major approaches. Case studies of political structures and behavior
PREREQ: SOCIS01

SOCI 454 LAWYER'S ETHICS 3
PREREQ: SOCIS01
RESTRICTIONS: Open to junior and senior sociology major only

SOCI 456 LAWYERS AND SOCIETY 3
Seminar focusing upon the social organization and dynamics of the legal profession. Topics include professional association, law school socialization, professional ethics and law practice. May be cross-listed with CRJU456
PREREQ: SOCIS01

SOCI 460 WOMEN IN INTERNATIONAL DEVELOPMENT 3
Understanding of international development process in third world countries by examination of the roles of men and women. Analyzes processes of development with emphasis on women's participation and/or exclusion. Examines development at the project proposal or program implementation level. Hands-on experience in practical project development and proposal presentation skills. May be cross-listed with GEOG460, IFST460 and/or WOMS660

SOCI 466 INDEPENDENT STUDY 1-3

SOCI 470 ENVIRONMENTAL SOCIOLOGY 3
A substantive and theoretical introduction to the major issues in environmental sociology; the emergence and development of the environmental movement; the development of environmental issues; and how environmental issues are related to structural, contextual and perceptual factors

RESTRICTIONS: Requires upper division status, any major

SOCI 495 FIELD EXPERIENCE IN CRIMINAL JUSTICE 4 PF
See CRJU495 for course description

SOCI 604 SOCIAL ORGANIZATION: URBAN COMMUNITY 3
Conditions underlying urban residential patterns and the consequences of these patterns for local community activities

SOCI 605 DATA COLLECTION 3
A survey of methods and techniques for defining research problems and for gathering and ordering data in sociological research
RESTRICTIONS: Requires permission of instructor

SOCI 606 QUALITATIVE METHODOLOGY 3
Focuses on research design, the logic of inquiry and an elaboration of selected issues introduced in SOCIO65. Special emphasis on epistemological issues, methodological concerns central to the social sciences and non-positivistic research strategies and techniques

SOCI 607 SOCIOLOGY OF SEX AND GENDER 3
Reviews current research and theory in the sociology of sex roles and gender with particular attention to issues arising from the gender division of labor, feminism and social change, gender and the structure of social institutions, and the interaction of gender, race and class inequality. Introduces sociological theory and methodology as used and revised by scholars working on gender issues. May be cross-listed with WOMS607

SOCI 609 SOCIAL STRATIFICATION 3
Reviews major theoretical and empirical work in social stratification

SOCI 611 TECHNIQUES OF DEMOGRAPHIC ANALYSIS 3
Study of demographic equation (fertility, mortality and migration), population processes (composition and distribution) and the use of computers to analyze demographic data

SOCI 612 DEVELOPMENT OF SOCIOLOGICAL THEORY 3
Historical survey of the development of sociology and sociological theory beginning with the period of the Social Contract theorists through the classic European theorists of 19th century

SOCI 613 RESEARCH AND SOCIAL THEORY 3
Focuses on the relations between theory and method in social research

SOCI 614 DATA ANALYSIS 3
Methods of analyzing data in sociological research focusing on multivariate approaches
PREREQ: SOCIS05

SOCI 621 THEORIES AND APPROACHES IN SOCIAL DEVIANC3
3 General and specific theoretical orientations in the analysis of social deviance

SOCI 622 COLLECTIVE BEHAVIOR 3
Process and mechanisms operating in panics, riots, demonstrations and other disruptions of social order

SOCI 626 SOCIOLOGY OF ORGANIZATIONS 3
Cultural context of organizational behavior; organizational input-output systems, structures and dynamics. Case studies of industrial, educational, medical and voluntary action organizations

SOCI 627 THEORIES OF COMPLEX ORGANIZATION 3
Development of theories of organizations: systems of authority and power, communication, reward and penalty; dynamics of conflict and accommodation between and within organizations; and problems of induction, placement, coordination and succession within organizations

SOCI 628 CORPORATE AND GOVERNMENTAL DEVIANC3
3 Analyses and cases of internal organizational behavior when external efforts are made to have these behaviors treated as deviant. Also defenses used by the accused organizations and preconditions for, and consequences of, successfully labeling an organization as deviant

SOCI 629 ORGANIZATIONAL CAREERS 3
Relationship between occupational careers and the organizations in which they are pursued: Process of recruitment, socialization, placement, promotion and succession

SOCI 650 POLITICAL SOCIOLOGY 3
Analysis of political organization and action, including evaluation of major approaches. Case studies of political structures and behavior

SOCI 655 LAW AND SOCIETY 3
Historical and structural development of legal systems. Emphasis on comparing legal systems in various cultures from Roman and Oriental law to Anglo-American legal systems

SOCI 661 RACIAL STRATIFICATION 3
Reviews the concept of race as a social historical category and examines the relationship of racial stratification to other systems of inequality. Also evaluates sociological theories of racial discrimination and institutionalized racism

SOCI 813 CURRENT ISSUES IN SOCIAL THEORY 3
Deals with current controversies in social theory, such as the public/private distinction, the development of symbolic interactionism and Neo-Marxism

RESTRICTIONS: Must have completed one graduate-level course

SOCI 835 SEMINAR IN CRIMINAL AND DELINQUENT BEHAVIOR 3

SOCI 836 SEMINAR IN CRIMINAL AND DELINQUENT BEHAVIOR 3

SOCI 869 MASTER'S THESIS 1-6

SOCI 875 PROPOSAL WRITING 3
Focuses on all aspects of grant proposal writing and reviewing. Funded and disapproved grant applications analyzed and critiqued. Mandatory student preparation of a complete grant application to be reviewed on campus by sitting members of NIH review committees.

RESTRICTIONS: Requires 30 hours of graduate study, including 3-6 hours of methods courses. Open only to advanced sociology/criminology graduate students
Introduction to contemporary Spain, its culture, its people, their way of life and the issues confronting them.

RESTRICTIONS: Not open to students who have been admitted to candidacy.

SPANISH

SPAN 101 Elementary Spanish I 3
Introduction to the Spanish language and a development of speaking, listening, reading and writing skills through the use of basic texts. Language laboratory work as needed.

PREREQ: SPAN 101 or SPAN 105

SPAN 105 Spanish I - Elementary 4
Introduction to the Spanish language and a development of speaking, listening, reading and writing skills through the use of basic texts. Language laboratory as needed.

PREREQ: SPAN 101 or SPAN 105

SPAN 106 Spanish II - Elementary/Intermediate 4
Completion of basic Spanish. Increasing mastery of the basic skills of speaking, listening, reading and writing

PREREQ: SPAN 106

RESTRICTIONS: Two to three years of high school Spanish acceptable in lieu of Prerequisite

SPAN 107 Spanish III - Intermediate 4
Review of grammar, continued practice in speaking and writing, and reading texts of average difficulty.

PREREQ: SPAN 106

RESTRICTIONS: Four years of high school Spanish acceptable in lieu of Prereq. Satisfies the Arts and Science foreign language requirement.

SPAN 111 Intermediate Spanish I 3
Review of grammar. Increasing mastery of the basic skills of speaking, listening, reading and writing.

PREREQ: SPAN 102 or SPAN 106

RESTRICTIONS: Three years of high school Spanish acceptable in lieu of Prereq

SPAN 112 Intermediate Spanish II 3
Continued practice in speaking and writing, reading texts of average difficulty, grammar review as needed.

PREREQ: SPAN 111

RESTRICTIONS: Four years of high school Spanish acceptable in lieu of Prereq. Satisfies the Arts and Science foreign language requirement.

SPAN 200 Spanish Composition and Grammar 3
Intensive study of selected grammatical topics (subjunctive, ser/estar, preterite and imperfect). Vocabulary exercises and short compositions.

PREREQ: SPAN 107 or SPAN 112

SPAN 201 Spanish Reading and Composition 3
Majors emphasis on reading, development, composition and literary analysis.

PREREQ: SPAN 200

SPAN 205 Spanish Conversation 3
Practical use of Spanish by means of oral reports and discussions. Emphasis on improvement of basic conversational skills. Grammar review where appropriate, and/or some written work.

PREREQ: SPAN 107 or SPAN 112, or one 200-level course

RESTRICTIONS: Prerequisites require a minimum grade of B

SPAN 206 Culture through Conversation 3
Discussion of topics drawn from contemporary Spanish or Latin American life. For students who wish to broaden their knowledge of Hispanic culture while improving their oral and aural language skills.

PREREQ: SPAN 107 or SPAN 112

SPAN 207 Contemporary Latin America I 3
Introduction to contemporary Latin America. Its culture, its people, their way of life and the issues confronting them.

RESTRICTIONS: Taught abroad, in both English and Spanish. Not for major credit. Does not satisfy Arts & Science foreign language requirement. May be repeated for credit when taken on different study abroad programs.

SPAN 208 Contemporary Spain I 3
Introduction to contemporary Spain, its culture, its people, their way of life and the issues confronting them.

RESTRICTIONS: Taught abroad, in both English and Spanish. Not for major credit. Does not satisfy Arts and Science foreign language requirement.

SPAN 250 Introduction to Business Spanish 3
Familiarizes students with characteristics of business Spanish (terminology, syntactical patterns, etc.) and policies and practices of the Hispanic business community.

PREREQ: SPAN 107 or SPAN 112

SPAN 254 Latin American Politics in the Press 3
Students will explore topics in contemporary Latin American politics as expressed in the news media. The emphasis of the course will be on current events related to the internal and external politics of Latin America. Focus of the study will be the Latin American press: newspapers and magazines printed in the Spanish language.

PREREQ: Any 200-level course taught in the Spanish language.

SPAN 255 Spanish Politics in the Press 3
Explores topics in contemporary Spanish politics as expressed in the news media. Emphasis on current events related to the internal and external politics of Spain. Focus is the Spanish press: newspapers and magazines printed in the Spanish language.

PREREQ: Any 200-level course taught in the Spanish language.

SPAN 301 Survey of Spanish Literature 3
Development of Spanish literature from its origins to the 17th century. Study of representative works, discussions and collateral readings.

PREREQ: SPAN 201.

SPAN 302 Survey of Spanish Literature 3
Spanish literature from the 18th century to the present. Selection of representative works, discussions and collateral readings.

PREREQ: SPAN 201.

SPAN 303 Survey of Spanish-American Literature 3
Representative works in all genres of Latin American literature from pre-Columbian to Modernism.

PREREQ: SPAN 201.

SPAN 304 Survey of Spanish-American Literature 3
Representative works in all genres of Latin American literature in the 20th century.

PREREQ: SPAN 201.

SPAN 305 Oral Communication 3
For individuals with a comprehensive knowledge of Spanish grammar and vocabulary. Emphasis on refinement of expression of abstract ideas as well as mastery of practical communication.

PREREQ: SPAN 200.

SPAN 306 Practical Oral/Written Expression 3
Strengthens skills in grammar and vocabulary in preparation for advanced courses. Includes oral exposes, discussion of articles and videos, textual analysis and compositions.

PREREQ: Any two 200-level Spanish courses conducted in Spanish.

RESTRICTIONS: Taught abroad only.

SPAN 308 Contemporary Spain II 3
Discussion and study of issues related to contemporary cultural, political and social developments in Spain, including its place in today's European community.

