

## SPRING 2002 CATALOG SUPPLEMENTAL COURSE DESCRIPTIONS

This section is the supplement to the current undergraduate and graduate catalogs.  
Courses not found nor fully described in the 2001-02 catalog are printed here.

### AGRICULTURAL AND TECHNOLOGY EDUCATION

#### ATED 267-010 INTRODUCTION TO AGRICULTURAL AND TECHNOLOGY EDUCATION

Designed to introduce students to the career opportunities in teaching agriculture and technology. Students examine various educational settings; conduct an exploration of their aptitude and interest in teaching, including an early clinical practicum.

### ANIMAL SCIENCE

#### ANSC 667-010 LACTATIONAL PHYSIOLOGY

Fundamentals of physiology and metabolism involved in initiation, maintenance and cessation of lactation. Emphasis on the lactating dairy cow, however comparisons with other common mammals will be observed. Neuroendocrine control of lactation, nutrient absorption and processing by the mammary gland, and control of milk composition. Prereq: ANSC 441 or ANSC 345 or approval of the instructor

### ANTHROPOLOGY

#### ANTH 367-010,080 HISTORICAL ARCHAEOLOGY OF AMERICAN BATTLEFIELDS

Represents the material culture interpretation of selected historical conflicts with an emphasis on the American war sites, including the traumatic effect of military occupation, the experience of a broad spectrum of social and ethnic groups in battle, and the material evidence of armed struggle. Some interpretation will be given to the wars of the twentieth century as well. Emphasizes commonality of behavior by individuals subjected to war.

#### ANTH 390-080 CLQ:THE IMPACTS OF EUROPEAN CONTACT ON NATIVE AMERICANS

Considers how European colonization affected the indigenous populations of North America. Examines Native American life immediately prior to European contact. Reviews effects of European arrival with a series of case studies focusing on changes in the natural environment, family life, economics, religion, and population. Examines biographies and writings presenting Native American experiences and perspectives.

### ART CONSERVATION

#### ARTC 667-010 CLEANING SYSTEMS FOR PAINTINGS AND OBJECTS

Lecture and lab focusing on solvent and water-based cleaning systems for painted and clear-coated paintings and objects. Use cross-section microscopy to select, make and test alternative cleaning systems on objects that represent a wide range of cleaning problems. Covers understanding and selecting surfactants for grime removal; the role of pH in cleaning systems; the use of chelating agents; how to make and use solvent gels and emulsion cleaning systems; how and when to use resin soaps; and the use and practical applications of enzymes for surface cleaning.

### ARTS AND SCIENCE

#### ARSC 367-010,080 GAY AND LESBIAN FILM

Explores gay and lesbian issues represented in film from 1980 to present. An analysis of major themes such as sexuality and gender, Hollywood heterosexism, sex versus sexuality, alternative families and AIDS will be examined in the context of cinematic representation.

### ART HISTORY

#### ARTH 402-010 SEM:THE MODERN PORTRAIT

Modern portraiture, from the 18th to the 20th century, in the context of changing ideas of identity, individuality, and subjectivity. Topics to be considered include the portrait's historical, political, and documentary functions; self-portraiture; mechanical reproduction; avant-gardism; celebrity; gender; sexuality; and abstraction. Prereq: ARTH 227 or ARTH 228

#### ARTH 605-010 STDS:RELIGION, RELIGIOSITY AND RITUAL IN LIVES OF ROMANS

Investigates the material evidence of religion in the ancient cities of Rome, Pompeii, and Ostia. Explores the social and political contexts in which Romans identified with official and non-official religion, and the roles of religion in the daily lives of Romans.

#### ARTH 617-010 ART AND MONEY: 17TH CENTURY NETHERLANDS

Examines the relations between economic matters and art and its interpretation, focusing on the Netherlands of Rubens, Rembrandt, and Vermeer. Explores Marxist explanations for the rise of Dutch painting; patronage, collecting, and the art market; the economic lives of artists; and current thinking about the connections between genres and competitiveness, prices and style, supply and the demand for originality.

#### ARTH 621-010 SEM:ART AND NATIONALISM IN THE MEDITERRANEAN FROM THE NINETEENTH TO THE TWENTIETH CENTURY.

After surveying modern theories of nationalism, this seminar will investigate the impact of this movement on the arts, arts institutions, and aesthetic directions of three Mediterranean nations, Spain, Italy, and Greece, which apart from being geographically and culturally related, also followed parallel ideological and political trajectories.

#### ARTH 627-010 DOCUMENTS AND DOCUMENTARY

Focuses on the history and practice of documentary in a variety of mediums as well as the use of documentary strategies to either blur understandings of reality or to undermine reality itself. Examines concepts including truth, fact, fiction, history. Artists and writers include Sophie Calle, Walker Evans, Errol Morris, Erich Auerbach, Roland Barthes.

#### ARTH 636-010 STDS:ART OF THE SEVENTIES

U.S. art from 1968 to 1981 was called "the pluralist era." This seminar will examine the positive and negative valence of that description and determine whether it or others most accurately characterizes the art of other selected nations in that decade.

#### ARTH 667-010 REPRESENTING AFRICA: DOCUMENTARY VIEWS OF THE PULA

Focuses on filmic representations of Africa's most diasporic people, the Fulani, and asks how their culture came to be projected so variously by those (Werner Herzog, Jim Rosellini, Robert Gardener) enraptured by their arts. The documentaries' lessons reframe scholars from Michel Leiris to William Rubin.

#### ARTH 867-011 CLQ:ADVANCED RESEARCH IN AMERICAN ART

For graduate students engaged in planning, researching, or writing a dissertation in the field of American art. Weekly meetings will feature presentations and discussions of individual projects. Any stage of work-from preparation of a dissertation proposal to completion of the manuscript-may be pursued.

