Course Descriptions

Semester course listings are available on the university’s Web site. Consult the Registration and Student Record Services Handbook or http://ecampus.jmu.edu for information about dates, deadlines and registration procedures. Some courses are not offered every semester.

Following most course titles and credit hours is the anticipated semester offering, indicating whether a course may be scheduled in the fall, spring or summer semester. This information is provided to help students plan their course schedules. The anticipated semester offering is not the same as the schedule of classes, and the semesters listed are indicative of when the courses may be offered, not a guarantee that the course will be available every semester listed.

A G in bold and italics or an asterisk (*) preceding the course prefix and number indicates a course which potentially meets general education requirements. (If the course is part of a course sequence, the asterisk appears after the appropriate course’s prefix and number.) See Pages 84-95 for General Education information.

If a course has a separate laboratory period, the number of lecture hours and the number of laboratory hours per week will be shown in parentheses immediately following the course title.
Accounting
College of Business

ACTG 301. Financial Reporting and Statement Analysis. 3 credits. Offered fall and spring.
This class provides the foundation to analyze, interpret and use financial statements effectively, emphasizing the use of technology including advanced spreadsheet techniques and Internet research. It also includes discussions with professionals addressing various roles of accountants in business, government and capital markets. Prerequisites: Completion of both COB 241 and COB 242 with grades of "B-" or better. Prerequisite or corequisite: COB 300.

ACTG 313. Accounting Information Systems. 3 credits. Offered fall and spring.
Covers the use of computers as tools for the collection, organization, analysis and reporting of accounting data. Topics include: internal controls, documentation of accounting systems, transaction processing cycles, auditing information technology, e-commerce, enterprise resource planning systems, computer and information systems security, and integration of business functions in the accounting process. Prerequisites or corequisites: ACTG 301 and ACTG 343.

ACTG 343. Corporate Financial Reporting I. 3 credits. Offered fall and spring.
Provides a theoretical framework to explain and critically evaluate financial reporting in a global environment. In addition to studying the authoritative standards for preparing financial statements, students develop the ability to read, use, analyze and interpret financial statements. Students gain an understanding that managers can shape the financial information communicated to investors and creditors. Computing technology is incorporated to facilitate business decision making. Prerequisites: Completion of both COB 241 and COB 242 with grades of "B-" or better. Prerequisite or corequisite: COB 300 and ACTG 301.

ACTG 344. Corporate Financial Reporting II. 3 credits. Offered fall and spring.
Continues the development of a theoretical framework to read, use, analyze, interpret and critically evaluate financial reporting in a global environment. Selected topics include financial instruments, leases, pensions, deferred taxes, stockholders' equity and other corporate reporting issues. Computing technology is incorporated to facilitate business decision making. Prerequisite: ACTG 343 with a grade of "C-" or better.

ACTG 377. Federal Income Tax Accounting. 3 credits. Offered fall and spring.
Designed to introduce students to the federal income tax system, including individual and business entity taxation. Topics include income, exclusions, deductions and property transactions. Also facilitates development of research, communication and technology skills. Prerequisite: COB 300.

ACTG 410. Auditing. 3 credits. Offered fall and spring.
A study of techniques available for gathering, summarizing, analyzing and interpreting the data presented in financial statements and procedures used in verifying the fairness of the information. Also emphasizes ethical and legal aspects and considerations. Prerequisites: ACTG 313 and ACTG 343 with grades of "C-" or better. Prerequisite or corequisite: ACTG 344.

ACTG 420. Operational Auditing. 3 credits. Offered spring.
This course is a study of the basic principles and techniques of operational auditing. It covers organizing and conducting operational audit engagements and addresses regulatory compliance issues. Prerequisites: ACTG 313 and ACTG 343 with grades of "C-" or better. Prerequisite or corequisite: ACTG 344.

ACTG 440. Advanced Information Technology for Accountants. 3 credits. Offered spring.
Continuation of ACTG 313 for AIS concentration students. Topics include telecommunications, distributed processing, networking, EDP auditing, systems security and system design fundamentals taught from an accounting perspective. Prerequisite: ACTG 313 with a grade of "C-" or better.

ACTG 445. Selected Accounting and Reporting Topics. 3 credits. Offered spring.
Focuses on the development and use of financial information as it relates to business combinations, governmental and public not-for-profit entities, and transactions and statements denominated in foreign currencies. In the context of the global accounting environment, students critically evaluate U.S. generally accepted accounting principles as they pertain to the topics covered. Prerequisite: ACTG 343 with a grade of "C-" or better.

ACTG 450. Governmental and Nonprofit Accounting and Reporting. 3 credits. Offered spring.
Focuses on budgeting, accounting and financial reporting principles associated with private and public nonprofit organizations. Includes survey of state, local, municipal and federal government accounting. Prerequisite: ACTG 343 with grade of "C-" or better. Prerequisite or corequisite: ACTG 344.

ACTG 475. Accounting Decision Making and Control. 3 credits. Offered fall and spring.
The study of cost accounting concepts and information used by business organizations to make strategic, organizational and operational decisions. Topics include the role of planning and control in attaining organizational goals and objectives; the relationship among cost structure, cost behavior and operating income; traditional and activity-based costing approaches to product costing; differential analysis in decision making; and ethical issues for accountants. Students will also engage in activities designed to enhance technological and communication skills. Prerequisite: COB 300.