PREREQ: Any two 200-level Spanish courses taught in the Spanish language.

RESTRICTIONS: Taught abroad and in Spanish.

SPAN 314 Spanish Phonetics and Phonology 3

PREREQ: SPAN 200.

RESTRICTIONS: Recommended for prospective teachers.

SPAN 325 Spanish Civilization and Culture 3
Survey of geography, history, art and society of Spain.

PREREQ: SPAN 200.

SPAN 326 Latin American Civilization and Culture 3
Survey of geography, history, art and society of Latin America.

PREREQ: SPAN 200.

SPAN 350 Advanced Business Spanish 3
Development of strategies to initiate and maintain oral and written communication in the world of business. Practice in speaking Spanish in business situations, letter writing and article reading. Functional and cultural approach.

PREREQ: Any two 200-level Spanish courses, one preferably being SPAN 250.

SPAN 355 Special Topics 3
Explores an area of special interest in Spanish literature or culture studies. Subject matter varies and will be announced in the registration booklet.

PREREQ: SPAN 200.

RESTRICTIONS: May be repeated for credit when topics vary.

SPAN 366 Independent Study 1-3

UNIVERSITY OF DELAWARE 1995-96 CATALOG / PAGE 347
SPAN 401 ADVANCED SPANISH GRAMMAR 3
A systematic study of standard written and oral Spanish syntax. Translation and syntactic exercises.
PREREQ: Any 300-level Spanish course.

SPAN 403 HISTORY OF THE SPANISH LANGUAGE 3
History of the language and the influence of the pre-Roman strata, Latin, Germanic languages and Arabic. Historical phonology and morphology.
PREREQ: Any 300-level Spanish course.

SPAN 406 ADVANCED SPANISH LANGUAGE 3
Advanced grammatical structure and stylistics with special attention given to technical vocabulary and discourse (e.g., business, law, science, agriculture).
PREREQ: Any 300-level Spanish course.

RESTRICTIONS: Taught abroad only.

SPAN 415 LATIN AMERICAN LITERATURE AND ITS POLITICAL CONTEXT 3
Analysis of selected works by contemporary Latin American authors, focusing on the techniques used by these writers to reveal the political upheaval that has affected Latin America in recent years.
PREREQ: One SPAN 300-level survey of literature.

SPAN 416 CERVANTES: DON QUIJOTE 3
The reading of Don Quijote in Spanish; major themes of the book; the life and times of Cervantes; Antecedents to Don Quijote in Spanish literature. The purpose of Don Quijote: Introduction to the language of Cervantes.
PREREQ: One SPAN 300-level survey of literature.

SPAN 417 HISPANIC NOBEL PRIZE AUTHORS 3
Covers the works of Spanish and Latin American Nobel Prize authors: Echegaray, Benavente and Martinez, Mistral, Jimenez, Asturias, Alexandre, Neruda and Garcia Marquez in relation to their cultural milieu on the regional, national and international levels and in relation to their authors' biographies.
PREREQ: One SPAN 300-level survey of literature.

SPAN 418 GOD, MAN AND WOMAN 3
Analysis of the presentation of God, man and woman in a selection of narrative poems, dramas and novels from the 15th to the 17th centuries. Authors studied include Saniliana, Diego de San Pedro, Alemán, Juan de la Cueva, Cervantes, Luis de Leon, Gracian and Quevedo.
PREREQ: One SPAN 300-level survey of literature.

SPAN 430 SPANISH MODERN NOVEL AND CINEMA 3
Study of a selection of novels of the 20th century that have brought international recognition to the Latin American writers. These novelists depict the social, economic, political and cultural traits of their respective countries. Film versions of some of these novels illustrate artistic interpretations of the subject matter.
PREREQ: One SPAN 300-level survey of literature.

SPAN 433 MODERN SPANISH LITERATURE 3
Spanish drama and lyric poetry from Romanticism to contemporary period.
PREREQ: One SPAN 300-level survey of literature.

SPAN 434 MODERN SPANISH LITERATURE 3
Prose from costumbrismo to the present.
PREREQ: One 300-level survey of literature.

SPAN 435 SPANISH MEDIEVAL LITERATURE 3
Study of the literature from the early lyric poetry to the 15th century.
PREREQ: One SPAN 300-level survey of literature.

SPAN 436 STUDIES IN THE LITERATURE OF THE SPANISH GOLDEN AGE 3
The poetry and prose of the 16th and 17th centuries.
PREREQ: One SPAN 300-level survey of literature.

SPAN 439 POSTWAR SPANISH NARRATIVE 3
The Spanish novel from 1962 to the present. Focuses on novels by leading authors such as Luis Martin-Santos, Juan Goytisolo, Juan Benet, Carmen Martin Gaite, Ana Maria Maiz and Esther Tusquets. Analysis of these works grounded in international literary theory and criticism.
PREREQ: One SPAN 300-level survey of literature.

SPAN 441 THE CONTEMPORARY SPANISH AND SPANISH-AMERICAN NOVEL 3
Study of the novel of the 20th century considered as an artistic expression of the thought and life of the Hispanic world.
PREREQ: One SPAN 300-level survey of literature.

SPAN 443 MEXICAN LITERATURE 3
Representative authors from the Colonial period to the present.
PREREQ: One SPAN 300-level survey of literature.

SPAN 447 CONTEMPORARY HISPANIC FICTION BY WOMEN 3
Explores current fiction by women in Spain and Spanish America. Analyzes selected works as individual literary creations, and also situates them in their cultural, historical and aesthetic contexts, using appropriate critical methodologies.
PREREQ: One 300-level survey of Spanish literature course.

SPAN 451 CONTEMPORARY SPANISH POETRY 3
Analysis of Spanish poetry from Beccquer to the present day.
PREREQ: One SPAN 300-level survey of literature.

SPAN 455 SELECTED AUTHORS, WORKS AND THEMES 3
Works of one or more outstanding authors or on a special theme.
PREREQ: Two 300-level Spanish literature courses.

RESTRICTIONS: May be repeated for credit when topics vary.

SPAN 462 SPANISH ESSAY AND CRITICISM OF THE TWENTIETH CENTURY 3
Study of contemporary critical works and essays.
PREREQ: One SPAN 300-level survey of literature.

SPAN 466 INDEPENDENT STUDY 1-3

SPAN 482 THE THEATRE OF THE SPANISH GOLDEN AGE AND ITS LEGACY 3
Compares the masters of the Golden Age Theatre with today's internationally-known Spanish playwrights. Studies the comedies of Tirso de Molina, Lope de Vega and Calderon de la Barca, and finds their legacy in the plays of Saavedra, Zorrilla, Garcia Lorca and Caso. Investigates the sources and interpretation of the contemporary theatre, and how they have been influenced by the earlier dramatists.
PREREQ: One SPAN 300-level survey of literature.

SPAN 484 CONTEMPORARY SPANISH THEATRE 3
Twentieth-century Spanish theater as a reflection of and commentary on society. Principal authors: Garcia Lorca, Buero Vallejo and Sorolla.
PREREQ: One SPAN 300-level survey of literature.

SPAN 601 ADVANCED SPANISH GRAMMAR 3
Systematic study of standard written and oral Spanish syntax. Translation and syntactic exercises.

SPAN 603 HISTORY OF THE SPANISH LANGUAGE 3
History of the language and the influence of the pre-Roman strata, Latin, Germanic languages and Arabic. Historical phonology and morphology.

SPAN 615 LATIN AMERICAN LITERATURE AND ITS POLITICAL CONTEXT 3
In-depth analysis of selected works by contemporary Latin American authors, focusing on techniques used by these writers to reveal the political upheaval that has affected Latin America in recent years.

SPAN 616 CERVANTES: DON QUIJOTE 3
The reading of Don Quijote in Spanish; major themes of the book; the life and times of Cervantes; Antecedents to Don Quijote in Spanish literature. The purpose of Don Quijote: Introduction to the language of Cervantes.

SPAN 617 HISPANIC NOBEL PRIZE AUTHORS 3
Studies the works of Spanish and Latin American Nobel Prize authors: Echegaray, Benavente and Martinez, Mistral, Jimenez, Asturias, Alexandre, Neruda and Garcia Marquez. In relation to their cultural milieu on the regional, national and international levels and in relation to their authors' biographies.

SPAN 618 GOD, MAN AND WOMAN 3
Analysis of the presentation of God, man and woman in a selection of narrative poems, dramas and novels from the 15th to the 17th centuries. Authors studied include Saniliana, Diego de San Pedro, Alemán, Juan de la Cueva, Cervantes, Luis de Leon, Gracian and Quevedo.

SPAN 630 SPANISH MODERN NOVEL AND CINEMA 3
Study of a selection of novels of the 20th century that have brought international recognition to the Latin American writers. These novelists depict the social, economic, political and cultural traits of their respective countries. Film versions of some of these novels illustrate artistic interpretations of the subject matter.

SPAN 633 MODERN SPANISH LITERATURE 3
Spanish drama and lyric poetry from Romanticism to contemporary period.

SPAN 634 MODERN SPANISH LITERATURE 3
Prose from costumbrismo to the present.

SPAN 635 SPANISH MEDIEVAL LITERATURE 3
Study of the literature from the early lyric poetry to the 15th century.

SPAN 636 STUDIES IN THE LITERATURE OF THE SPANISH GOLDEN AGE 3
The poetry and prose of the 16th and 17th centuries.
SPAN 639 POSTWAR SPANISH NARRATIVE 3
Covers the Spanish novel from 1952 to the present. Focuses on novels by leading authors such as Luis Martín-Santos, Juan Goytisolo, Juan Benet, Carmen Martín Gaite, Ana María Moix and Esther Tusquets. Analysis of these works is grounded in international literary theory and criticism.

SPAN 641 THE CONTEMPORARY SPANISH AND SPANISH-AMERICAN NOVEL 3
Study of the novel of the 20th century considered as an artistic expression of the thought and life of the Hispanic world.

SPAN 643 MEXICAN LITERATURE 3
Representative authors from the Colonial period to the present.

SPAN 647 CONTEMPORARY HISPANIC FICTION BY WOMEN 3
Explores current fiction by women in Spain and Spanish America. Analyzes selected works as individual literary creations, and also to situate them in their cultural, historical and aesthetic contexts, using appropriate critical methodologies.

SPAN 651 CONTEMPORARY SPANISH POETRY 3
Analysis of Spanish poetry from Beccar to the present day. Special emphasis on stylistics.

SPAN 655 SELECTED AUTHORS, WORKS AND THEMES 3
Works of one or more outstanding authors or on a special theme. Restrictions: May be repeated for credit when topics vary.

SPAN 662 SPANISH ESSAY AND CRITICISM OF THE TWENTIETH CENTURY 3
Study of contemporary critical works and essays.

SPAN 682 THE THEATRE OF THE SPANISH GOLDEN AGE AND ITS LEGACY 3
Compares the masters of the Golden Age Theatre with today's internationally known Spanish playwrights. Studies the comedies of Tirso de Molina, Lope de Vega, Calderon de la Barca and Linares in their legacy in the plays of Saavedra, Zorrilla, Garcia Lorca and Casares. Investigates the sources and interpretation of the contemporary theatre, and how they have been influenced by the earlier dramatists.