### BIOLOGICAL SCIENCES

#### BISC 104 PRINCIPLES IN BIOLOGY

Studies biological principles at molecular, cellular, organismal and ecological levels. Fosters biological literacy through the exploration of concepts, theories and methods in relation to topics, developments and controversies in biology that impact citizens' lives and require informed decision making.

#### BISC 300 INTRODUCTION TO MICROBIOLOGY

Major groups of microorganisms (algae, protozoa, fungi and bacteria) are studied. Emphasis is on the physiology, metabolism, diversity and interactions between and among each group and bacteria and their interactions with humans. Lab included.

#### BISC 367 GENERAL PHYSIOLOGY LABORATORY

The laboratory co-requisite for BISC-306.

### BUSINESS ADMINISTRATION

#### BUAD 867-012 ENTREPRENEURSHIP AND RISK TAKING

Students will be exposed to contemporary lectures from entrepreneurs and leading experts in fields such as intellectual property and venture capital.

### CHEMISTRY

#### CHEM 467-010 TUTORIAL METHODS OF INSTRUCTION

For juniors and seniors who are group tutor-facilitators in courses where problem-based learning (PBL) is used as a mode of instruction.

#### CHEM 527-010 INTRODUCTORY BIOCHEMISTRY

Emphasizes content more relevant to the life and health sciences. Chemistry majors should choose the section that better matches their interest and career goals.

#### CHEM 527-011 INTRODUCTORY BIOCHEMISTRY

Emphasizes content more relevant to engineering and allied fields. Chemistry majors should choose the section that better matches their interest and career goals.

#### CHEM 667-010 PROTEINS, STRUCTURE AND FUNCTIONS

Overview of structural biology, including how X-ray crystallography, MNR spectroscopy and other techniques are used to solve structures of macromolecules. Representative classes of proteins will be discussed in terms of how a protein's structure relates to its function.

#### CHEM 830-011 TPCS:BIOORGANIC CHEMISTRY AND CHEMICAL BIOLOGY

Provides an overview of current topics involving the application of organic chemistry to the study of biological systems. Topics include; principles of molecular design methods for manipulating biomolecular structure-function, biosynthetic pathways of natural products and recent applications of genetic engineering, applications of biomolecular and small-molecule diversity, chemical genetics. Prereq: solid background in basic organic chemistry and familiarity with basic biomolecular structure (CHEM 642 or equivalent)

#### CHEM 874-010 TPCS:STRUCTURE AND CHEMISTRY OF SURFACES

Covers structure and chemical properties of surfaces with the emphasis on solids. In addition to the classification of the surfaces, their thermodynamic and electrical properties are discussed along with surface analytical techniques. Spectroscopic characterization of surface chemical bonds formation and catalysis is analyzed.

### CIVIL AND ENVIRONMENTAL ENGINEERING

#### CIEG 434-010/667-013 AIR POLLUTION CONTROL

Introduces the origins, characteristics, and environmental and health effects of priority air pollutants and the equipment commonly used to control emissions of these pollutants from stationary sources. Emphasis on understanding the principles, operation and design of different control devices. Prereq: CIEG223, CIEG305 and CHEG231 or equivalent.

#### CIEG 467/667-010 ADVANCED WATER RESOURCES

Advanced topics in water resources engineering including topics in groundwater flow. Prereq: CIEG 440 or equivalent.

#### CIEG 467/667-012 CONSTRUCTION METHODS AND MANAGEMENT

Provides an overview of today's construction industry, as well as future trends and prospects. Covers construction processes, field engineering, and project management. Equips the young engineer with the basic knowledge and skills required to function as a field engineer or construction manager. Provides practical understanding of construction necessary to produce efficient, constructable designs. Presents methods and materials employed in heavy, building, and industrial construction. Addresses estimating, cost control, quality control, safety, productivity, value engineering, claims and legal issues. Emphasis on planning and scheduling.

#### CIEG 467/667-017 PROBABILITY-BASED DESIGN

Course deals with application of probabilistic methods in the design and maintenance of engineering systems, with emphasis on civil/mechanical systems. Topics include modeling of randomness, identification of failure modes, computation of failure probabilities, distribution of time to failure, consequence analysis and probability-based acceptance criteria. Includes theories of multivariate distributions, stochastic processes, extreme value distributions and Monte-Carlo simulation.

Prereq: CIEG 367-010, STAT 450, or MATH 250

#### CIEG 667-011 ENVIRONMENTAL STATISTICS AND RISK ANALYSIS

A practical coverage of statistical procedures for analysis of environmental monitoring data and risk assessment. Includes parametric and non-parametric statistical tests for research applications.

#### CIEG 867-010 CONSTITUTIVE MODELING OF FRICTIONAL MATERIALS

Examines the development of advanced constitutive models for frictional materials (soil, rock and concrete). Presents basic elements of models such as failure criteria, elastic behavior, and plasticity hardening theories. Discusses Hyperbolic, Rigid Plastic, Cam-Clay, Double Hardening, Single hardening, and Bounding Surface models. Prereq: CIEG 820

## COMPUTER ENGINEERING

### CPEG 467-010 COMPUTER NETWORK SECURITY

Surveys current topics in computer network security, including technology to protect networks and hosts against intrusion, theft and denial of service. Includes security models for networks, servers and clients, and cryptographic algorithms for authentication, privacy, digital fingerprint and digital signature. Includes network and system security protocols and the protection of electronic cash transactions.

Prerequisite: CISC361 or permission of instructor

## COMPUTER AND INFORMATION SCIENCES

### CISC 479-010 SYSTEMS ADMINISTRATION

Introduces students to UNIX including, trouble-shooting system and network problems, hardware and software configuration and installation, and security aspects of hosts on the Internet. Discusses Multi-operating system integration. Gain hands-on experience on dedicated laboratory workstations using RedHat Linux. Preq: CISC361

### CISC 479-011 WEB SERVER TECHNOLOGIES

Introduction to web server technologies. Students will install and program their own web servers, integrate the web server with a database engine, and as a term project develop a full-fledged server application. Preq: CISC 370, CISC 220 plus good working knowledge of HTML and UNIX platforms.