ACTG 483. International Accounting and Financial Reporting. 3 credits. Offered spring.
Designed to develop a fundamental knowledge of the assumptions, environmental considerations and techniques underlying the collection and reporting of financial information on an international scale. Prerequisite: COB 300. Open to non-accounting majors only.

ACTG 490. Special Studies in Financial Accounting. 1-3 credits each semester. Offered fall and spring.
Designed to give capable students in accounting an opportunity to do independent study under faculty supervision. Admission only by recommendation of the instructor and permission of the director. Forms obtained in department office before registration.

ACTG 491. Special Studies in Systems and Technology. 1-3 credits each semester. Offered fall and spring.
Designed to give capable students in accounting an opportunity to do independent study under faculty supervision in the area of systems and technology. Prerequisites: Recommendation of the instructor and permission of the director.

ACTG 492. Special Studies in Tax. 1-3 credits each semester. Offered fall and spring.
Designed to give capable students in accounting an opportunity to do independent study under faculty supervision in the area of tax. Prerequisites: Recommendation of the instructor and permission of the director.

ACTG 493. Special Studies in Cost. 1-3 credits each semester. Offered fall and spring.
Designed to give capable students in accounting an opportunity to do independent study under faculty supervision in the area of cost. Prerequisites: Recommendation of the instructor and permission of the director.

ACTG 494. Business Practicum. 3-6 credits. Offered fall, spring and summer.
A course, taken by graduating seniors, to give students an opportunity to work in and with local industry to gain insight into the real side of modern business. Forms obtained in accounting office before registration. Grades will be assigned on a credit/no credit basis.

ACTG 499. Honors. 6 credits. Year course. Offered fall and spring.
See catalog section entitled "Graduation with Distinction" and "Graduation with Honors."
Africana Studies

Cross Disciplinary Studies

GAFST 200. Introduction to Africana Studies. 3 credits. Offered fall and spring.
An introductory survey of basic theoretical concepts to analyze the Black experience, with special focus on the general historical process common to Africa and the African Diaspora.

AFST 489. Africana Studies Senior Research Experience. 3 credits. Offered fall and spring.
In this research-oriented experience, students design and complete research projects relevant to their interests in Africana Studies, as well as connect their projects to previous course work and experiences within the Africana Studies minor. Prerequisites: AFST 200, senior standing and permission of instructor.

AIRS

College of Education

AIRS 001. Leadership Laboratory. 0 credits. Offered fall and spring.
This course is a mandatory laboratory in leadership and followership development for AFROTC cadets. As a complement to the air science classes, this laboratory focuses on applying leadership principles and understanding leaders’ responsibilities while emphasizing the benefits of practical experience. JMU students will take AFROTC classes at the University of Virginia for JMU credit. Prerequisite: Permission of the instructor. Corequisite: Any Air Force ROTC class.

AIRS 110. The Foundations of the United States Air Force. 1 credit. Offered fall and spring.
This course introduces the United States Air Force and Air Force Reserve Officers Training Corps. Topics include mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities and communication skills. JMU students will take AFROTC classes at the University of Virginia for JMU credit. Students interested in joining Air Force ROTC should also register for AIRS 001, Leadership Laboratory. Prerequisite: Permission of the instructor.

AIRS 120. The Foundations of the United States Air Force. 1 credit. Offered fall and spring.
This course introduces the United States Air Force and Air Force Reserve Officers Training Corps. Topics include mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities and communication skills. JMU students will take AFROTC classes at the University of Virginia for JMU credit. Students interested in joining Air Force ROTC should also register for AIRS 001, Leadership Laboratory. Prerequisite: Permission of the instructor.

AIRS 210. The Evolution of Air and Space Power. 1 credit. Offered fall and spring.
This course examines general aspects of air and space power through a historical perspective, from the first balloons and dirigibles to the space age global positioning systems of the Persian Gulf War. Topics include principles of war, tenets of air and space power, historical Air Force leaders, and employment of air and space power. JMU students will take AFROTC classes at the University of Virginia for JMU credit. Students interested in joining Air Force ROTC should also register for AIRS 001, Leadership Laboratory. Prerequisite: Permission of the instructor.

AIRS 310. Concepts of Air Force Leadership and Management. 3 credits. Offered fall and spring.
This course studies leadership, management fundamentals and professional knowledge, Air Force personnel and evaluation systems, leadership ethics, and communication skills required of Air Force junior officers. The class examines Air Force leadership and management situations, using case studies as a means of demonstrating and applying the concepts under consideration. JMU students will take AFROTC classes at the University of Virginia for JMU credit. Prerequisite: Permission of the instructor.

AIRS 320. Concepts of Air Force Leadership and Management. 3 credits. Offered fall and spring.
This course studies leadership, management fundamentals and professional knowledge, Air Force personnel and evaluation systems, leadership ethics, and communication skills required of Air Force junior officers. The class examines Air Force leadership and management situations, using case studies as a means of demonstrating and applying the concepts under consideration. JMU students will take AFROTC classes at the University of Virginia for JMU credit. Prerequisite: Permission of the instructor.