SPAN 684 CONTEMPORARY SPANISH THEATRE 3
Twentieth-century Spanish theatre as a reflection of and commentary on society. Principal authors: García Lorca, Buero Vallejo and Sastre.

SPAN 689 MASTER'S THESIS 1-6

SPAN 875 SEMINAR: TOPICS IN SPANISH LITERATURE 3
Study of selected topics, authors and works in the various fields of Spanish literature. Variable content. Emphasizes preparation of seminar presentations and term papers. Restrictions: May be repeated for credit when topics vary.

STATISTICS

STAT 201 INTRODUCTION TO STATISTICS I 3
Probability, estimation, classical statistical inference and data analysis.

STAT 202 INTRODUCTION TO STATISTICS II 3
Correlation and regression, multiple regression, analysis of variance, classical time series, short and long-term forecasting, smoothing, and index numbers: business indicators. Prereq: Stat 201.

STAT 205 STATISTICAL METHODS 4
Descriptive statistics, graphical displays, sampling, variation, normal distribution, estimation, hypothesis testing, one-way analysis of variance, simple linear regression and goodness of fit. Laboratory covers use of statistical packages on mainframe and microcomputers. Prereq: Math 210 or Math 230.

STAT 300 STATISTICAL METHODS AND THEORY 4

STAT 366 INDEPENDENT STUDY 1-6

STAT 370 INTRODUCTION TO STATISTICAL ANALYSIS I 3
Basic probability; continuous, discrete and joint distributions; distribution of functions of random variables; order statistics; expected value and central limit theorem. Prereq: Math 222 or Math 243.

STAT 371 INTRODUCTION TO STATISTICAL ANALYSIS II 3
Distributions of common statistics, sampling techniques, estimation, confidence intervals, hypotheses testing and selected topics. Prereq: Stat 370.

STAT 418 SAMPLING METHODS 3
Types of sampling, census vs. survey, methods of sample selection, sampling and nonsampling errors. Planning and execution of surveys, and data collection in selected fields of application. Prereq: Stat 371.

STAT 420 DATA ANALYSIS AND NONPARAMETRIC STATISTICS 3

STAT 450 STATISTICS FOR THE ENGINEERING AND PHYSICAL SCIENCES 3
Combinatorial probability; distribution theory; estimation and hypothesis testing; Experimental design, analysis of variance and regression theory. Prereq: Math 243.

STAT 466 INDEPENDENT STUDY 1-6

STAT 555 STATISTICS FOR BUSINESS AND ECONOMICS 3
Statistical inference, modern decision making, measures of association, classical time series analyses, forecasting and nonparametric techniques. Prereq: Math 221, Math 241 or Math 555.

STAT 600 FUNDAMENTALS OF STATISTICAL ANALYSIS 3
Basic topics in mathematics; most importance in probability and statistics. Selected topics in analysis. Arithmetic operations on arrays and matrices; least squares approximation and the projection theorem.

STAT 601 PROBABILITY THEORY AND APPLICATIONS 3
See Math 630 for course description.

STAT 602 MATHEMATICAL STATISTICS 3
Derived sampling distributions, decision theory, estimation theory, multivariate normal, hypothesis testing and special topics. Prereq: Math 630 or Stat 601.

STAT 611 REGRESSION ANALYSIS 3

STAT 615 DESIGN AND ANALYSIS OF EXPERIMENTS 3

STAT 616 DESIGN AND ANALYSIS OF EXPERIMENTS 3
Planning of experiments, designs for specific problems, fractional factorial, quasifactorial designs, balanced and unbalanced designs, confounding, introduction to linear estimation. Prereq: Stat 615.

STAT 617 MULTIVARIATE METHODS 3

STAT 618 SAMPLING TECHNIQUES 3
Simple random sampling, stratified random sampling, ratio estimates, regression estimates, systematic sampling, cluster sampling and double sampling. Prereq: Stat 371.

STAT 620 NONPARAMETRIC STATISTICS 3
Statistical procedures valid under unrestrictive assumptions; scales of measurement; efficiency comparisons; signed rank procedures; two-sample rank tests; zeros, ties, and other problems of discrete data; order statistics; basic procedures, and nonparametric measures of correlation. Prereq: Stat 601 and Stat 371.

STAT 633 STATISTICAL QUALITY CONTROL 3
Process variation, sequence plotting, control charts, cumulative sum process control procedures, process capability studies, acceptance sampling, quality management and organization, and troubleshooting using graphical techniques. Prereq: Stat 601 or Stat 640.

STAT 640 STATISTICAL CONSULTING 3
The client-consultant relationship. Effective communication. Identifying the question, developing a plan and presenting the results. Following up. Actual consulting experience.

STAT 641 STATISTICAL LABORATORY 1
Involves attendance at weekly statistical laboratory meetings.
TEXTILES, DESIGN AND CONSUMER ECONOMICS

TDCE 233  Fashion Drawing and Rendering  3
Drawing from the fashion model; emphasis on rendering clothing character, fabrics and fashion details using various media; translation of drawings to finished fashion illustrations.
PREREQ: ART 129 or ART 130

TDCE 235  Management of Resources  3
Management of individual resources for the purpose of reaching goals. The influence of values, resources and decision making upon individual and societal management practices.

TDCE 242  Consumer Movement in Perspective  3
The history, present status and possible future of the consumer movement in the United States examined within the context of the existing economic, political and social environments.

TDCE 310  Housing  3
Selection of housing as related to varying income levels and stages in the life cycle; types of housing, government agencies, and design considerations for special groups.

TDCE 312  American Residential Style  3
Historic survey of residential architectural styles from 1700 to present. Emphasis on exterior design elements as they relate to interior layouts, details, ornamentation and furnishings. Field trips.

TDCE 313  Multicultural Fashion Accessories  3
Examines design and production of accessory apparel and body adornment objects created by cultures throughout the world. Ornamental and functional accessories from African, Asian, Indian, American and Far Eastern cultures will be emphasized. Students will produce accessories inspired by self-selected research.
PREREQ: TDCE211

TDCE 314  Apparel Design I  3
Comparative study of the foundation principles and processes of apparel design utilizing draping, flat pattern and simple drafting techniques.
PREREQ: TDCE216

TDCE 317  Tailoring  3
Principles and processes involved in accepted methods of tailoring suits and coats.
PREREQ: TDCE211 or TDCE216.

TDCE 318  Fashion Merchandise Products  3
Examines various types of fashion merchandise including the range of characteristics, sources and manufacturing processes. Emphasis on leather, furs, jewelry, kitchen and home furnishings, and allied merchandise areas.

TDCE 320  Fashion Merchandising Internship  6
An off-campus supervised and coordinated field study program in selected retail stores.

TDCE 321  Travel Study Program  1-6
Study of the domestic and/or international textiles, apparel, interior and allied fashion industries through visits and research projects.
RESTRICTIONS: Requires TDCE faculty approval through an application process. Offered at regular intervals.

TDCE 322  Retail Design and Consumer Behavior  3
Exploration of the effects of retail design on consumer behavior habits, purchasing, purchase purchase, display, signage, personnel, and store layout shall be examined.

TDCE 324  Apparel Design II  3
Advanced flat pattern, dressing and drafting techniques including design and execution of tailored garment structures, as well as apparel utilizing stretch materials.
PREREQ: TDCE314

TDCE 325  Presentation Techniques  3
Development of skills in perspective drawing as well as other presentation techniques for interior design depiction. Mixed media.
PREREQ: TDCE225

TDCE 328  Fashion Sales Promotion  3
Fashion advertising, fashion promotion and other special purpose media utilized uniquely in the world of fashion. Emphasis not only on various components of fashion promotion media and their interrelationships, but also on interdependency of promotional strategy and fashion merchandising.

TDCE 330  Apparel Design Internship  4
An off-campus, supervised field study program in selected business concerns dealing with apparel design and/or manufacture.
RESTRICTIONS: Requires permission of instructor.

TDCE 335  Consumer Financial Management  3
Analysis of financial models utilized in planning, organizing and initiating a strategy for generating and allocating earned and unearned income. Emphasis on studying consumer financial decision making during various stages of an individual's life cycle (e.g., single, newly-married, single parent, etc.)
PREREQ: TDCE200 or ECON300 or ECON301.

TDCE 340  Consumer Affairs Internship  4
An off-campus supervised and coordinated field study in selected agencies and organizations.
PREREQ: TDCE200
RESTRICTIONS: May be repeated once for credit.

TDCE 342  Consumer Laws and Regulations  3
In-depth examination of consumer legislation and regulation policies at the federal and state level. Major pieces of consumer legislation, as well as the agencies responsible for implementing and enforcing these policies, examined in terms of efficiency and effectiveness.
PREREQ: TDCE200, ECON151 or ECON152.

TDCE 345  Fashion Merchandising and Apparel Design Seminar  1 PF
Creates awareness of career opportunities and develop techniques for success in apparel design and texture clothing career options.
RESTRICTIONS: APD and TC majors only.

TDCE 366  Independent Study  1-6

TDCE 400  Controversial Issues in Consumer and Family Behavior  3
Utilizes an economic approach to consumer and family behavior to examine how various economic, social, legal and corporate policies encourage or discourage family investment in human capital. Issues and their relationship to the development and utilization of human capital within the family unit vary.
PREREQ: ECON151.
RESTRICTIONS: Open to Juniors and Seniors only.

TDCE 401  Consumer Policy Analysis  3
Analysis of a consumer welfare related market practice issue. Issue may change. Use of management problem-solving tools to understand the issue and develop policies.
PREREQ: ECON151.

TDCE 415  Topics in Textiles  3
One topic is covered each semester; either fiber science, textile analysis, or textile dyeing and finishing.
PREREQ: TDCE315.

TDCE 416  Fashion Direct Marketing  3
Examines the scope and application of direct marketing including mail-order, customer lists, catalogues, telemarketing, inserts, magazines and package goods applied to the clothing and textile industries.

TDCE 418  Advanced Fashion Merchandising  4
Focuses on computer application related to mathematical concepts and calculations used in merchandising soft goods at the retail level. Mark-ons, mark-downs, retail method inventory, open-to-buy and vendor negotiations are emphasized.

TDCE 419  Social Psychological Aspects of Clothing  3
Study of clothing and appearance as contributors to human interactions; consideration of the importance of clothing in individual and collective behavior. Analysis of how dress reflects self-identity, establishes social identities and affects interpersonal encounters.
PREREQ: TDCE114, PSYC201 and SOC201.

TDCE 422  Family Financial Management  3
Problem-solving approach for resolving financial problems using a variety of financial management techniques. Primary focus oriented toward financial counseling, financial planning or a combination of the two.
PREREQ: TDCE335.

TDCE 424  Apparel Design III  3
Conceptualization, design and execution of a coordinated apparel collection. Advances and expands knowledge and skills from previous courses.
PREREQ: TDCE324.

TDCE 426  Fundamentals of Textile Conservation  3
Introduces scientific principles relevant to the cleaning, repair, storage and exhibition of antique textiles. Evaluates treatment procedures that eliminate damaging agents, retard their effects, or shield textiles from them.

TDCE 432  Consumers, Health and Medical Care  3
Economic perspective on consumer interests in health, medical insurance and medical care. Emphasis on unusual aspects of health care and health insurance markets and relationships between the markets. Includes important effects of uncertainty on decision making, market institutions and public policy.
PREREQ: TDCE200 or ECON300 or ECON301.