### CISC 849-010 TPCS:MODELING AND RECONSTRUCTION OF DEFORMABLE BODIES

Advanced material in the areas spanning computer vision, graphics, visualization and image processing. We will be looking at methodologies for modeling, reconstruction, analysis and visualization. The course will consist of both concepts and mathematical elements. The major thrust of this class will not only be in group discussions, student presentations, but also in implementing various techniques, and making them available to research community. There will also be visitors from the industry who will give lectures on the related applications.

### CISC 859-010 WIRELESS NETWORKS AND MOBILE COMPUTING

Provides an in-depth study of networking protocol and system software in the area of wireless networks and mobile computing. Topics include MAC layer and 802.11, ad hoc networks, sensor networks, PARSEC simulation language, GloMoSim simulation package, Mobile IP, Cellular IP, wireless TCP, middleware for mobile computing, and 3G wireless networks.

### CISC 859-011 ADVANCED SOFTWARE DESIGN

Review of basic object-oriented software development; New software design and architecture patterns and frameworks; Component-based software engineering; Mobile software agents (Design, Architecture and Use); Principles of and protocols for complex software management; Java Environment for software development and management; Class Project: Developing large-scale E-Trade software application

### CISC 889-010 BIOINFORMATICS

Explores basic computational issues and methods in biology. Includes algorithms for alignment, superposition, motif computation, hidden Markov models, phylogenetic trees, statistical feature detection, genetic algorithms, and database integration. Previous background knowledge in biology not required. Participation by life science students with instructor permission is encouraged.

## CONSUMER STUDIES

### CNST 367-010 LEADERSHIP IN DISABILITY POLICY

Study of disability from a consumer policy perspective. Examines laws and regulations to illustrate how people with disabilities have been treated historically and how leadership in developing legislative initiatives can remove community and social barriers to accessibility.

## COMMUNICATIONS

### COMM 418-010 MEDIA ETHICS

Examines the tensions inherent in attempts to ensure freedom of the press but to demand accountability at the same time, and the responsibilities for which our society expects the media to assume.

### COMM 418-011 TPCS:IMPACTS OF NEW MEDIA TECHNOLOGY

Traces the history of the Internet and examine its impact on society, organizations and individuals.

#### COMM 418-012 TPCS:CRISIS NEWS

Explores the real world of broadcast news and how it's being changed by political, business and cultural trends. Studies some of the ethical and historical underpinnings of contemporary broadcasting to see if they're still being used.

#### COMM 418-013 TPCS:BROADCAST TELEVISION HISTORY

Focus is on the Golden Age of television broadcasting and examine some of the dominant genres of the era: western, family comedy, quiz show, variety, situation comedy, drama, and military programs. We will discuss how societal structure, social norms, economic support, and U.S. broadcasting policy are reflected in the cultural products of television.

### EDUCATION

#### EDUC 667-010 RESEARCHING IN THE ELEMENTARY GRADES

Focuses on using inquiry research as a tool to teach informative reading and writing in the K-8 classroom. Includes strategies for reading informative text, note taking, organizing material, informative writing, reading and writing visuals texts, and planning an effective inquiry research project in the K-8 classroom.

#### EDUC 667-011 DEMOCRATIC EDUCATION TODAY

Examines contemporary problems in democratic education from theoretical and practical perspectives. Revolves around a companion colloquium series of prominent invited speakers who will address relevant topics such as religious diversity, anti-racism and desegregation, sexual minorities, freedom of speech and censorship, and school finance equity.

#### EDUC 667-420 ANALYSIS OF PROFESSIONAL PRACTICE

The National Board for Professional Teaching Standards' five core propositions provide the foundation for developing the core experiences and exercises that enable teachers to demonstrate a high level of knowledge, skills, dispositions, and commitments. Students will be expected to show how they meet the National Board's high and rigorous standards by completing two exhibits for a portfolio that provide evidence of teaching practice through student work, videotapes of classroom interaction, and written commentaries.

#### EDUC 837-010/PSYC 804-010 ETHNICITY, HUMAN DEVELOPMENT AND SCHOOLING

Examines the development of children and adolescents of different ethnic groups, particularly those of color, in the context of school. Examines both conceptual and methodological issues related to conducting research with children of different ethnic groups. Includes ethnic identity, intergroup relations among children and adolescents, and racial socialization.

### ENGINEERING TECHNOLOGY

#### EGTE 467-011/PLSC 467-011 ISSUES IN PRODUCTION AGRICULTURE

Practicum to enhance skills and broaden understanding of issues, challenges, and technology related to agricultural production. Includes Saturday lab/field trip experiences. Opportunities for interaction with farmers and representatives from various segments of the agricultural industry.

### ELECTRICAL ENGINEERING

#### ELEG 367-010 JAVA FOR ENGINEERS AND SCIENTISTS

Introduces the JAVA programming language with emphasis on solving Engineering applications. Students will learn fundamental programming techniques of the JAVA language, using an UNIX programming environment. Explores engineering problem-solving; equation evaluation, Data manipulation, and graphical, GUI construction.

#### ELEG 467-012/667-012 OPTICAL DEVICE ENGINEERING

Introduction to advanced optical and opto-electronic devices that are used, or are being developed for use, in modern information processing systems. The technology covered includes optical fibers, diffractive optical elements, photonic bandgap devices, and a variety of active sources, detectors, and modulators.

#### ELEG467-014/667-014 PROGRAMMING FOR SUPERCOMPUTERS

Overview of supercomputers, parallel computers and clusters from a programmer's perspective. Programming paradigms and languages for parallel computing, emphasizing current practices and scientific/numerical applications through programming projects. Maximizing program performance on both sequential and parallel machines. Debugging and performance analysis of parallel programs.