American Studies

Cross Disciplinary Studies

GAMST 200. Introduction to American Studies. 3 credits. Offered fall and spring.
This interdisciplinary course examines representations of America and American identity in philosophy, literature and the arts. We investigate conflicts in values and beliefs as shaped by class, gender, race, landscape and “progress.” Students will articulate an informed understanding of their own position in the development of America’s national and international identity.

AMST 490. Special Studies in American Studies. 3 credits. Offered fall and spring.
Independent study of a topic appropriate to the interdisciplinary method of American studies.

Anthropology

Department of Sociology and Anthropology

KEY
A=Archaeology  I=Field Experience
B=Biological Anthropology  R=Required for All Anthropology Majors
C=Cultural Anthropology  W=Writing Intensive

GANTH 195. Cultural Anthropology. 3 credits (C,R). Offered fall and spring.
An introduction to the nature of culture and its relationship to language, economics, politics, kinship and other institutions in diverse cultures. The course also provides an overview of the theories, methods and ethical responsibilities involved in the study of cultural systems and ethnographic writing.
GANTH 196. Biological Anthropology. 3 credits (B,R). Offered fall and spring.
An introduction to the origins, evolution and genetic variability of humans and their relationship to nonhuman primates. Examination of the fossil record, the relationship between biology and culture and human genetics are included. Theories and methods used in the study of biological anthropology are also introduced.

ANTH 197. Archaeology. 3 credits (A,R). Offered fall and spring.
An introduction to archaeology through a survey of the major developments in human cultural evolution focusing on the transition from foraging to agricultural and state-level systems. An examination of the origins and nature of Old and New World civilizations and an overview of archaeological methods and theories are also included.

ANTH 250. Anthropology of the American Southwest. 3 credits (A,C). Offered fall.
This course examines the development of Southwestern societies from early hunter-gatherers to the Native American communities of today. Major issues of anthropological interest, such as the adoption of agriculture, the development of village life, migration and abandonment, the spread of religious "cults," the extent of Mesoamerican influence, and the effects of the Spanish conquest are explored.

ANTH 280. Peoples and Cultures of Sub-Saharan Africa. 3 credits (C). Offered every three semesters.
This is an introductory course emphasizing cultural diversity of sub-Saharan African societies. Basic anthropological concepts are used in analyzing African economics, political systems, marriage patterns and family organization, religious beliefs, and the impacts of colonialism and post-colonial development practices.

ANTH 300. Anthropology of Diet and Nutrition. 3 credits (B,C).
Offered every three semesters.
An evolutionary and cross-cultural perspective on diet and nutrition in human populations. Focus on how and why people choose what to eat, the range and significance of cross-cultural variability in diet, how diets have changed in the evolutionary and recent past, and the health and social significance of these changes. Prerequisite: Any lower-level course in anthropology or permission of the instructor.

ANTH 310. Prehistoric and Pioneer Virginia. 3 credits (A). Offered fall.
A study of the development and diversity of Indian society in Virginia, the initial European settlement and westward expansion. Economic and social problems of initial settlement and the interaction between European and Indian cultures is emphasized.

ANTH 312. The Native Americans. 3 credits (C). Offered every three semesters.
A study of the nature of Indian societies occupying different environmental areas of North America at the time of earliest historic contact. Indian groups such as Shawnee, Mandan, Nuuamitiut, Natchez, Creek, Iroquois and Sioux will be considered.

ANTH/SCI 313. Processes of Social and Cultural Change. 3 credits (A,C). Offered spring.
Investigates the procedures through which a society operates and the manner in which it introduces and incorporates changes. Issues considered include belief, innovation, directed change, coercive change, revitalization and revolution.

ANTH 315. Human Evolution. 3 credits (B). Offered occasionally.
An examination of the evidence for the emergence of humans and the factors which influenced it. Includes a review of fossil and artifact evidence for biological and cultural evolution.

ANTH 325. Aztec, Maya and Their Predecessors. 3 credits (A,C). Offered every two semesters.
Survey of the Olmec, Toltec, Teotihuacan, Maya and Aztec civilizations and the factors leading to their development, persistence and decline.

ANTH 327. Ancient North American Civilizations. 3 credits (A). Offered every three semesters.
Studies the emergence of Native American societies prior to historic contact. Emphasizes prehistoric developments in the eastern United States.

ANTH/HIST 321. Historical Archaeology. 3 credits (A). Offered spring.
The course introduces students to the purposes, subject matter, methodology and historical background of the discipline of historical archaeology. Building on research issues and methodologies of anthropological archaeology and history, the multidisciplinary aspects of this field are introduced through field trips, projects, guest lectures, readings and classroom presentations. Prerequisite: ANTH 197 or HIST equivalent.

ANTH 340. Race, Nation and Culture. 3 credits (C). Offered every three semesters.
Comparative study of the historical and cultural construction of "race," "ethnicity" and "nation." Uses recent anthropological approaches to examine how these identities are related and why they serve as the basis for social movements, conflicts and inequalities around the world.

ANTH 350. Magic, Witchcraft and Religion. 3 credits (C). Offered fall.
Anthropological study of religion in society. The influence of religion on the development of social, legal, governmental and economic aspects of culture is emphasized.