TDCE 433  CAD Mass Market Apparel  4
Focuses on all phases of apparel product development for a targeted market from conceptualization through execution of sample garments for mass production. Introduces computer-aided pattern designing, grading, marker making and data management (e.g., sizing, specifications, operations and costing). Includes field trip.
PREREQ: TDCE324.

UNIVERSITY OF DELAWARE 1995-96 CATALOG / PAGE 351
TDCE 435 Consumer and the Environment 3
Analysis of dwindling energy resources and their effect upon consumer alternatives in the marketplace; sociocultural, family and income aspects of consumer behavior in a high energy-consuming society.
PREREQ: TDCE200, ECON151 or ECON152

TDCE 440 Advanced Consumer Economics 3
Application of economic tools to analyze consumer welfare in public and private markets. Efficiency and equity trade-offs, externalities, cost-benefits, program evaluation.
PREREQ: TDCE200 and TDCE342

TDCE 442 Consumer Welfare and Employee Benefits 3
A critical analysis and evaluation of employee benefits, emphasizing the employer's needs, rights and alternatives. Benefits to be analyzed include social insurance; group, life, health, dental and disability insurance; qualified retirement plans, and other direct and indirect benefits.
PREREQ: ECON151 or ECON152

TDCE 444 Fashion Presentation 1
Portfolio preparation and fashion show production for apparel design and merchandising majors. Joint, integrated team projects required.
PREREQ: TDCE333, TDCE365 and TDCE424

TDCE 450 The Historic Interior 3
Survey of the design and function of interior spaces and furnishings in the context of the culture and the times from which they evolved. Primary emphasis on Western Europe and America; primitive cultures, early civilizations and the Orient also explored. Field trips.

TDCE 451 Contemporary Furnishings 3
A survey of modern design evolution in furniture, textiles and the minor arts from the late 19th century to the present. Emphasis on styling and technological forces shaping 20th-century design of interior furnishings. Field trips.

TDCE 455 Textiles, Clothing and the Economy 3
The interplay of economic forces in the production, marketing and consumption of textiles and clothing.
PREREQ: ECON151 or ECON152

TDCE 465 Seminar 1-3 PF
May be repeated to a maximum of three credits.

TDCE 466 Independent Study 1-6

TDCE 466 Seminar 1-3

TDCE 468 Research 1-6

TDCE 468 Research 1-6

TDCE 489 Master's Thesis 1-6

THEATRE

THEA 102 Introduction to Performance 3
A survey of performance training techniques for the non-minor, including the elements of voice, improvisation, movement, dance, character analysis and portrayal.

THEA 104 Introduction to Theatre and Drama 3
Survey of the elements of theatre and drama. Includes attendance at theatrical productions, readings of representative plays, discussion of a method of dramatic analysis, exploration of staging in periods of major importance and discussion of the actor, the designer and the director.

THEA 106 Theatrical Experience Abroad 3
Survey of the elements of performance, theatre and drama in relation to observation of field performances. Attendance at rigorous program of theatrical performances. Studies elements of voice, improvisation, movement, dance, character analysis and portrayal specifically based on observed performances.

THEA 200 Introduction to Theatre Production 3
Processes involved in the production of scenery, properties, lighting, sound and costumes for live performance events. Plays read and analyzed for production requirements.

THEA 202 Introduction to Theatre Design 3
Survey of the evolution of design theory and aesthetics for live production. Elements include the design of scenery, properties, costumes, lighting and sound. Plays read and analyzed for design requirements.

THEA 203 Introduction to Costuming 3
Explores the evolution of costume design and technology. Discusses and analyzes all aspects of costuming through reading of plays.

THEA 204 Introduction to Voice and Speech 3
The use of voice and speech in performance. Includes exercises to develop relaxation, breath support, resonance, vocal strength, optimum pitch and articulatory precision, as well as studies in basic vocal anatomy. Studio format.

THEA 205 Introduction to Mime 3
Explores the theory and practice of theatrical performance without words. Theories of DelSarte, Laban, Decroux and others. Students engage in learning and performing short mime pieces for class.

THEA 206 Introduction to Dance 3
Examines the function and impact of dance in the lives of individuals, societies, and cultures. Lecture and participatory format.

THEA 207 Technical Production Practicum 1-4
Laboratory course for the production of scenery, properties, lighting and sound for performances of the Professional Theatre Training Program Productions.

THEA 209 Costume Production Practicum 1-4
Laboratory course for the production of costumes and costume crafts for public performances of the Professional Theatre Training Program Productions.

THEA 220 Movement and Nonverbal Communication I 3
Emphasis on actor's physical expression of ideas, attitudes and feelings. Basic stage techniques, exploration of power and presence, and development of imagination and ability to use metaphor. Relationship of nonverbal communication to text in building a character.

THEA 226 Fundamentals of Acting 3
Exploration of basic elements of the actor's art and craft so as to deepen and broaden the experience of viewing the theatre. May utilize theatre games, basic text work, improvisation and lecture/demonstrations.

THEA 236 Fundamentals of Jazz Dance 3
Jazz Dance as an art form and vehicle for individual and group expression. Emphasis on rhythm and style.

THEA 300 Fundamentals of Stagecraft 3
Concentrates on traditional techniques used in the construction and rigging of scenery and properties for the stage. Demonstrates basic techniques and processes through a combination of classroom lecture and laboratory experience.
PREREQ: THEA200
COREQ: Theatre majors enroll in a minimum of one credit of THEA407

THEA 301 Fundamentals of Properties Construction 3
Introduces basics of organization and management of properties for a theatrical production in addition to basic techniques of property construction. Demonstrates basic techniques and processes through a combination of classroom lecture and laboratory experience.
PREREQ: THEA200
COREQ: Theatre majors enroll in a minimum of one credit of THEA407

THEA 302 Fundamentals of Stage Lighting 3
Introduces basic techniques and processes used in the lighting of theatrical productions. Emphasis on the use and manipulation of lighting equipment. Demonstrates equipment and basic techniques and processes through a combination of classroom lecture and laboratory experience.
PREREQ: THEA200
COREQ: Theatre majors enroll in a minimum of one credit of THEA407

THEA 303 Fundamentals of Scene Painting 3
Introduction to the tools, materials, and techniques of painting scenery for the stage. Demonstrates basic techniques and processes through a combination of classroom lecture and laboratory experience.
PREREQ: THEA200
COREQ: Theatre majors enroll in a minimum of one credit of THEA407

THEA 304 Fundamentals of Audio for the Theatre 3
Introduces the physical phenomenon of sound and the techniques of controlling and manipulating it for theatrical productions. Demonstrates basic techniques and processes through a combination of classroom lecture and laboratory experience.
PREREQ: THEA200
COREQ: Theatre majors enroll in a minimum of one credit of THEA407

THEA 305 Fundamentals of Costume Construction for the Stage 3
Introduces basic costume construction techniques through lectures, demonstrations, and laboratory experience. Culminates in the construction of a finished costume.
PREREQ: THEA203
COREQ: Theatre Majors enroll in a minimum of one credit of THEA407.
THEA 306  FUNDAMENTALS OF PATTERNMAKING FOR THE STAGE  3
Teaches basic patternmaking techniques required in costuming through lectures, demonstrations, and laboratory experience. Includes how to recreate historical details used for period theatrical garments.
PREREQ: THEA203
COREQ: Theatre majors enroll in a minimum of 1 credit of THEA407

THEA 307  FUNDAMENTALS OF DRAPING FOR THE STAGE  3
Teaches basic draping skills and applies them to period costumes. Examines several historical periods commonly used in theatrical productions. Students create muslins or finished garments from at least four historical periods.
PREREQ: THEA203
COREQ: Theatre majors enroll in a minimum of 1 credit of THEA407

THEA 308  FUNDAMENTALS OF COSTUME CRAFTS  3
Provides basic experience in several craft-related areas commonly utilized in costuming, including maskmaking, surface design, hatmaking, leather work and thermoplastics.
PREREQ: THEA203
COREQ: Theatre majors enroll in a minimum of 1 credit of THEA407

THEA 309  FUNDAMENTALS OF STAGE MANAGEMENT  3
Study of the techniques and procedures used in managing theatrical productions from conception through performance.
PREREQ: THEA200
COREQ: Theatre majors enroll in a minimum of 1 credit of THEA407

THEA 337  INTERMEDIATE JAZZ DANCE  3
Jazz dance as an art form and vehicle for individual and group expression. Introduces criteria for judgment and response. Develops performance potential.
RESTRICTIONS: Previous dance experience or THEA236 recommended.

THEA 341  THEATRE/DRAMA: CLASSIC/MEDIEVAL  3
Survey of major historical and theoretical developments in theatre practice and dramaturgy during the period. Readings in primary and secondary historical sources, major critical and theoretical texts, and representative plays of the period. May be cross-listed with CMLT341.

THEA 342  THEATRE/DRAMA: RENAISSANCE TO 1700  3
Survey of major historical and theoretical developments in theatre practice and dramaturgy during the period. Readings in primary and secondary historical sources, major critical and theoretical texts, and representative plays of the period. May be cross-listed with CMLT342.

THEA 343  THEATRE/DRAMA: 1700 TO 1900  3
Survey of major historical and theoretical developments in theatre practice and dramaturgy during the period. Readings in primary and secondary historical sources, major critical and theoretical texts, and representative plays of the period. May be cross-listed with CMLT343.

THEA 344  THEATRE/DRAMA: 1900 TO PRESENT  3
Survey of major historical and theoretical developments in theatre practice and dramaturgy during the period. Readings in primary and secondary historical sources, major critical and theoretical texts, and representative plays of the period. May be cross-listed with CMLT344.

THEA 345  HISTORY OF THEATRE: AMERICAN MUSICAL THEATRE  3
Musical-dramatic forms of the 19th, 20th, and 21st centuries in the United States and their impact on the modern musical theatre. Complete works read and compared to a series of criteria that are found in successful modern shows. Comparison of older and current work. May be cross-listed with MUSC345.

THEA 346  HISTORY OF THEATRE: THE AMERICAN THEATRE  3
Survey of major historical and theoretical developments in American theatre practice and dramaturgy from Revolutionary times to the present. Readings in primary and secondary historical sources, major critical and theoretical texts, as well as representative plays of the period.

THEA 360  FUNDAMENTALS OF ORAL INTERPRETATION  3
Basic course in interpretation of text for the stage. Concentrates on texts from plays; explores prose and poetry. Emphasis on diction, meaning and presentation. Studio format.

THEA 366  INDEPENDENT STUDY  1-6

THEA 407  THEATRE PRACTICUM FOR MAJORS  1-4
Students assigned production responsibilities on departmental productions in the areas of lighting, sound, scenery, properties, costumes, stage management, painting and theatre management.
RESTRICTIONS: Open to majors only. Requires permission of instructor.

THEA 410  FUNDAMENTALS OF DRAMATURGY  3
Topics covered include various methods of dramatic and entertainment analysis, scene analysis, development of dramaturgical plot, fable and practice. Survey of function and role of the dramaturg in contemporary theatre. Readings in primary and secondary material.
THEA 614  Stage Speech IA 2
Ear training and phonetics. Corrective work on regional speech habits.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Acting or Directing.