Prereq: Prior programming experience, preferably C and /or FORTRAN.

#### ELEG 667-013 BIOSENSORS & BIOMEMS

Biological micro-electro-mechanical systems (BioMEMS) is an interdisciplinary technology that integrates biology with silicon devices for fabricating biosensors. Covers topics such as biological transduction mechanisms, MEMS, chemical detectors, drug delivery systems, nano-biotechnology, gene sequencing, cell and tissue engineering, biomimetic systems, and microfluidics.

#### ELEG 867-010 RF AND MICROWAVE TECHNOLOGY

Modern telecommunications and datacom systems operate at frequencies in the radio frequency (RF) and microwave range. This is true even for lightwave systems, in which the modulation frequencies are in this range. Explains the basic concepts and technologies required to design RF and microwave devices and systems. Examples of applications to wireless and lightwave systems will be discussed.

#### ELEG 867-011 ADVANCED COMP ELECTROMAGNETICS II

Studies the Method of Moments and the Finite Element Method for the numerical computation of electromagnetic fields. Such methods are integral to the analysis and design of many modern devices, including antennas, radar systems, computers, and cell phones.

### ENTOMOLOGY

#### ENTO 467-010 CAPSTONE COURSE: INTERDISCIPLINARY NATURAL RESOURCES

A problem-based-learning (PBL) experience designed for NRM, WC and ESS majors (and others with interest) that draws upon utilization of knowledge in a multi-disciplinary approach to examination of the White Clay Creek watershed with special emphasis on the White Clay Preserve.

### FOOD AND RESOURCE ECONOMICS

#### FREC 367-010 ECONOMICS OF BIOTECHNOLOGY AND NEW TECHNOLOGY

Covers economic explanations for new technologies and the way economists and agribusinesses view innovation and adoption of new products and techniques. Describes biotechnology and its role in different sectors of the economy and examines economic issues from consumer acceptance to trade to changes in market structure. Discusses new technologies with the potential for significant impacts on agribusiness.

### GEOLOGY

#### GEOL 467-010/667-010 MINERALOGIC INSTRUMENTAL METHODS

Techniques of examining and analyzing minerals and rocks that are relevant to understanding Cenozoic shallow geologic environments. May include optics and indicatrix theory, x-ray powder diffraction, including an introduction to clay study and to Reitveld analysis, scanning electron microscopy (SEM) and energy-dispersive analysis (EDS) transmission electron microscopy (TEM) cathode luminescence, x-ray fluorescence analysis (XRF), mass spectroscopy of O and C isotopes, and laser-ablation, induction-coupled plasma mass spectroscopy (LA ICP MS) analysis. Presentation required.

#### GEOL 467-011 SENIOR SEMINAR

Capstone course offered around a "general geology topic of interest" selected by the instructor(s). Emphasizes presentation, writing skills, and review/understanding of published literature.

### HEALTH AND EXERCISE SCIENCES

#### HESC 367-010 PUBLIC AND MEDIA RELATIONS IN SPORTS

Analysis of the media and public relations process in the sport industry. Essential concepts, theories and skills will be presented and students will apply and synthesize them through semester projects.

Prereq: HESC 200, HESC 207

#### HESC 367-011 FINANCIAL ASPECTS OF SPORTS

An examination of the revenues and expenses of professional sport franchises, leagues and events; intercollegiate athletic departments and governance; the Olympic Movement; and those economic and societal variables that impact the finances of sport organizations. Prereq: HESC 200, HESC 207

### HISTORY

#### HIST 367-010 LONDON AND PARIS IN THE MODERN AGE

The development of modern urban culture in Europe through the social and cultural life of London and Paris since 1750. The rapid growth of these cities and capitals of powerful imperial nations created opportunities and problems in equal measure. The aim is to build up a full picture of the evolution of cities in the modern world.

#### HIST 367-011 ENGLAND'S RISE TO GREATNESS, 1688-1789

Attempts to synthesize the social, economic, political, cultural and colonial developments during England's rise to world power from 1689-1789. Topics as diverse as the rise of the novel, the voyages of Captain Cook, origins of empire, growth of industry, Celtic fringe, novelty of popular politics, fascination with landscape, birth of class, and changing status of women will be covered.

#### HIST 367-012 AFRICAN AMERICAN WOMEN'S HISTORY

Examines the lives of black women in America from the colonial era through the twentieth century. This course has a number of goals, one of which is to provide a broad introduction to the interdisciplinary fields of African American and Women's Studies.

#### HIST 367-410 HISTORY OF WILMINGTON

Covers the history of Wilmington, Delaware, from the first European settlement in 1638 to the present. Looks at the changes in Wilmington's economy from its role as a center for grain production, through the years of industrialization, to its development as a corporate capital, and finally, the transition to a financial services center. Focus on the changing social and ethnic makeup of the city and the important role different peoples played in the city's history.

#### HIST 367-411 REVOLUTIONARY DELAWARE

A survey of Delaware history from 1760 to 1812. Focuses on the changes brought about in Delaware by the Revolutionary War and subsequent developments in the Early Republic. Discusses, the strength of loyalism in Delaware, the Methodist revival, the decline of slavery, and the emergence of rural Federalism in downstate Delaware.

#### HIST 367-440 THE AMERICAN WEST

Surveys the history of the American west through the eyes of its diverse population as well as those who are drawn to study and define it. Focuses on issues and themes currently debated concerning the legacy, meaning and imagery of the American west as expressed through art, music and film.

#### HIST 411-010 SEM:FROM SPIRITUALS TO HIP-HOP: THE AFRICAN AMERICAN EXPERIENCE THROUGH MUSIC

Explores the African American experience through a wide range of musical genres such as nineteenth century spirituals, gospel, blues, jazz, rhythm and blues through 21st century hip-hop. In addition to exploring the historiography of the African American experience, we will focus our attention upon complex issues such as race, class, gender, labor, and the construction of culture.