ANTH/SOCI 352. Birth, Death, Sex: Exploring Demography. 3 credits (B,C). Offered every three semesters.
Fertility (birth) and mortality (death) and their biological and social determinants in cross-cultural and evolutionary/historical frameworks. Exploration of the dynamic between the material constraints on and symbolic significance of reproduction, sexuality and death within a cultural context. Critical examination of population growth as a global "problem." Basic demographic methods. Prerequisite: Any lower-level course in anthropology or sociology or permission of the instructor.

ANTH 355. Culture and Ecology. 3 credits (C). Offered spring.
A comparative study of cultures from an ecological perspective. The course focuses on the effects of climate, environment and population interaction on shaping and determining human behavior. Basic ecological concepts and theories are introduced as they relate to the study and explanation of human behavior.

ANTH 360. Medical Anthropology. 3 credits (B,C). Offered every three semesters.
The evolutionary, ecological and sociocultural context of health and disease. A multi-level, cross-cultural exploration of disease including genetic and macro-level social inputs. Topics include Darwinian medicine, cultural ecology of infectious disease, including emergent diseases, the biology of poverty, maternal-child health and the history of global health problems. Prerequisite: GANTH 195, GANTH 196 or permission of the instructor.

ANTH 364. U.S./Latin American Borders. 3 credits (C). Offered every three semesters.
This course examines the experiences of Latin American migrants to the United States. It stresses the cultural expression of those experiences, globalization and its effects on local communities in Latin America, the U.S. responses to migration and migrants. Prerequisite: One course on Latin America.

ANTH 366. Anthropology of War. 3 credits (A,C). Offered every three semesters.
This course examines the causes, conduct and consequences of warfare in non-state societies using both ethnographic and archaeological data. Case studies drawn from throughout the world are used to examine topics such as the co-evolution of war and society, the impact of colonialism on native warfare, the process of making peace, and claims about the biological "inevitability" of war.
ANTH 395. Special Topics in Anthropology. 3 credits (C). Offered occasionally.
This course analyzes contemporary American society in relation to popular cultural formations and representations. Cultural expressions found in music, literature, theatre, film, television, cyberspace and sports will be examined with respect to values, sentiments, identity constructions and lived experiences of differentially situated social actors.

ANTH 370. Topics in the Anthropology of Gender. 3 credits (C). Offered every three semesters.
This course examines the many ways in which gender is constructed and negotiated in different historical and social contexts. Topics will vary with the instructor to include both cultural and bicultural perspectives.

ANTH 373. Anthropological Perspectives on Environment and Development. 3 credits (C). Offered fall and spring.
This seminar provides a history of key ideas and figures in environmental anthropology, as well as examines why this field is, by necessity, interdisciplinary. Within this context, we will use specific case studies to examine ways in which the concepts and theories of “development” and “environment” have been produced, perpetuated, manipulated and challenged in different geographic and politico-economic circumstances. Prerequisites: GANTH 195 or permission of the instructor.

ANTH 375. History of Theory in Sociocultural Anthropology. 3 credits (C,R,W). Offered fall and spring.
An examination of the major theoretical traditions in social and cultural anthropology. Important theoreticians and the historical contexts in which their work emerged are discussed. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: GANTH 195 and junior standing.

ANTH 380. Chinese Society and Culture. 3 credits (C). Offered every three semesters.
An examination of modern China's social, cultural and political structure from the 17th century to the present. Emphasis is placed on local level systems (town, village, lineage, family) and the roles they have played in China's transition from an agricultural to an industrial society.

ANTH 382. Cultures of Appalachia. 3 credits (C). Offered occasionally.
An overview of the peoples, cultures and special problems of the Appalachian region.

ANTH/SoCI 390. Topics in Cultural Studies. 3 credits (C).
This course explores contemporary culture through a “cultural studies” lens, an interdisciplinary perspective interested in using empirical knowledge to encourage more just human relations. Specific topics of investigation will vary by semester, but each course will cover cultural studies’ intellectual history and its application to cultural expressions found in everyday life, film, music and text.

ANTH 391. Study Abroad. 1-8 credit hours (C,F). Offered summer.
Designed to encourage students to enhance their academic programs through studying abroad. Arrangements must be made with a faculty member who will direct the study with preparatory instructions and final requirements. Prerequisites: Permission of department head.

ANTH 395. Special Topics in Anthropology. 3 credits (May be A,B or C). Offered occasionally.
Examination of selected topics which are of current importance to anthropology. May be taken for a maximum of six hours credit toward the major.

ANTH 420. Evolution of Human Behavior. 3 credits (B). Offered spring.
An exploration of human behavior from an evolutionary perspective. Darwinism, life history theory and the fundamentals of heredity will be reviewed and employed in the analysis of human behavior from bipedalism to morality. Data from the fossil and archeological records, genetics, non-human primate studies, and ethnographic fieldwork will be used. Prerequisite: GANTH 196 or permission of the instructor.

ANTH 435. Ethnographic Genres and Methods. 4 credits (C,F).
Offered fall and spring.
Explores ethnographic methods and conventions of ethnographic writing through close reading, analysis and production of ethnographic texts. Students develop critical skills in assessing ethnographic practice by examining how ethnographies are shaped by authors’ fieldwork experiences, intellectual traditions and theoretical perspectives. Students engage in fieldwork and craft their own ethnographic accounts. Prerequisite or corequisite: ANTH 375.