THEA 615  Stage Speech IB 2
Continuation of THEA614. Beginning work on verse scansion.
Prerequisite: THEA614.

THEA 616  Stage Speech IIA 1
Continuation of THEA615 with an emphasis on phrasing and verse scansion.
Prerequisite: THEA615.

THEA 617  Stage Speech IIB 1
Continuation of THEA616.
Prerequisite: THEA616.

THEA 618  Stage Speech IIIA 1
Stage dialects and advanced work in phrasing and verse scansion. Individual tutoring in problem areas.
Prerequisite: THEA617.

THEA 619  Stage Speech IIIB 1
Continuation of THEA618.
Prerequisite: THEA618.

THEA 620  Rehearsal and Performance/Acting 1-6
Practical instruction and assignments in the preparation, rehearsal and performance of theatrical productions.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Acting. May be repeated for up to 24 credit hours.

THEA 621  Stage Directing IA 1
Fundamental techniques of planning and staging of production.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Directing.

THEA 622  Stage Directing IB 1
Continuation of THEA621.
Prerequisite: THEA621.

THEA 623  Stage Directing IIA 1
Continuation of THEA622, with an emphasis on techniques of script preparation and actor coaching.
Prerequisite: THEA622.

THEA 624  Stage Directing IIB 1
Continuation of THEA623.
Prerequisite: THEA623.

THEA 625  Stage Directing IIIA 1
Continuation of THEA624, with an emphasis on text analysis and actor coaching and an examination of styles and genres.
Prerequisite: THEA624.

THEA 626  Stage Directing IIIB 1
Continuation of THEA625.
Prerequisite: THEA625.

THEA 627  Stage Management for Directors 1
Techniques and methods of stage management from the directorial point of view.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Directing. May be repeated for up to 2 credit hours.

THEA 628  Set Design for Directors 1
Principles of scenic design from a directorial point of view.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Directing.

THEA 629  Costume Design for Directors 1
Principles of costume design from a directorial point of view.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Directing.

THEA 630  Production Budgeting 1
Principles of assessing production expenses, time and personnel requirements for the professional theatre.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Directing.

THEA 631  Rehearsal and Performance/Acting 1-3
Practical training in stage direction through serving as assistant director on faculty-directed productions.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Directing. May be repeated for up to ten credit hours.

THEA 632  Stage Management Organizational and Managerial Techniques IA 1
Development of organizational structuring and communication techniques for the administration of stage managerial projects.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Stage Management.

THEA 633  Stage Management Organizational and Managerial Techniques IB 1
Further development of organizational structuring and communication techniques for the administration of stage managerial projects.
Prerequisite: THEA632.

THEA 634  Stage Management Organizational and Managerial Techniques II A 1
Development of organizational structuring and communication techniques for the administration of stage managerial projects.
Prerequisite: THEA634.

THEA 635  Stage Management Organizational and Managerial Techniques IIIB 1
Further development of organizational structuring and communication techniques for the administration of stage managerial projects.
Prerequisite: THEA635.

THEA 636  Stage Management Organizational and Managerial Techniques IIIA 1
Further development of organizational structuring and communication techniques for the administration of stage managerial projects.
Prerequisite: THEA636.

THEA 637  Stage Management Organizational and Managerial Techniques IIIB 1
Further development of organizational structuring and communication techniques for the administration of stage managerial projects.
Prerequisite: THEA637.

THEA 638  Stage Management Production Skills IA 2
Development of stage managerial skills for organizing, preparing and fulfilling theatrical productions from inception through rehearsals and performance.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Stage Management.

THEA 639  Stage Management Production Skills IB 2
Further development of stage managerial skills for organizing, preparing and fulfilling theatrical productions from inception through rehearsals and performance.
Prerequisite: THEA639.

THEA 640  Stage Management Production Skills IIA 2
Development of stage managerial skills for organizing, preparing and fulfilling theatrical productions from inception through rehearsals and performance.
Prerequisite: THEA640.

THEA 641  Stage Management Production Skills IIIB 2
Further development of stage managerial skills for organizing, preparing and fulfilling theatrical productions from inception through rehearsals and performance.
Prerequisite: THEA641.

THEA 642  Stage Management Production Skills IIIA 2
Development of stage managerial skills for organizing, preparing and fulfilling theatrical productions from inception through rehearsals and performance.
Prerequisite: THEA642.

THEA 643  Stage Management Production Skills IIIB 2
Further development of stage managerial skills for organizing, preparing and fulfilling theatrical productions from inception through rehearsals and performance.
Prerequisite: THEA643.

THEA 644  Rehearsal and Performance/Stage Management 1-3
Practical instruction and assignments in the preparation, rehearsal and performance of theatrical productions.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Stage Management. May be repeated for up to 24 credits.

THEA 645  Stage Makeup 1
Study and practical work in all aspects of stage makeup. Emphasis on the use of materials, the effects of light and color and character analysis.
Restrictions: Requires enrollment in the Professional Theatre Training Program/Costume Production.
THEA 648 Costume Construction 1
Introductory course exploring the mechanics and technology of the art of costume making. Surveys all aspects of the costume maker's craft including practical work in the costume shop.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Construction

THEA 649 Costume Design 1
An approach to the designing of costumes for plays through an appreciation and understanding of the basic principles of design. Covers in-depth theoretical rendering technique, color theory and the elements of design.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Production

THEA 650 Historical Costume I 1
Examines theatrical costume as well as concurrent fashion trends from primitive ritual to Restoration theatrical works in the 17th century.

THEA 651 Historical Costume II 1
A study of costume and theatrical costume history from 1670 to the present. Emphasis on sociological changes in patterns of fashion behavior and recreating that attitude for stage

THEA 652 Tailoring I 1
Construction of stage costumes: intermediate and advanced draping and tailoring techniques. Textiles survey, cutting, fitting and alterations.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Production

THEA 653 Tailoring II 1
Construction of stage costumes: advanced tailoring techniques and practical application of skills in costume shop.

PREREQ: THEA652

THEA 654 Patternmaking I 1
Basic pattern making, includes drafting of basic slopers, sleeves, collars, pants, etc. Emphasis on theatrical costumes.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Production

THEA 655 Patternmaking II 1
Advanced pattern drafting of period patterns, coats, suits and menswear for the theatre.

PREREQ: THEA654

THEA 656 Patternmaking III 1
Continuation of THEA655. Emphasis on Renaissance and Restoration costumes.

PREREQ: THEA655

THEA 657 Patternmaking IV 1
Continuation of THEA656. Emphasis on 19th-century men's and women's costumes.

PREREQ: THEA656

THEA 658 Costume Crafts I 1
Study and practical work in dyeing and painting for costumes.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Production

THEA 659 Costume Crafts II 1
Advanced projects in costume accessory construction. Emphasis on millinery, hat blocking, wig making and new techniques in related areas.

PREREQ: THEA658

THEA 660 Costume Crafts III 1
Study and practical work in three-dimensional construction techniques to include mask making, armor, molding and leatherwork and sculptural foam animals.

PREREQ: THEA659

THEA 661 Draping I 1
Advanced study in construction of stage costumes with an emphasis on draping.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Production

THEA 662 Draping II 1
Emphasis on advanced draping problems with detailed period and contemporary costumes.

PREREQ: THEA661

THEA 663 Draping III 1
Continuation of THEA662 with emphasis on Renaissance and Restoration costume.

PREREQ: THEA662

THEA 664 Internship in Professional Theatre 1-9
Engagement with professional theatre in individual discipline area.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program. May be repeated for up to 18 credit hours

THEA 665 Theatre Literacy 2
Discussion, research, and practicum in theatre terminology, literature and history.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program. May be repeated for up to 12 credit hours

THEA 666 Research 1-6

THEA 669 Draping IV 1
Continuation of THEA663 with emphasis on 18th and 19th-century costume.

PREREQ: THEA663

THEA 670 Costume Shop Management 1
Problems and techniques of costume shop management, personnel organization, equipment, inventory and supply control, and financial organization and management.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Production

THEA 671 Applied Costume Shop Management 1
Practical application of skills learned in THEA670.

PREREQ: THEA670

THEA 672 Production Preparation and Performance 1-4
Practical instruction and assignments in the preparation, construction and mounting of costumes and costume accessories for theatrical performances.

RESTRICTIONS: May be repeated for up to 22 credits

THEA 674 Scenery and Properties Production I 1
Continuation of THEA674, with emphasis on scenic construction and properties.

PREREQ: THEA674

THEA 675 Scenery and Properties Production II 1
Continuation of THEA675, with emphasis on scenic design and properties.

PREREQ: THEA675

THEA 677 Scenery and Properties Production III 1
Continuation of THEA676, with emphasis on furniture construction and finished carpentry.

PREREQ: THEA676

THEA 678 Scenery and Properties Production IV 1
Continuation of THEA677, with emphasis on scenic shifting and rigging techniques, upholstery, and casting and molding techniques.

PREREQ: THEA677

THEA 679 Scenery and Properties Production V 1
Continuation of THEA678, with emphasis on pneumatics, hydraulics and motorized rigging in addition to pyrotechnique and special effects.

PREREQ: THEA678

THEA 680 Electrics and Audio Production I 1
Development of skills necessary for producing lighting and sound for theatre productions. Emphasis on basic stage lighting practice and electrical theory.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Technical Production

THEA 681 Electrics and Audio Production II 1
Continuation of THEA680, with emphasis on basic theatre sound practice and building production sound tapes.

PREREQ: THEA680

THEA 682 Electrics and Audio Production III 1
Continuation of THEA681, with emphasis on electrical control devices and techniques, studio and field recording techniques, and mixing and editing techniques.

PREREQ: THEA681

THEA 683 Electrics and Audio Production IV 1
Continuation of THEA682, with emphasis on electrical distribution systems and sound reinforcement techniques.

PREREQ: THEA682

THEA 684 Electrics and Audio Production V 1
Continuation of THEA683, with emphasis on maintenance and repair of electrical and audio equipment.

PREREQ: THEA683

THEA 685 Theatre Literacy 2
Discussion, research, and practicum in theatre terminology, literature and history.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program. May be repeated for up to 12 credit hours

THEA 668 Research 1-6

THEA 670 Costume Shop Management 1
Problems and techniques of costume shop management, personnel organization, equipment, inventory and supply control, and financial organization and management.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Costume Production

THEA 671 Applied Costume Shop Management 1
Practical application of skills learned in THEA670.

PREREQ: THEA670

THEA 672 Production Preparation and Performance 1-4
Practical instruction and assignments in the preparation, construction and mounting of costumes and costume accessories for theatrical performances.

RESTRICTIONS: May be repeated for up to 22 credits

THEA 674 Scenery and Properties Production I 1
Continuation of THEA674, with emphasis on scenic construction and properties.

PREREQ: THEA674

THEA 675 Scenery and Properties Production II 1
Continuation of THEA675, with emphasis on scenic design and properties.

PREREQ: THEA675

THEA 677 Scenery and Properties Production III 1
Continuation of THEA676, with emphasis on furniture construction and finished carpentry.

PREREQ: THEA676

THEA 678 Scenery and Properties Production IV 1
Continuation of THEA677, with emphasis on scenic shifting and rigging techniques, upholstery, and casting and molding techniques.