#### HIST 411-011/411-080 SEM:WOMEN IN 20th CENTURY AMERICA

This seminar uses biography and autobiography to study the history of women in the 20th century. Each week's seminar will focus on discussing a biographical or autobiographical work, and through it the experiences of varied women in the last century.

#### HIST 411-012 SEM:PRESIDENTIAL CHARACTER

Examines the character development of several important American presidents and how those characters affected their presidencies. They will include Kennedy, Johnson, Nixon and Clinton. Students will participate in a lively discussion, a required project and will write a twenty-five page paper.

#### HIST 411-014/HIST611-014 SEM:TOURISM IN AMERICA: 1820-1940

Examines the origins, development, and changing nature of tourism in the U.S. from the early 19th century to the World War II era. Focus will be on economic, social, cultural, and material culture history through selected readings, classroom discussions, student presentations, and lectures.

#### HIST 471-010, 080 SEM:EUROPE IN THE TENTH CENTURY

Examines the political, social, economic, religious and intellectual development of Europe in the "century of iron". Particular attention will be given to the monastic achievements of the period and to relations between East and West. At least a 15 page research paper is required.

#### HIST 475-010 SEM:THE END OF THE FRENCH EMPIRE

Explores France's rapid loss of its huge colonial empire after the Second World War. Focusing on the struggles in Algeria, Vietnam, and West Africa, attention is given to the anti-colonial writings of people on the receiving end of French rule, and looks at how the empire has been remembered in contemporary France. (Not open to students who took HIST 268 in Fall 2000.)

#### HIST 667-010 TECHNOLOGY IN AMERICAN CULTURE

Explores the role of technology in American culture from contact to the present. Designed to introduce the use of American studies and cultural history approaches in the history of technology. Weekly readings will include historical monographs, novels, and a variety of other materials.

#### HIST 667-011 THE ATLANTIC WORLD, 1450-1750: CULTURE, SOCIETY, ECONOMY

Explores one of the most vibrant fields of early modern scholarship, including work on cultural negotiation and identity, imperial domination, migrations of people covering four continents (Africa, South America, North America and Europe).

#### HIST 867-010 RESEARCH & WRITING SEMINAR: COMPARATIVE HISTORY

Focuses on the United States in comparative perspective. Considers diverse approaches to comparative history. Students produce a paper based on original research, that will deal in comparative fashion with some aspect of the American past. "Comparative" will be defined broadly to encompass a variety of approaches designed to accentuate context.

#### LINGUISTICS

##### LING 367- 010 LANGUAGE AND THE LAW: COURT INTERPRETATION IN THE UNITED STATES

Examines public policy development as well as constitutional and statutory provisions for appointment of interpreters at both the federal and state levels; ethical considerations and linguistic challenges; and potential effects of the U.S. English Organization's efforts to make English the Official Language of the U.S. on court interpretation services.

#### LIBERAL STUDIES

##### MALS 617-010,430 BILLETHEADS TO BARBIE DOLLS: CREATING THE AMERICAN IMAGE

Examines how visual imagery in painting, sculpture, political cartoons, photography, film, TV, and advertising has played a significant role in the creation of American mythologies. Centers on such themes as the changing concepts of beauty, the land, gender identification, middle class domesticity, and racial stereotyping. Examines the influence of museums and more recently Disneyworld on our American culture.

##### MALS 667-430 THE VIETNAM WAR IN LITERATURE AND FILM

Focuses on the Vietnam Conflict as it has been represented in works of poetry, drama, prose fiction, and film. Students will read and view American, French and Vietnamese works in an effort to view the conflict from a broad and complex historical perspective.

#### MARINE STUDIES

##### MAST 629-010 TPCS:STATISTICS IN MARINE SCIENCES

Introductory graduate course in statistics, with emphasis on applications in the marine sciences. Topics include exploratory data analysis, graphical presentation, correlation, regression, ANOVA, analysis of frequencies, nonparametric statistics and resampling approaches, and use of statistical software.

##### MAST 667-010 COASTAL OCEAN PHYSICS TO FISH

Tides, waves, winds and freshwater discharges all impact biological systems through the movement and mixing of particles. This applied class surveys how physical processes affect patterns of productivity in the coastal ocean. Designed for first-year biological oceanography students.

##### MAST 667-011 DECISIONS TOOLS FOR POLICY ANALYSIS

Develops quantitative decision-making skills for science and technology policy analysis. Covers decision-making under uncertainty, axioms of decision analysis, decision trees, influence diagrams, sensitivity analysis, confidence intervals, value of information, and multi-attribute decision theory. Introduces life-cycle analysis, discounting and inflation, and benefit-cost decision frameworks.

##### MAST 827-010 ECOLOGY AND EVOLUTION OF CORAL REEFS

Introduction to our present understanding of coral reefs, including the physiology, ecology, and evolution of reef building corals and the communities that they form. Topics include the potential impact of human populations on reef systems and the status of the emerging fields of restoration and conservation biology of coral reefs.

##### MAST 827-011 TPCS:LARVAL ECOLOGY

Critical evaluations of recent literature in the field. Class meetings will consist of structured discussions. Each student will lead at least one discussion during tenure of the course.

##### MAST 867-010 BIOLOGICAL OCEANOGRAPHIC METHODS

Provides students a basic set of skills for carrying out laboratory and field experiments in biological oceanography. Lab sessions and field trips teach common methods for carrying out investigations into the ecology and physiology of marine bacteria, phytoplankton, zooplankton, fish, and benthic algae and invertebrates. Hands on training includes instruction in sample collections, field surveys, experimental design and widely used analytical methods. Students develop an independent biological oceanographic experiment.