ANTH 455. Archaeology: Methods of Analysis and Interpretation. 3 credits (A,F).
Offered spring.
A review of the nature of inquiry, recent theory and its practical implications and applications of acquiring, analyzing and interpreting archaeological data. In addition to training in methods of analysis used in contemporary practice, students will gain experience in archaeological report preparation. Prerequisites: GANTH 195 and ANTH 197.

ANTH 465. Anthropology Course Assistantship. 1-6 credits, only 3 of which can apply to the major (May be A,B or C). Offered fall and spring.
Students participate as course assistants in anthropology. Assistantships provide students with a sense of what it is like to teach an anthropology course by allowing them to work closely with faculty members through different phases of course preparation, presentation and evaluation. Assistantships also allow for a deeper understanding of course material by providing opportunities for student assistants to lead discussion and to help their peers review the material outside of the classroom. Prerequisites: Students must have junior/senior standing, must have earned a grade of "B" or better in the course for which s/he will serve as assistant, and may register by faculty invitation only.

ANTH 486. Internship in Anthropology. 1-6 credits (May be A,B or C). Offered fall and spring.
Designed to encourage students to enhance their academic programs by employing and refining anthropological skills through internships in public or private agencies. Arrangements must be made with a faculty member who will oversee the internship. Prerequisite: By permission only.

ANTH 490. Special Studies in Anthropology. 1-3 credits (May be A,B or C). Offered fall and spring.
Course offers students an opportunity to do independent study under staff supervision. Admission only by recommendation of the instructor and permission of the department head.

ANTH/ARTH/HIST 492. American Material Culture. 3 credits (A). Offered every two semesters.
A broad introduction to the multidisciplinary “field” of material culture studies through readings, written assignments, in-class exercises and field trips. The course introduces ways of looking at and learning from objects and examines how scholars from several disciplines have used material culture in their work. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

ANTH 494. Field Techniques in Archaeology. 4-8 credits (A,F).
Offered summer.
Laboratory course directed at teaching students the basic field techniques and procedures of historic and prehistoric archaeology. Classroom lectures will present techniques and relevant aspects of method and theory.

ANTH/HIST 496. Research Thesis. 2 or 4 credits (A). Offered fall and spring.
Students will gather, analyze and interpret archaeological/historical data over two semesters. Students will work on a project that demonstrates theory, research design, data gathering and analysis, culminating in a written thesis. The course meets the capstone requirement for the historical archaeology minor but is also available to students in history and anthropology. Prerequisite: Junior or senior standing.

ANTH 499 A,B,C. Honors. 6 credits. Year course (May be A,B or C).
Offered fall and spring.
An independent research topic initiated and completed by qualified senior majors who want to graduate with distinction.
Arabic

Department of Foreign Languages and Literatures

ARAB 101-102. Elementary Arabic (4, 1). 4 credits each semester. Offered fall and spring.
The fundamentals of Modern Standard Arabic through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour of work a week in the language laboratory.

ARAB 211-212. Intermediate Arabic. 6 credits each semester. Offered May and June.
The fundamentals of Arabic through listening, speaking, reading and writing. The first semester is the equivalent of ARAB 101-102 and the second is equivalent to ARAB 231-232. Offered May and June summer term only.

ARAB 231-232. Intermediate Arabic. 3 credits each semester. Offered fall and spring.
A through review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college Arabic or equivalent.

Art

School of Art and Art History

ART 140. Two-Dimensional Design (0, 6). 3 credits. Offered fall and spring.
Application and appreciation of the principles and elements of design, with emphasis on line, form, color and texture as applied to two-dimensional space.

ART 160. Drawing I (0, 6). 3 credits. Offered fall and spring.
An introductory course composed of problems in landscape, perspective, figure and still-life in several media.

GART 200. Art in General Culture. 3 credits. Offered fall and spring.
An exploratory course that aims to develop a non-technical, general cultural understanding of the space arts, such as architecture, painting, sculpture and industrial design. Emphasis is on the contemporary.

ART 240. Three-Dimensional Design (0, 6). 3 credits. Offered fall and spring.
A course exploring the basic problems in three-dimensional design.

ART 242. Color Theory (0, 6). 3 credits. Offered fall and spring.
An exploration of the nature and theories of color. Students will study the expressive and symbolic qualities of master colorists and apply this knowledge to theoretical and practical problems. Prerequisite: ART 140.

ART 260. Drawing II (0, 6). 3 credits. Offered fall and spring.
A continuation of ART 160 involving more complex problems with emphasis on composition and expressive possibilities of a variety of media including ink, pencil, conte, charcoal and experimental materials. Prerequisite: ART 160 or permission of the instructor.

ART 280. Foundations Seminar. 3 credits. Offered fall and spring.
A required course for studio art majors focused on the exploration and exchange of ideas related to choosing a professional art career. Contemporary issues and responsibilities faced by emerging artists are emphasized. Students will write a descriptive analysis of the various visual art disciplines offered by JMU and construct an artist’s statement. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major. Corequisites: ART 140, ART 240 and GARTH 206.