PREREQ: THEA677

THEA 679 Scenery and Properties Production V 1
Continuation of THEA678, with emphasis on pneumatics, hydraulics and motorized rigging in addition to pyrotechnique and special effects.

PREREQ: THEA678

THEA 680 Electrics and Audio Production I 1
Development of skills necessary for producing lighting and sound for theatre productions. Emphasis on basic stage lighting practice and electrical theory.

RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Technical Production

THEA 681 Electrics and Audio Production II 1
Continuation of THEA680, with emphasis on basic theatre sound practice and building production sound tapes.

PREREQ: THEA680

THEA 682 Electrics and Audio Production III 1
Continuation of THEA681, with emphasis on electrical control devices and techniques, studio and field recording techniques, and mixing and editing techniques.

PREREQ: THEA681

THEA 683 Electrics and Audio Production IV 1
Continuation of THEA682, with emphasis on electrical distribution systems and sound reinforcement techniques.

PREREQ: THEA682

THEA 684 Electrics and Audio Production V 1
Continuation of THEA683, with emphasis on maintenance and repair of electrical and audio equipment.

PREREQ: THEA683

UNIVERSITY OF DELAWARE 1995-96 CATALOG / PAGE 355
THEA 685 ELECTRICS AND AUDIO PRODUCTION III 1
Continuation of THEA684, with emphasis on advanced mixing and editing techniques
and advanced electrical control techniques
PREREQ: THEA684

THEA 686 PAINTING, GRAPHICS AND DESIGN FOR PRODUCTION IA 1
Development of skills in theatre graphic communications, scenic painting and design the-
ory. Emphasis on basic drafting techniques for lighting and scenic productions
PREREQ: THEA686

THEA 688 PAINTING, GRAPHICS AND DESIGN FOR PRODUCTION II 1
Continuation of THEA687, with emphasis on advanced work in perspective, color theory
in painting and scene design theory
PREREQ: THEA687

THEA 689 PAINTING, GRAPHICS AND DESIGN FOR PRODUCTION IIB 1
Continuation of THEA689, with emphasis on advanced drafting, true shape analysis,
basic lighting design theory and process, and reproducing painter's elevations
PREREQ: THEA688

THEA 690 PAINTING, GRAPHICS AND DESIGN FOR PRODUCTION IIIA 1
Continuation of THEA689, with emphasis on advanced work in scene painting and
drafting as well as sound design theory
PREREQ: THEA689

THEA 691 PAINTING, GRAPHICS AND DESIGN FOR PRODUCTION IIIB 1
Continuation of THEA690, with emphasis on advanced work in scene painting and
drafting
PREREQ: THEA690

THEA 692 PRODUCTION PREPARATION AND PERFORMANCE/TECHNICAL 1-4
Practical instruction and assignments in the technical preparation and production of
Professional Theatre Training Program public performances. Assignments include Master
Carpenter, Master Electrician, Property Master, Sound Technician, Scenic Artist and
Technical Director
RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program/Te-
chnical Production. May be repeated for up to 20 credit hours

THEA 693 PRODUCTION COORDINATION 1
Development of management and communication techniques for effective interaction
among stage management, costume production and technical production areas of theatre
RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program

THEA 694 CAREER PREPARATION AND DEVELOPMENT 1
Development and organization of portfolio, resume and interview techniques in prepara-
tion for careers in stage management, costume production and technical production
RESTRICTIONS: Requires enrollment in the Professional Theatre Training Program

UNIVERSITY COURSE

UNIV 120 UNIVERSITY FORUM 1 PF
Course taught in conjunction with the University Forum Lecture Series. Students attend all
Forum lectures (approximately ten), read selected texts and/or journal essays designed to
supplement the lecture series, and take a final exam

UNIV 320 CONTEMPORARY ISSUES FOR RESIDENT ASSISTANTS 1
Introduces new Resident Assistants to issues affecting college students. All topics covered in
the course focus on the needs of the new resident assistant in the Office of Housing and
Residence Life
RESTRICTIONS: Must be a resident assistant

UNIV 330 DELL CENTRAL YEAR ABROAD 0 NR

UNIV 350 NATIONAL STUDENT EXCHANGE PROGRAM 0 NR

UNIV 351 SEMESTER IN COPENHAGEN 0 NR

UNIV 354 SEMESTER IN LONDON 0 NR

UNIV 368 HONORS WORKSHOP: ADVANCED TOPICS 1
Multidisciplinary seminar with emphasis on discussion of state-of-the-art research topics by
Accounting/Business/Economics faculty. New topic each semester. Includes assessment of
the research approach, substantive findings, related research and possible extensions
PREREQ: BUAD301 and BUAD311
RESTRICTIONS: Requires GPA of 3.0 or higher and Junior or Senior status

UNIV 369 HONORS: UNDERGRADUATE RESEARCH SUSTAINING 0 PF
Research apprenticeship with faculty mentor
RESTRICTIONS: Limited to those appointed as Undergraduate Research Scholars in the
Undergraduate Research Program. Must have approval of the Coordinator of Under-
graduate Research, University Honors Program

UNIV 401 SENIOR THESIS 2-4
Senior thesis for students working toward a degree with distinction
RESTRICTIONS: Total credit for UNIV401 and UNIV402 not to exceed six

UNIV 402 SENIOR THESIS 2-4
Continuation of UNIV401
RESTRICTIONS: Total credit for UNIV401 and UNIV402 not to exceed six

UNIV 490 HONORS TUTORIAL: HUMANITIES 3
Designated faculty direct the studies of up to three students per semester. Reading of
classical works in the humanities described. Group as well as individual discussions
RESTRICTIONS: Requires 3.4 GPA, Sophomore standing or above, and permission of the
Honor's Program

UNIV 491 HONORS TUTORIAL: NATURAL/SOCIAL SCIENCE 3
Designated faculty direct the studies of up to three students per semester. Reading of
classical works in the social and natural sciences described. Group as well as indepen-
dent discussions
RESTRICTIONS: Requires 3.4 GPA, Sophomore standing or above and permission of the
Honors Program

UNIV 495 HONORS SEMINAR 3
Topics vary, usually interdisciplinary
RESTRICTIONS: Requires 3.0 GPA, Junior status or above, and permission of the Honors
Program. May be repeated for credit with a different topic and instructor

UNIV 500 LEAVE OF ABSENCE 0 NR

UNIV 899 MASTER'S SUSTAINING 0 NR

UNIV 999 PH.D. SUSTAINING 0 NR

URBAN AFFAIRS

URAF 605 TOPICS IN URBAN AFFAIRS 3
Focuses on selected topics in urban affairs such as urban politics and government, urban
education and neighborhood analysis
RESTRICTIONS: May be repeated for up to nine credits when topics vary

URAF 606 LOCAL ECONOMIC DEVELOPMENT: POLICY AND PRACTICE 3
Examines theory and contemporary practice for promoting the economic development of
local communities. Reviews alternative ways of understanding the dynamics of local eco-
nomic development and devising strategies that will benefit community residents

URAF 607 COMMUNITY ANALYSIS AND DEVELOPMENT SEMINAR 3
Examines the complex ways in which the concepts of community analysis and develop-
ment are used and understood. Students connect the concepts to issues, problems or poli-
cy alternatives affecting local communities by participating in applied projects

URAF 610 URBAN LAND USE PLANNING AND ADMINISTRATION 3
Interaction of political, economic and social forces in the planning and land use control
process. Emphasis on planning agency administration and current policies impacting the
planning process, including recently enacted environmental and community development
legislation. Concern for the role of the planner, the planning agency and the planning
function as it relates to economic and community development

URAF 611 HISTORY OF THEORIES IN MATERIAL CULTURE 3
See EAMC 655 for course description

URAF 612 URBAN HOUSING POLICY AND ADMINISTRATION 3
Problems associated with providing adequate and affordable housing in the U.S. The
structure and dynamics of the housing market; demand and supply factors, market fail-
ure, financing methods; and federal, state and local public policy affecting housing,
including taxation, regulation, subsidy programs, and land use controls

URAF 613 PLANNING THEORY AND URBAN POLICY 3
Provides an overview of the development and current conceptual, normative and method-
ological issues in planning theory as applied to urban regions

URAF 614 THE AMERICAN SUBURB 3
An examination of the historical and geographical origins of the American suburb and
its role in metropolitan development and larger society. Includes the evolution of the
streetcar and automobile suburbs with special emphasis on the post World War II subur-
ban boom and contemporary post-suburban trends. May be cross-listed with GEOG614
and/or HST614
URAF 615 URBAN AND REGIONAL PLANNING 3
Provides an introduction to urban planning. Focuses mainly on U.S., but some comparisons made with Britain and Canada. Issues covered include zoning, urban growth management, land policies, regional policies and urban policy. May be cross-listed with GEOG 615.

URAF 616 URBAN COMMUNITY ORGANIZATION SEMINAR 3
Studies the varied community organization concepts, methods and models, and analyzes the organizational structure and service delivery systems of selected social agencies that sponsor community organization and social action activities.

URAF 618 HUMAN SERVICE SYSTEMS: POLICY, PRACTICES, ADMINISTRATION 3
Centers on operational practices and administration of human service systems. Includes an analysis of human service systems concepts and policies, delivery practices and administration. Human service systems dimensions reviewed in relation to the rising influence of organized human service professional (practitioner) groups and organized human service consumer groups.

URAF 624 SEMINAR IN CRIMINAL JUSTICE 3
Discussion and evaluation of institutional components of criminal justice systems. Topics include police, judicial and correctional systems.

URAF 625 ENERGY POLICY AND ADMINISTRATION 3
See POSC 624 for course description.

URAF 628 ISSUES IN LAND USE AND ENVIRONMENTAL PLANNING 3
See GEOG 628 for course description.

URAF 629 SEMINAR IN HISTORIC PRESERVATION 3
Survey of historic preservation and management of cultural resources examining cultural contexts and public policy. Covers techniques of preservation, legal and legislative basis of preservation programs, with particular attention to National Register of Historic Places. May be cross-listed with ARTH 628, HIST 652 and/or MSST 629.

URAF 630 HISTORIC PRESERVATION STUDIO 3
Upper level field research seminar concentrating on developing graphic, photographic and narrative skills for architectural documentation. Involves classroom and field sessions. May be cross-listed with ARTH 634 and/or MSST 630.

URAF 632 MAKING THE AMERICAN CITY 3
Advanced research and reading seminar on the material organization of early American cities. Examination of historical and cultural issues related to housing, consumerism, gender, ethnicity, craft, poverty and wealth as a means to interpreting the city as artifact and symbolic setting. Includes field trips to cities in the region. Students will work with primary sources including archaeological materials, architecture and documentary evidence. May be cross-listed with ARTH 632 and/or HIST 632.

URAF 634 HOUSING FINANCE AND DEVELOPMENT 3
Fundamentals of real estate and housing finance. Various methods available to finance the development of real estate, financial instruments and institutions involved in each phase. Relevant tax laws and liability tax consequences. Development of public policy as it affects the availability of housing credit. The function, operation and regulation of financial and related institutions, including FHA, FNMA, GNMA, FHBB and FHMMC.