## MECHANICAL ENGINEERING

### MEEG 467-010 VEHICLE DYNAMICS

Theory of ground vehicles with an emphasis on racing. Topics covered include adhesion, suspension analysis and design, chassis design, aerodynamics and downforce generation, and powertrain analysis.

Prereq: MEEG112, MEEG211, required. MEEG311, PHYS210 strongly recommended.

### MEEG 467-667/011 DESIGN AND MANUFACTURE OF FLEXIBLE STRUCTURES

Focuses on the use of coated fabrics to create structures that are flexible; in particular, flexible devices that use gas pressure to obtain a structural shape. Provides a brief overview of textile materials, then emphasizes design and fabrication of these inflatable structures. Will emphasize an engineering approach while discussing the unique aspects of applying those concepts when using textiles as the basic structural material. Prereq: Engineering students should be familiar with solid mechanics as is covered in the MEEG112, 211, 215 sequence. Non-engineering students should have a strong background in Physics; i.e., PHYS207.

### MEEG 467-012/667-012 CLINICAL BIOMECHANICS

Discusses the biomechanics and patho-mechanics of various human musculoskeletal joint systems. Presents normal joint anatomy and biomechanics. The mechanical effects of pathology and the goals of surgical repairs and replacements to counteract them will be explored by discussion of in vitro, in vivo and mathematical modeling studies of joint system mechanics.

### MEEG 467/667-013 SOLAR-POWERED ENERGY-EFFICIENT HOMES

Treats residential homes as integrated systems and applies systems approach to the design and construction of low-cost energy-efficient homes. Discusses energy considerations in design, construction, and operation. Introduces quantitative life-cycle cost analysis using value engineering. Reviews technologies in solar-powered sustainable homes. Prereq: MEEG 112, MEEG 331, PHYS 310 or consent of instructor.

### MEEG 867-010 NANOCRYSTALLINE AND NANOCOMPOSITE MATERIALS

Offers a general view of the rapidly changing field of nanocomposites and nanostructures. Covers developments in polymer, ceramic, and metal nanocomposite systems; the current applications of nanocomposites; the major processing routes; the novel mechanical and physical properties of these materials compared to conventional materials; and new models describing these properties.

### MEEG 867-011 ADVANCED TOPICS: NONLINEAR DYNAMICS AND CHAOS

Nonlinear dynamics and chaotic phenomenon 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. Planar and non-planar phase space analysis, local and global bifurcation analysis, catastrophes, resonances.

### MEEG 867-012 ADVANCED TOPICS: ROBOTICS

Presents a comprehensive study of performance indices related to the robotic mechanical systems behavior with regard to force and motion transmission, modeling and design of parallel manipulators, flexible manipulators, calibration and optimization of robotic mechanical systems.

## MATERIALS SCIENCE ENGINEERING

### MSEG 467/667-011/ELEG 467/667-011 ENTREPRENEURSHIP AND RISK TAKING

Students will be exposed to contemporary lectures from entrepreneurs and leading experts in fields such as intellectual property and venture capital.

## MUSEUM STUDIES

### MSST 467-010 CURATORIAL APPRENTICESHIP

Special projects/research related to museum profession including object research, conservation treatment, or museum education. Topics arranged individually by students with instructor, culminating in a full-scale research paper, treatment proposal, or lesson plan. Requires concurrent attendance and participation in Curatorial Apprenticeship Program of the University Gallery.

### MSST 667-014/UAPP 667-014 TRADITIONAL ARCHITECTURAL MATERIALS

Designed for non-scientist interested in historic preservation or architectural history. Overview of the materials science, processing technology, deterioration mechanisms, and history of use of stone, mortar, ceramic, metal, glass, stucco, wood, and paint components of traditional architecture from a variety of cultural contexts.

## MUSIC

### MUSC 167-010 PEP BAND

Attends all home basketball games performing a variety of pop, rock and jazz selections. Performs at select games during Winter Session. Attendance at these games is mandatory.

### MUSC 167-011 MARCHING PERCUSSION TECHNIQUES

Focuses on advancing skills on the marching snare drum, multi-tenors, bass drum, cymbals or front ensemble. Emphasizes techniques through an opportunity to learn basic arranging skills. Open to students of all skill levels.

### MUSC 167-012 MARCHING BAND TECHNIQUES

Focuses on designing and charting a show of the complete contemporary marching band. Lectures include: history and development of the marching band and "hands on" sessions in marching percussion and color guard. Prereq: must have completed at least one semester in UD Marching Band.

## MUSIC EDUCATION

### MUED 267-010 AESTHETIC EDUCATION

Discovers the philosophical basis of the performing and visual arts in education and strategies for their integration into core curriculum subjects. Interaction with visiting teaching artists and participation in field trips to observe these artists in the context of the classroom. Experience multiple learning/teaching styles and a realization of new possibilities in communication.

## PHILOSOPHY

### PHIL 267-010 ALTERNATIVE LOGICS

Surveys major systems of symbolic logic that compete with or extend the classical theory of PHIL 205. Briefly describes some or all of the following systems: intuitionistic logic; many-valued logic; second -order logic; and logics of time, necessity, knowledge, obligation, counterfactuals, and contradictions.

### PHIL 367-010 JEWISH THEOLOGY

Critically evaluates the theological views of major branches of Judaism on such topics as: significance of Israel; status of Jewish law; mission of the Jewish people. Designed for Jewish Studies minors and Philosophy majors.

### PHIL 367-010/080 MAJOR CHRISTIAN THINKERS

Reading and discussion of Augustine, Aquinas, Luther, and Tillich. Emphasis on how each one articulates basic religious beliefs, particularly in relation to dominant philosophical positions of his day. In depth look at a major thinker in each of the four main eras in the history of Christian thought: ancient, medieval, reformation, and modern. Topics include God, the God-world relation, reason vs. revelation, the human condition, salvation, and the overall meaning of history.