ART 310. Art Activities in the Elementary School. (1, 4). 3 credits. Offered fall and spring.
A study of the aims and philosophy of art education in elementary school with an emphasis on child growth and development through art. Experience with art techniques and materials suitable from nursery school through grade eight with emphasis on appropriate motivational and teaching methods. Includes intensive field experiences for elementary grade levels.

ART 311. Secondary Art Education Methods. 3 credits. Offered fall and spring.
The study of art education methods, philosophy and contemporary practices as related to the middle and senior high school in public education. Includes class presentations, observation and practicum in the secondary grades. Prerequisites: PSYC 270 and EDUC 360.

ART 313. Introduction to Art Therapy (1, 4). 3 credits. Offered fall and spring.
A survey dealing with the origins, historical development and major theoretical trends in the field of art therapy. Examines a variety of patient/client populations and treatment approaches. Visits to institutional settings will be included. Intended primarily for students in the arts, education and social sciences.

ART 317. Methods of Art Criticism. 3 credits. Offered fall and spring.
The practical analysis and interpretation of works of art through oral and written forms. Emphasis is on the practice of art criticism in public settings, such as the school classroom, art museum and college art studio.

ART 318. Visual Arts Across the Curriculum (1, 4). 3 credits. Offered fall and spring.
Explores ways in which the art teacher can promote relationships between art and other subjects within the public school curriculum. Emphasis will be placed on how art experiences can be used to teach skills and concepts associated with other subjects. Includes a range of intensive field experiences at the middle grade level.

ART 321. Weaving and Other Fiber Arts (0, 9). 3 credits. Offered fall and spring.
Introduction to and practice in basic weaving and other fiber arts. Emphasis will be placed on floor loom weaving and surface design on the fabric. Prerequisites: ART 140 and ART 160.

ART 322. Metal and Jewelry (0, 9). 3 credits. Offered fall and spring.
An introduction to designing and executing jewelry and related objects through various fabrication and finishing techniques, and the exploration of metal as a medium of personal aesthetic expression. Prerequisites: ART 140 and ART 160.

ART 323. Papermaking (0, 9). 1-3 credits, repeatable. Offered fall and spring.
A creative approach to handmade paper as an art medium. Emphasis will be on one-of-a-kind pieces. Cast paper, mould and deckle, mould formation, collage and assemblage techniques will be explored. Prerequisites: ART 140 and ART 160.

ART 325. Ceramics (0, 6). 3 credits. Offered fall and spring.
Exploration of ceramic hand-building processes and introduction to use of the potter’s wheel. Prerequisites: ART 140 and ART 160.

ART 326. Intermediate Ceramics (0, 9). 3 credits. Offered fall and spring.
Studio practice in forming, firing and glazing ceramic ware. Wheel-thrown pottery will be emphasized. Fundamentals of glaze composition will be given in lectures. Prerequisite: ART 325.

ART 328. Stained Glass (0, 9). 1-3 credits, repeatable. Offered fall and spring.
A comprehensive course in the design and construction of stained glass panels or windows. Traditional glazing techniques of lead came and copper foil will be explored, as well as epoxy resin bonding of dalle de verre. Glass surface decorating techniques of sandblasting, etching, plating, fusing, glue chipping and painting will be demonstrated. Prerequisites: ART 140 and ART 160.

ART 331. Intermediate Weaving and Other Fiber Arts (0, 9). 3 credits. Offered fall and spring.
Introduction to surface design techniques such as painting and printing on fabric. Further work may be in this area (in which case no prerequisites apply) or in weaving or other fiber techniques. Prerequisite: ART 321 or permission of the instructor.

ART 333. Intermediate Metal and Jewelry (0, 9). 1-3 credits, repeatable. Offered fall and spring.
An intermediate course offering further exploration of metal as a medium of personal aesthetic expression as well as more advanced technical experience and experimentation. Prerequisite: ART 322 or equivalent.
ART 355. Sculpture (0, 9). 3 credits. Offered fall and spring.
Problems in three-dimensional form using traditional and modern techniques. Processes of modeling in clay, mold making, casting, carving in wood and stone and welded metal sculpture are explored. Prerequisite: ART 240.

ART 356. Intermediate Sculpture (0, 9). 3 credits. Offered fall and spring.
A study in casting techniques for sculpture using the lost wax process. Foundry operations, cold cast methods, ceramic shell and fiberglass are also explored. Prerequisite: ART 335.

ART 357. Digital Photography. 3 credits. Offered fall and spring.
An introduction to the techniques of 3-D modeling in computer animation. Lectures, demonstrations and projects will involve the professional gaming and animation studios’ methods of modeling digital characters and objects. Prerequisites: ART 140 and ART 160.

ART 358. Animation: 3-D Character Animation (0, 9). 3 credits.
Offered fall and spring.
An introduction to the techniques of 3-D animation. Lectures, demonstrations and projects will involve the professional gaming and animation studios’ methods of modeling digital characters, objects and dynamic forces. Prerequisites: ART 140 and ART 160.

ART 359. Printmaking: Relief, Intaglio and Monotype (0, 9). 3 credits. Offered fall and spring.
An introduction to the history and techniques of relief, intaglio and monotype printing. Lectures, demonstrations and projects will involve stone and plate lithography, color registration and related photographic processes. Prerequisites: ART 140 and ART 160.