URAF 635 THE EVOLUTION OF THE AMERICAN URBAN LANDSCAPE 3
Reading and research seminar on the evolution of the American urban landscape from approximately 1850 to the present. Examination of historical, cultural, and geographic issues and processes related to industrialism and capitalism, technology, gender and ethnicity, housing, poverty and wealth as means of understanding the formation of the historic American urban landscape. Includes field trips to cities in the region. May be cross-listed with ARTH 632 and/or HIST 632.

URAF 636 RESEARCH TOPICS IN HISTORIC PRESERVATION 3
Seminar that addresses a specific research issue within historic preservation including hypothesis construction, design of research methodology and evaluation of results. Emphasis on the use of primary sources and application of data-base techniques. May be cross-listed with ARTH 622, GEOG 635 and/or HIST 636.

URAF 637 PERSONNEL SELECTION AND EVALUATION 3
Review of the varied legal issues, federal agency guidelines, court decisions and research-psychometric principles that influence the practice of employee selection and evaluation.

URAF 640 INTERNATIONAL AND DEVELOPMENT ADMINISTRATION 3
See POSC 640 for course description.

URAF 645 PUBLIC SECTOR LABOR RELATIONS 3
An overview of employer-employee relations in state and local governments. Emphasis on the economic and political environment, institutional responses to collective bargaining, and economic and political outcomes of the bargaining process. Some emphasis on development of skills in grievance handling and arbitration.

URAF 647 PHILOSOPHY OF TECHNOLOGY 3
See HIST 654 for course description.

URAF 648 VERNACULAR ARCHITECTURE 3
See HIST 654 for course description.

URAF 655 SOCIAL ENVIRONMENT AND HEALTH 3
Examines the relation between socioeconomic structure and health as a descriptive and conceptual framework for health policy analysis at national and local levels. Views relations between health levels and socioeconomic structure, and changes in socioeconomic structure from spatial and historical perspectives. Dimensions of socioeconomic structure include income, education, occupation, industry, employment and ethnicity.

URAF 659 TOPICS IN PUBLIC ADMINISTRATION 3
Focuses on micro and macro Public Administration issues, i.e., privatization, health care cost containment, flex benefits packages, ethics, organizational productivity, concession and productivity bargaining. May be cross-listed with POSC 659.

URAF 660 SEMINAR IN URBAN MANAGEMENT 3
Provides a theoretical and conceptual orientation to urban management, perspectives on the development of urban management as a profession, a description of the intergovernmental, sociopolitical and economic environment of urban management, and analyses of current issues in the area.

URAF 662 MUNICIPAL MANAGEMENT 3
Surveys the major operational functions of local government with emphasis on the practical elements and problems in the management of these functions. Functions include solid waste disposal, economic development, planning and land use control, water supply, police and emergency services, and cultural, social and recreational services. Emphasis on innovative approaches to the provision of services.

URAF 664 CASE STUDIES IN STATE AND LOCAL MANAGEMENT 3
Uses analyses of cases in state and local decision making to enable students to improve their communication, decision making and management skills. Cases deal with a broad range of subject areas (e.g., health and recreation) and problems (e.g., facility location and personnel).

URAF 678 ADMIRALTY AND MARITIME LAW 3
See HAST 678 for course description.

URAF 681 METROPOLITAN INFRASTRUCTURE AND TRANSPORTATION 3
Movement is essential for metropolitan area performance. Roads and water systems are infrastructure components that impact on where houses, stores, and jobs are located; which in turn links into movement, pollution and congestion. This course treats infrastructure decision making using approaches from public economics. May be cross-listed with POSC 681.

URAF 683 REGIONAL POLICY ANALYSIS 3
Why do some regions cities grow and change? Course presents theories of regional development, methods of inter-regional analysis, as well as internal-regional topics such as land use, migration, city-surburban shifts, and neighborhoods. Various kinds of regional policies are analyzed. May be cross-listed with POSC 683.

URAF 685 PERSONNEL AND HUMAN RESOURCE ISSUES: CURRENT TOPICS 3
Analysis of selected policies, practices, and issues currently important in the field of public personnel human resources. Topics vary depending on instructor (illustrations: EEO developments, "Glass Ceiling" issues, ADA, benefits/cost containment, labor negotiation trends, the changing workforce and workplace). Seminar with individually-tailored projects. May be cross-listed with POSC 685.

URAF 687 PERSONNEL AND HUMAN RESOURCE ISSUES: CURRENT TOPICS 3
Analysis of selected policies, practices, and issues currently important in the field of public personnel human resources. Topics vary depending on instructor (illustrations: EEO developments, "Glass Ceiling" issues, ADA, benefits/cost containment, labor negotiation trends, the changing workforce and workplace). Seminar with individually-tailored projects. May be cross-listed with POSC 685.

URAF 688 TOPICS IN STATE AND LOCAL MANAGEMENT 3
Focuses on selected topics in state and local management and policymaking. May include in-depth exploration of management processes/instruments (e.g., budgeting) and/or contemporary policy issues (e.g., educational reform, environmental crises) within state and local government with which public managers must contend. May be cross-listed with POSC 688.

URAF 800 RESEARCH DESIGN AND METHODOLOGIES 3
Provides skills and examines issues in research design, data acquisition and data analysis in urban affairs.

URAF 801 PROCESSES OF SOCIAL INQUIRY 3
Explores the philosophical underpinnings of social inquiry and the issues surrounding the development and use of social research for urban and policy analysis.

URAF 803 SEMINAR: PUBLIC ADMINISTRATION 3
See POSC 803 for course description.

URAF 804 PROGRAM EVALUATION 3
Survey of theory and methods for the evaluation of human service programs. When possible, students participate in actual evaluative research.

URAF 806 SURVEY RESEARCH 3
Methods and procedures for the design, administration and analysis of sample surveys.
URAF 810  POLITICAL ECONOMY OF THE ENVIRONMENT    3
Examines a wide range of theories on the social, political and economic meanings and
values attributed to nature. Particular attention is paid to differences in perspective on the
relation of human beings to the environment. Protection, wise use and preservation poli-
cy goals are critically evaluated and issues of environmental justice are considered

URAF 813  DATA BASE AND DECISION SUPPORT SYSTEMS    3
Focuses on the interface between the decision maker and the information system that
supports those individuals. Topics include system design, methods of retrieval, graphics
and related hardware and software issues

URAF 814  COMPUTER IN PUBLIC MANAGEMENT    3
Provides a comprehensive overview of data processing and systems development as
seen from the viewpoint of the manager. Presents concepts in hardware, software and
data communications followed by sessions on the production of software, acquisition of
software and hardware, data base management systems, electronic mail and decision
support systems

URAF 815  PUBLIC MANAGEMENT STATISTICS    3
Emphasis on the practical knowledge of statistical techniques and their use in the man-
gagement of data (or data systems) in the public sector. Discussion and appraisal of vari-
ous statistical tools from a theoretical standpoint, and application of statistical methods
and procedures in a laboratory situation for the collection, organization and analysis of
statistical information in public management research. May be cross-listed with POSC815

URAF 816  ADVANCED SOCIAL STATISTICS    3
See POSC816 for course description

URAF 817  PUBLIC INVESTMENT POLICY    3
Focuses on the means by which government activities can be financed. Topics are tax vs
debt financing; use of appropriate instruments and policies, e.g., types of bonds; and
forces that influence implementation, e.g., the design of instruments, fiscal capacity, rat-
ing system and market behavior. May be cross-listed with POSC817

URAF 818  ENVIRONMENTAL POLICY AND ADMINISTRATION    3
See POSC818 for course description

URAF 819  MANAGEMENT DECISION MAKING    3
Focuses on analytical decision making within public organizations. Examines processes
by which decisions can be made and evaluated. Emphasis on conceptual factors that
provide a guide to decisions and evaluations of decision methodologies, e.g., systems
analysis, cost-benefit analysis, PERT/critical path method, decision trees and time series
May be cross-listed with POSC819
PREREQ: Lotus 123

URAF 821  PROSEMINAR: TECHNOLOGY, ENVIRONMENT AND SOCIETY    3
Examines institutional, political and economic factors influencing the role of technology
in urban society. Discusses public policies directly and indirectly related to technology
development, diffusion and control. Presents a wide range of theoretical and policy per-
spectives, including sociology, political science, economics, urban planning, environ-
mental studies, and history and philosophy of technology. May be cross-listed with POSC821

URAF 822  PROSEMINAR IN PLANNING AND GOVERNANCE    3
Deals with policy and research issues concerning the making, administering and out-
comes of public policies affecting urban populations and with how urban planning and
governance processes are influenced by the interaction of the public, private and third
sectors at the local, regional, national and international scales

URAF 823  PROSEMINAR IN SOCIAL POLICY ANALYSIS AND EVALUATION    3
Introduces primary theoretical frameworks, policy issues and research concerns of this
field. Topics include the nature of social policy, means to evaluate social policy, the role
of research in the determination of social policy and current research issues in social pol-
icy analysis and evaluation

URAF 825  COMPARATIVE PUBLIC ADMINISTRATION    3
See POSC825 for course description

URAF 826  MULTIVARIATE STATISTICAL ANALYSIS    3
Provides an in-depth understanding of advanced statistical methods with an applied
focus on estimation, inferences, and prediction of models. Major topics are: multiple
regression, functional forms, types of data, regression diagnostics (collinearity, serial cor-
relation, heteroscedasticity and simultaneity), different estimators, comparison of models,
dummy dependent variables, dynamic models and lags, and multi-equation models
PREREQ: URAF815
RESTRICTIONS: A statistics course that introduces regression analysis

URAF 827  PROGRAM AND PROJECT ANALYSIS    3
Examines how public sector decision makers evaluate feasibility of government programs
and projects. Governmental and societal costs incurred and benefits that would result if
public programs or capital projects were undertaken in urban areas. Considers how
issues of time, program design, urban activities and structures, and potential effective-
ness should be handled. Considers the equity of government programs and their poten-
tial impact in the future

URAF 828  URBAN THEORY & POLICY ALTERNATIVES    3
Examines a variety of theories of the city and their ability to explain the contemporary
conditions and problems of cities. Critically examines the role of analysis in the forma-
tion of urban policy

URAF 829  ADVANCED PUBLIC FINANCE    3
Advanced course in theory and application of financing, spending, and regulatory poli-
cy instruments of state and local governments. Topics include efficiency, equity and
impacts of different types of taxation, user charges, expenditure approaches (transfers/subsidies), and regulation alternatives. May be cross-listed with POSC829

URAF 833  PUBLIC FINANCE AND FISCAL MANAGEMENT    3
The theory and practice of public finance and public sector economics as they relate to
the financial management of state and local governments in the context of a federal sys-
tem. General topics include revenues, expenditures, intergovernmental fiscal relation-
ships and selected techniques of public resource managements such as budgeting and debt management. May be cross-listed with POSC839.
PREREQ: URAF834

URAF 834  PUBLIC ECONOMICS    3
Develops the framework and concepts of microeconomics for the purpose of applying
them to the analysis of urban and public sector policies and issues from such topical
areas as education, transportation, housing, energy, ecology, public health, commu-

URAF 835  ORGANIZATION THEORY AND ADMINISTRATION    3
See POSC835 for course description

URAF 837  PUBLIC SECTOR HUMAN RESOURCES MANAGEMENT    3
Personnel management topics of importance to the manager in the public agency setting;
public employee labor relations, grievance and dispute settlement, merit systems, pay
and classification systems, affirmative action, modern selection techniques, and the role
of the personnel specialist in designing and implementing employee and organizational
development programs. May be cross-listed with POSC837.