### PHIL 465-010 FREEDOM AND RESPONSIBILITY

Addresses issues related to the perennial questions of the meaning, possibility, and nature of human freedom and moral responsibility. Looks at historical as well as contemporary sources. Conducted as a seminar with students assigned to lead the discussion, present papers, and comment on the papers of other students.

## PHYSICS

### PHYS 638-010 TPCS:PARTICLES AND THE UNIVERSE

Discusses elementary particles and the fundamental forces through which they interact. Explains how standard big bang cosmology works, and what its strengths and shortcomings are, and inflationary cosmology which provides a more unified approach to understanding the origin of large scale structure in the universe. Accessible to undergraduates with some background in modern physics and quantum mechanics.

### PHYS 638-011 TPCS:STELLAR ATMOSPHERES AND WINDS

Focus is on radioactive transfer in stellar atmospheres, with emphasis on understanding the physical processes of radiation scattering and absorption from continuum and line opacity sources. Also focuses on understanding the dynamics of stellar mass outflows, including the coronal pressure expansion of the solar wind, as well as stellar winds from more luminous stars that are driven by radiation pressure interacting with either dust or line opacity.

## PHYSICAL THERAPY

### PHYT 667-010/PSYC 667-010 READINGS IN MOTOR LEARNING AND DEVELOPMENT

Surveys classic and more recent literature addressing the learning and development of motor skills. Each class will require that students read assigned papers on the topic and prepare discussion questions for class.

## PLANT SCIENCE

### PLSC 367-010 ADVANCED PLANT MATERIALS

Study of new and unusual plants in the nursery industry. Discusses plant introduction. Provides students with the tools necessary to stay current with future developments in new plants. Preq: PLSC211 or PLSC212 .

### PLSC 467-010 NURSERY PRODUCTION

The planning, production, management and marketing of both container and field grown nursery stock. Student select crops, propagate them and are responsible for all aspect of production including cost accounting.

### PLSC 667-010 TPCS:TOPICS IN FACILITIES MANAGEMENT

Presentation and discussion of the variety of philosophies, systems, processes and regulations important in maintaining a physical plant. Individual topic areas will be addressed by guest speakers and specialists in the topics.

## PSYCHOLOGY

### PSYC 467-010,081 IDEAS IN BIOPSYCHOLOGY

Students read six books during the semester. Readings will consist of "classics" in psychology, biology, and philosophy. One student will be responsible for leading the discussion about that book. Reading list is flexible and will be chosen depending on the interests of the students.

### PSYC 467-011 EMOTIONS AND PREVENTIVE INTERVENTION

Covers the development of emotions, emotion knowledge, and emotion regulation, their relations to adaptation and social behavior. Emotion-centered preventive intervention, including participation in an intervention program for children. Prereq: PSYC 350 AND PSYC 334 OR PSYC 380.

### PSYC 467-013 PERCEPTION, MEMORY AND IMAGINATION

Explores underlying relationships among perception, memory and imagination. Discusses readings in perception, memory, imagery, object recognition and neuropsychology, and in-class demonstrations of perceptual illusions and distortions of memory.

### PSYC 467-014 REDUCTION OF INTERGROUP CONFLICT

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. In addition, students will be active in research about reducing intergroup conflict.

### PSYC 467-015 RESEARCH METHODS

Reviews the major issues involved in the design of psychological experiments. Includes measurement of psychological variables, internal and external validity of experiments, research with single subjects, and research ethics. Discusses both laboratory and field research. This course is for students who plan to apply to graduate school in psychology.

### PSYC 467-016 PSYCHOLOGY OF ADJUSTMENT

Seminar exploring scientific evidence supportive of a psychological model of human healthy adjustment. Evidence will be drawn from all areas of psychological science.

### PSYC 467-080 HNRS:SOCIAL MOTIVATION

Analysis of theory and research in the social psychology of motivation. Includes active student participation in research projects. Prereq: PSYC 309, and PSYC 303 or 390, and permission of instructor.

### PSYC 867-010 PERSONALITY IN SOCIAL PSYCHOLOGY

Systematically surveys theories of personality, methods of personality assessment, and linkages between personality and culture. Students read original journal articles and lead class discussion. Requires weekly short papers analyzing issues in the readings, as well as a major paper that will be written in the form of a grant proposal.

### PSYC 867-011 PSYCHOPHARMACOLOGY

Survey of drugs used as medications for mental, emotional and neurological disorders. Discusses the neuropathology of the disorders and how the various drugs work. The level of instruction is aimed at the clinical psychology graduate student.

#### PSYC 867-012 FIRST YEAR SEMINAR

Introduces students to a number of issues central to their development as psychologists. First and foremost, graduate students and colloquium faculty together discuss conceptual and methodological issues of faculty research programs. In addition, students discuss issues such as ethics, manuscript preparation, grant proposal preparation, and transitions to faculty status.

#### PSYC 867-013 CURRENT TOPICS IN CLINICAL PSYCHOLOGY

Discussion of current topics in clinical psychology.

#### PSYC 867-014 CURRENT TOPICS IN SOCIAL PSYCHOLOGY

Discussion of current topics in social psychology.

#### PSYC 867-015 CURRNT TOPICS IN NEUROSCIENCE

Discussion of current topics in neuroscience.

#### PSYC 867-016 CURRENT TOPICS IN COGNITION

Discussion of current topics in cognitive psychology.

### SOCIOLOGY

#### SOCI 267-010 RESEARCH ON ALCOHOL

Scholars, administrators, and clinicians from off-campus and from the University of Delaware community present and discuss their research and experiences with issues of alcohol use and abuse. Special focus on the use of alcohol on college campuses and the impact of high risk drinking on the college and neighboring communities.