ART 360. Photography (0, 9). 3 credits. Offered fall and spring.
A creative approach to photography with emphasis on understanding materials and techniques. Students must provide a fully manual 35mm camera and a light meter which may be built into the camera or separate. Prerequisites: ART 140 and ART 160.

ART 361. Intermediate Photography (0, 9). 3 credits. Offered fall and spring.
Intensive exploration of advanced black and white photography and an introduction to view camera techniques. Prerequisite: ART 355.

ART 362. Digital Photography. 3 credits. Offered fall and spring.
An intensive exploration of digital photography with an introduction to digital camera techniques, combinations of traditional and digital photographic methods, photo-editing and modes of output. Prerequisite: ART 355.

ART 363. Figure Drawing (0, 9). 3 credits. Offered fall and spring.
An introductory course with problems stressing the fundamental skills, approaches and concepts involved in drawing the human figure. Prerequisites: ART 160 and ART 260.

ART 364. Painting (0, 9). 3 credits. Offered fall and spring.
Introduction to basic materials and techniques in oil or acrylic painting. This class extends previous practice with design and drawing through introductory experiences in painting. Prerequisites: ART 140 and ART 160.

ART 365. Watercolor (0, 9). 3 credits. Offered once a year.
Study of and practice in transparent and opaque watercolor techniques. Prerequisites: ART 140 and ART 160.
ART 460. Advanced Figure Drawing. 1-3 credits, repeatable. Offered once a year.
An advanced drawing course stressing inventive and in-depth approaches to portraying the human figure. Prerequisite: ART 360.

ART 462. Advanced Painting (0, 9). 1-3 credits, repeatable. Offered fall and spring.
Advanced problems in media selected by the student with the advice of the instructor. Prerequisite: ART 362.

ART 466. Advanced Watercolor (0, 9). 1-3 credits, repeatable. Offered once a year.
Advanced problems in the use of watercolor and related water-based media. Prerequisite: ART 366.

ART/ARTH/GRPH/INDE 488. Topics in Art, Art History, Graphic Design and Interior Design. 3 credits. Offered fall and spring.
Study of selected topics in art, art history, graphic design or interior design at the advanced level. May be repeated when course content changes. See e-campus for current topics.

ART/ARTH/GRPH/INDE 490. Independent Studies in Art, Art History, Graphic Design or Interior Design. 1-3 credits, repeatable. Offered fall and spring.
Independent activity, such as research or studio practice, under faculty supervision. Projected studies in any area of the school’s offering must be arranged with the instructors who will direct them. Offered only with the consent of the director. Prerequisite: GRPH 250 for GRPH 490.

ART/ARTH/GRPH 495. Internship in Art, Art History or Graphic Design. 1-8 credits. Offered fall and spring.
An off-campus program prepared and monitored on an individual basis. Internships are designed to provide practical experience in the arts. Prerequisites: Permission of the instructor and director. ART 494 for ART/ARTH 495 in museums and galleries. GRPH 250 for GRPH 495.

ART/ARTH/GRPH 499. Honors. 6 credits total for three semesters (1, 3, 2). Offered fall and spring.

Art History
School of Art and Art History
GARTH 205. Survey of World Art I: Prehistoric to Renaissance. 3 credits. Offered fall and spring.
An introduction to the art and architecture of the world from cave painting through European pre-Renaissance art. Includes ancient through medieval art in Europe and the Near East, as well as Asian and African arts.

GARTH 206. Survey of World Art II: Renaissance to Modern. 3 credits. Offered fall and spring.
Introduction to the art and architecture of the world from the Renaissance to Modern times. Includes European Renaissance, Baroque, Enlightenment, 19th and 20th centuries, as well as Asian and African arts.

ARTH 210. African Art and Culture in the Humanities. 3 credits. Offered fall and spring.
An interdisciplinary introduction to African art and culture with topics focusing on life ways, music, religion, philosophy, art, literature and cinema. This course provides a strong background for upper-division coursework work in the arts of African and the African Diaspora, as well as for students pursuing degrees in history and anthropology. May be counted as GHUM 252.

ARTH 300. Art History Seminar. 3 credits. Offered fall and spring.
Exploration of various methodological approaches in the history of art, including connoisseurship, iconography, formalism, psychological studies and interpretations of art and society. Students will examine contrasting interpretations of major works of art. Seminar format. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major. Prerequisite: GARTH 205, GARTH 206 or permission of the instructor.

ARTH 303. History of Design. 3 credits. Offered fall and spring.
This course is an investigation into the domains of graphic and industrial design. The material will explore these disciplines through reading, lecture and an acquired visual literacy of the contextual, ideational and philosophic agendas.

ARTH 304. History of Photography. 3 credits. Offered fall and spring.
A survey of photography as an art form from its discovery to the present day. Emphasis is on 20th-century developments and recent contemporary trends.

ARTH 305. History of Decorative Arts. 3 credits. Offered fall and spring.
A history of the decorative arts in Europe and America from c. 1200 to c. 1930. This course provides a stylistic and contextual analysis, concentrating on domestic furnishings, including textiles, furniture, metals, ceramics and glass. Prerequisite: GARTH 205 or GARTH 206.