URAF 838  PUBLIC POLICY ANALYSIS    3
See POSC838 for course description

URAF 840  INTRODUCTION TO THE NONPROFIT SECTOR    3
Examines institutional, political and economic factors influencing the role of technology
in urban society. Discusses public policies directly and indirectly related to technology
development, diffusion and control. Presents a wide range of theoretical and policy per-
spectives, including sociology, political science, economics, urban planning, environ-
mental studies, and history and philosophy of technology. May be cross-listed with POSC821

URAF 841  ISSUES IN THE MANAGEMENT AND GOVERNANCE OF NONPROFIT ORGANIZATIONS    3
Provides an introduction to the leadership and management issues facing nonprofit exec-
atives. Topics include board relationships and voluntary leadership, financial manage-
ment and budgeting, human resource management (organizational change, managing
diversity and career development), organizational culture and stakeholder relationships

URAF 842  STRATEGIC PLANNING FOR NONPROFIT ORGANIZATIONS    3
Provides students with the skills and knowledge required for carrying out strategic plan-
ing in private nonprofit and public agencies. Focuses on the organizational environ-
ments in which planning takes place, examines the theories which underlie planning in
general and strategic planning in particular and presents a usable model for strategic
planning

URAF 845  INTRODUCTION TO URBAN AFFAIRS AND PUBLIC POLICY    3
Consideration of issues related to the development of urban affairs and public policy as
an area of inquiry

URAF 850  URBAN AFFAIRS PRACTicum    1-6
Applied projects that generally draw upon organization or public agency resources. Pro-
jects carried out with faculty supervision and may involve one or more students or stu-
dent-faculty teams

URAF 860  INTERNSHIP SEMINAR    1
Assists student in making decisions about specialization and internship objectives related
to the Masters in Public Administration program and identifies related skills. Develops
short and long-term career skills

URAF 863  DOCTORAL RESEARCH PAPER    3
Requirement of the doctoral program, the doctoral research paper is prepared prior to the
dissertation proposal.

URAF 864  INTERNSHIP FIELDWORK    2
Three-month (or equivalent) fieldwork completed along with seminars, performance eval-
uation and career reflection paper

URAF 868  RESEARCH    1-6

URAF 869  MASTER'S THESIS    1-6

URAF 870  READINGS    1-6
UR AF 872 Analytical Paper 3-6
A requirement of the M.A. and M.P.A. program. The paper demonstrates the student’s ability to analyze a particular policy or administrative problem and develop an appropriate response.

UR AF 964 Pre-Candidacy Study 3-12 PF
Research and readings in preparation of dissertation topic and/or qualifying examinations for doctoral students before admission to candidacy but after completion of all required coursework.
RESTRICTIONS: Not open to students who have been admitted to candidacy

UR AF 969 Doctoral Dissertation 1-12 PF

WOMEN’S STUDIES

WOMS 100 Philosophies of Life 3
See PHIL 100 for course description

WOMS 201 Introduction to Women’s Studies 3
Study of the causes and conditions determining women’s status in society, as evidenced in institutional structures and personal relations between men and women. Taught from multidisciplinary perspectives

WOMS 202 Introduction to International Women’s Studies 3
Examines how public policies and traditional customs affect women’s lives around the world. Focuses on the effects of political and economic status, social norms and institutional structures on women’s conditions in family life, education and employment

WOMS 203 Contemporary Moral Problems 3
See PHIL 202 for course description

WOMS 204 Gender and Knowledge 3
Women have been largely absent from the historical record and from the traditional liberal arts curriculum. Introduces, via guest lecturers, the new scholarship on women in disciplines from English literature to biology to the social sciences

WOMS 205 Women in the Arts and Humanities 3
Interdisciplinary survey of women’s contributions to the arts and humanities, also including literary/artistic images of women, contributions of minority and non-Western women, and study of the relationship between women’s social-economic roles and cultural expressions

WOMS 206 Women and Work 3
Covers a variety of topics including women in traditional and non-traditional occupations, gender-based discrimination (wage inequities, sexual harassment, exclusionary policies), the contributions of women to the economy and the role of law in shaping conditions for women in the workplace. May be cross-listed with SOC 206

WOMS 207 Women, Power and Success 3
Research, theory and possible strategies related to expanding the horizons in achieving “power” and “success” in women’s lives. Topics include socializing girls to be successful, evaluating personal strengths and goals, and a new model of women and power

WOMS 208 Introduction to Drama 3
See ENGL 208 for course description

WOMS 209 Introduction to the Novel 3
See ENGL 209 for course description

WOMS 210 Women and Religion 3
Examines the impact of Near Eastern and Judeo-Christian scriptures on women in the family and society, especially focusing on women’s roles as mystics and leaders, within and outside of institutional religion. Also covers recent feminist approaches to religion. May be cross-listed with PHIL 210

WOMS 211 Men, Conflict and Social Change 3
Examination of male roles and images in society, utilizing interdisciplinary social science perspectives. Topics include the family, work, military, violence and the implications of feminism for men. Issue-oriented. May be cross-listed with SOC 211

WOMS 212 Motherhood in Culture and Politics 3
Examines contemporary cultural and political issues related to motherhood and mothering experience, including definitions and cultural significance of motherhood, experiences of childbirth, effects of new reproductive technologies, surrogate mothering and “maternal thinking,” and efforts to avoid motherhood through contraception and abortion and related legal controversies

WOMS 213 Men and Women in American Society 3
See SOC 213 for course description

WOMS 214 Literature and Gender 3
See ENGL 214 for course description

WOMS 216 Introduction to Feminist Theory 3
See PHIL 216 for course description

WOMS 222 Language and Gender 3
SeeLING 222 for course description

WOMS 233 Women, Biology and Medicine 3
See CSC 233 for course description

WOMS 240 Women and Violence 3
Analyzes a variety of issues and topics relating to women and violence, including rape, domestic violence, images of women in popular culture, incest and child abuse, pornography, sexual harassment and women who use violence. Presents descriptive materials, sociological analysis and strategies for change

WOMS 290 History of Women and Education 3
See EDST 290 for course description

WOMS 291 Women’s History through Film 1
Explores women’s historical experiences through the medium of film. Students will view and discuss a variety of documentary films on women and read materials related to topics covered in the films. Films will deal with historical and contemporary issues in the United States and internationally. May be cross-listed with HIST 291

WOMS 297 Research in Lesbian, Gay and Bisexual Studies 1 PF
Lectures by social science, arts and humanities scholars and researchers on new issues raised by gays, lesbians and bisexuals, their movements and their history. May be cross-listed with BAMS 298 and/or SOC 298
RESTRICTIONS: May be repeated for credit when topics vary

WOMS 299 Research on Women 1 PF
Interdisciplinary lectures in which faculty, staff and advanced students share research literature on their own research on women. Lectures cover issues in anthropology, sociology, political theory, psychology, philosophy, literature, history, theology, ethnic studies, music, art, mathematics, education, health, etc.

WOMS 300 Women in American History 3
See HIST 300 for course description

WOMS 305 The Evolution of Human Sex Roles and Reproduction 3
See ANTH 305 for course description

WOMS 318 Studies in Film 3
See ENGL 318 for course description

WOMS 320 Varying Authors and Genres 3
See FLIT 320 for course description

WOMS 323 Introduction to Women and Politics 3
See POSC 323 for course description

WOMS 324 Topics: French Literature in Translation 3
See FLIT 324 for course description

WOMS 325 Topics: German Literature in Translation 3
See FLIT 325 for course description

WOMS 326 Topics: Hispanic Literature in Translation 3
See FLIT 326 for course description

WOMS 328 Topics: Japanese Literature in Translation 3
See FLIT 328 for course description

WOMS 330 Varying Authors, Themes and Movements 3
See FLIT 330 for course description

WOMS 333 Psychology of Women 3
See PSY 333 for course description

WOMS 335 Women and Mental Health 3
Focuses on sociocultural dynamics influencing the psychological development of women, prevalent mental disorders among women, and the common types of psychotherapeutic treatment of women

WOMS 338 Topics in Philosophy and Gender 3
See PHIL 338 for course description

WOMS 350 Women and Criminal Justice 3
See CRJU 350 for course description

WOMS 353 Twentieth Century British Literature 3
See ENGL 353 for course description.

UNIVERSITY OF DELAWARE 1995-96 CATALOG / PAGE 359
WOMS 363 Women in Cross-Cultural Perspective 3
Social realities of women within the cultures of Asia, Africa and Latin American societies
How institutions such as motherhood, the family, sexuality and work structure women's
lives within the dominant social ideologies  May be cross-listed with ANTH363

WOMS 366 Independent Study 1-6

WOMS 380 Women Writers 3
See ENGL380 for course description

WOMS 381 Women in Literature 3
See ENGL381 for course description

WOMS 382 Studies in Multicultural Literature in English 3
See ENGL382 for course description

WOMS 389 Topics: Women and Health Issues 3
Varying special topics related to women's health. Topics may include, but are not limited
to: the relationship between women, health and development; theoretical contributions of
feminism to thinking about relationship between gender and health; women's health condi-
tions in various parts of the world  May be cross-listed with CSCC389 and/or
PHIL389
RESTRICTIONS: May be repeated for credit when topics vary

WOMS 390 Honors Colloquium 3
See ARSC390 for course description  May be cross-listed with ANTH390, IFST390 and/or
PHIL390

WOMS 392 Honors Colloquium 3
See ARSC392 for course description  May be cross-listed with PHIL392

WOMS 407 Sociology of Sex and Gender 3
See SOCI407 for course description
RESTRICTIONS: See SOCI407 for restrictions

WOMS 409 Varieties of Modern Feminism 3
See HIST409 for course description

WOMS 413 Problems in American Government 3
See POSC413 for course description

WOMS 415 Race, Class and Gender 3
See SOCI415 for course description

WOMS 430 Teaching Family Life 3
See IFST430 for course description

WOMS 436 Politics and Literature 3
See POSC436 for course description

WOMS 460 Women in International Development 3
See SOCI460 for course description

WOMS 465 Studies in Literature Genres, Types and Movements 3
See ENGL465 for course description

WOMS 466 Independent Study 1-6

WOMS 470 Seminar 3
Seminar course on special topics
PREREQ: WOMS201

WOMS 471 Advanced Philosophical Topics 3
See PHIL470 for course description

WOMS 473 Studies in Early Modern European History 3
See HIST473 for course description

WOMS 475 Topics 1-4
Cross-listed on a term basis with courses in other areas of instruction  Course title,
description, credit hours and grade type same as cross-listed course  May be repeated
for credit when courses cross-listed with it are different

WOMS 480 Seminar 3
See ENGL480 for course description

WOMS 484 Women in Sports 3
See PHED485 for course description

WOMS 498 Internship in Women's Studies 3
Students work eight hours per week in an agency or program catering to women's
issues  Academic knowledge applied to actual working situations  Seminar discussions
focus on internship experience in light of academic research and theory
RESTRICTIONS: Requires permission of instructor

WOMS 607 Sociology of Sex and Gender 3
See SOCI607 for course description