#### SOCI 367-010,080 SOCIAL INEQUALITY AND FILM

Read materials to develop an intersectional analysis of social inequality based on race, social class, gender, and sexuality and explore the role of films in creating images of ourselves, others, and social processes, like social mobility. View major motion pictures and documentary films to develop a critical perspective for viewing the media and its role in promoting ideas and knowledge.

#### SOCI 367-011 SOCIAL IMPACTS OF DISASTERS

Provides a sociological introduction to the impact of natural and technological disasters on society. Through case studies, approaches to disaster preparedness and mitigation will be presented to discover how societies attempt to lessen the occurrence or severity of disaster events.

#### SOCI 467-010 POST WORLD WAR II LATIN AMERICAN IMMIGRATION

Review of the history and social science of Mexican, Puerto Rican, Cuban, Dominican, and Central American immigration to the United States. Covers the different histories of these immigration flows and their change over time, the immigrants' various places of destination and experiences of incorporation into US society and culture, and the persistent problems of these minority communities.

#### SOCI 467-011 SOCIAL MOVEMENTS

Focuses on sociological approaches to explaining how social movements develop and how and why individuals join social movements. Provides a review of major theoretical perspectives. Gives students an opportunity to select specific contemporary social movements (e.g., the environmental movement, pro-choice and pro-life movements, and the women's movement) for in-depth study.

#### SOCI 467-012 CONTEMPORARY SOCIAL ISSUES

Examination of recent social scientific literature on contentious social issues, and relevance of research to shaping policy.

#### SOCI 667-010 GENDER, CRIME AND DEVIANCE

Designed to explore the theories and empirical research that relate to gender, deviance and social control, and crime. Also examines policy implications of these issues, paying particular attention to how multiple statuses (race, gender, social class, etc.) effect social and institutional responses.

### URBAN AFFAIRS AND PUBLIC POLICY

#### UAPP667-010 BASICS OF INFORMATION MANAGEMENT

Focuses broadly on information management. Includes basic design issues; the range of products to include personal/consumer databases through enterprise systems; differences in functionality; importance for web access, e-commerce and e-government. Addresses the roles of staff including the key role of database administrator. Covers issues of security and disaster recovery.

#### UAPP667-011 MEASURING AND DEFINING PLANNING PROBLEMS

Studies methods for identifying and measuring planning-related problems, including analyses of land use patterns, population dynamics, economic trends, social indicators, and ecological characteristics as predictors and determinants of future development.

#### UAPP 667-012 INTRODUCTION TO COMPREHENSIVE PLANNING

Description of the components and methods for preparing a comprehensive plan, and understanding the value of a comprehensive plan to the community.

#### UAPP 667-013 INTRODUCTION TO ZONING AND LAND USE CONTROLS

Survey of the theories underlying land use patterns and description of the legal structure and methods surrounding public sector control and management of land use including police power, eminent domain, zoning, subdivision control, and master plans.

#### UAPP 667-015 ANALYSIS AND INTERPRETATION OF HISTORIC LANDSCAPES

Explores the interpretation of historic vernacular and designed landscapes, with emphasis on application to historic preservation planning. Focuses on the examination of a series of historic American landscapes beginning with the eighteenth century and concluding with twentieth century suburban and industrial environments.

#### UAPP 667-016 ORGANIZING FOR SOCIAL JUSTICE: THEORIES & PRACTICES

Analysis and comparison of four contemporary types of organizing approaches used in the U.S. examining their ideologies, methods of application, theories of change, and expected outcomes relative to changing social and economic policies.

#### UAPP 667-017 GEOGRAPHIC INFORMATION SYSTEMS IN PUBLIC POLICY

Considers the applications, technology, best-practice solutions, and implementation issues associated with GIS. Focus on the "cutting edge" applications of GIS and web-based technologies in areas such as natural resource planning, land use management, health planning and redistricting after the 2000 Census. Provides hands on experience.

#### UAPP 667-018 CRIMINAL JUSTICE ADMINISTRATION

Aids those planning a career as an administrator in the criminal justice system. Topics typically include basic administrative policy and budgetary matters.

#### UAPP 667-019 VIRTUAL GOVERNMENT

Explores the evolving field of e-government and evaluates opportunities to enhance the delivery of government services. Reviews developments throughout the world and recommends strategies for implementation.

#### UAPP 667-020 FUND DEVELOPMENT FOR NONPROFIT ORGANIZATIONS

Second in a series of three, one credit courses that focus on corporate, foundation and government development activity in support of the nonprofit organization. Includes presentations by practitioners helping the students to understand the issues from the perspective of the funding sources, and from professional fundraisers on identifying potential donors through research.

#### UAPP 667-021 ORGANIZATIONAL CULTURE AS A COMPETITIVE ADVANTAGE

Explores an organization's ability to sustain and extend its growth through the development of a high performance culture. Focuses on low-cost and high-value strategies of organizational development which result in enhanced productivity and growth. Examines issues of team development and retention of human capital using current organizational methods of operations.

#### UAPP 667-022 INNER-CITY REVITALIZATION FIELD STUDY

Through a series of four field trips to Philadelphia, Wilmington, Baltimore and Washington, students will learn about actual inner-city revitalization programs and initiatives from individuals who are designing and managing them. Special attention will be paid to issues of housing, economic development, urban finance, public safety and historic preservation.

#### UAPP 688-010 GOVERNMENT LEADERSHIP & URBAN REVITALIZATION

Offers a critical analysis of a subset of theories, programs and philosophies associated with local governmental efforts to revitalize urban communities. Examines local initiatives related to housing, employment, citizen participation, crime, and social/welfare services.

#### UAPP 867-010 ELECTRICITY POLICY AND PLANNING

Focuses on technical and policy evolution of the electricity industry. Considers how technology innovations and policy/regulatory actions have guided the industry. Exposes students to supply and demand side resources, and emerging alternatives in utility technology, planning and policy.