ARTH 313. Masterpieces of Italian Renaissance Art. 3 credits.
[Semester in Florence only] Offered fall and spring.
A survey of Italian Renaissance painting and sculpture (1280-1550), including the works of Giotto, Donatello, Masaccio, Fra Angelico, Botticelli, Leonardo and Michelangelo. Weekly visits to the Uffizi, San Marco, the Accademia and other Florentine museums.

ARTH 314. Masterpieces of Spanish Art. 3 credits. (Semester in Salamanca only.) Offered fall and spring.
A survey of art in Spain from prehistoric cave painting through 20th-century art. Emphasis is given to 17th-18th century Baroque and modern artists including El Greco, Velasquez, Goya, Gaudi and Picasso. Visits to Altamira, the Alhambra, the Prado, Toledo, Santillana del Mar and other sites.

ARTH 315. Masterpieces of British Architecture. 3 credits. (Semester in London only.) Offered fall and spring.
This history and theory of British architecture from prehistoric to modern times. Weekly visits to the British Museum, Hampton Court, Avebury, Bath, Chiswick, the Victoria Albert Museum and other monuments.

ARTH 316. Masterpieces of British Art. 3 credits. (Semester in London only.) Offered fall and spring.
Survey of painting and sculpture in Britain (1530-1860) concentrating on 18th/19th-century painting. British art is viewed in the context of European civilization. Weekly visits to London museums including the Portrait Gallery, Sir John Soane’s House, the Wallace Collection and the Tate Gallery.

ARTH 317. Masterpieces of French Art. 3 credits. (Semester in Paris only.) Offered fall and spring.
A survey of French art from the Middle Ages to the modern day. Weekly visits to the major museums of Paris including the Louvre, the Musee D’Orsay, Cluny and Centre Pompidou.

ARTH 320. Travel Study in Art History. 3 credits. Offered fall and spring.
Art history credit is available to students participating in formal travel study programs with an emphasis on art history. Students maintain a journal with an emphasis on their art history experiences and write a research paper. Prerequisites: Permission of the program leader and art history coordinator. Formerly ARTH 419.

ARTH/ART/GRPH/INDE 389. Topics in Art, Art History, Graphic Design and Interior Design. 3 credits. Offering varies.
Study of selected topics in art, art history, graphic design or interior design at the intermediate level. May be repeated when course content changes. See e-campus for current topics. Prerequisite: GRPH 250 for graphic design topics.

Independent activity at the intermediate level, such as research or studio practice, under faculty supervision. Projected studies in any area of the school’s offering must be arranged with the instructors who will direct them. Offered only with the consent of the director. Prerequisite: GRPH 250 for GRPH 290.
ARTH 419. Topics in African Art. 3 credits. Offered fall and spring. An introduction to the varied and interdisciplinary “field” of public history, such as community/local history, historic preservation, archives, historical archaeology, museum studies, business and policy history, documentary editing and publishing, and documentary films, through readings, class discussions, occasional guest speakers and occasional field trips.

ARTH/HIST 408. The Museum: Histories and Controversies. 3 credits. Offered every other spring as of spring 2007. This seminar centers on art museums in the United States. Topics include the historical development of museums, related cultures of display, recent debates on institutional mission and responsibility, and contemporary artists who employ the museum as medium, subject matter or site. Required field trips. Prerequisite: ARTH 208 or permission of instructor.

ARTH 410. African Art: The Sahara and Northern Sahel. 3 credits. Offered fall and spring. An introduction to the arts and cultures of northern and northwestern Africa. The diverse, rich heritage of Africa’s arts will be explored through the major style areas of Sahara and northern sub-Saharan Africa including prehistoric rock arts, Egypt, northern Africa, Christian northeastern Africa and Islamic North Africa. Formerly ARTH 301.

ARTH 412. African Art: Sub-Saharan. 3 credits. Offered fall and spring. A survey of the arts and cultures of sub-Saharan Africa, focusing on the major style areas of the continent. Coverage will include: the historic sites of Nigeria, the Guinea Coast, and central, eastern, and southern Africa. Prerequisite: ARTH 208, ARTH 210 or permission of instructor.

ARTH 416. Arts of Oceania. 3 credits. Offered fall and spring. An introduction to the visual arts and cultures of Oceania (the South Pacific). The major style areas of Polynesia, Melanesia and Micronesia will be explored. Prerequisite: ARTH 208, ARTH 210 or permission of the instructor.

ARTH 419. Topics in African Art. 3 credits. Offered fall and spring. Topics in African art will deal with the current thematic or methodological issues such as contemporary African arts and artists, arts of the African Diaspora, a particular media (such as architecture or the textile arts), portraiture and identity, the royal arts of Africa, African film and performance, or gender in the arts of Africa. Prerequisite: ARTH 208, ARTH 210 or permission of the instructor.

ARTH 420. Ancient Art. 3 credits. Offered fall and spring. A study of major works selected from the Egyptian, Mesopotamian, Greek, Etruscan and Roman cultures. Considers themes such as the development of sacred places, royal art and architecture, and artistic conventions in early civilizations. Prerequisite: ARTH 208 or permission of the instructor. Formerly ARTH 402.

ARTH 424. Arts of Ancient Egypt. 3 credits. Offered fall and spring. A study of the arts and culture of Ancient Egypt (c. 3000 B.C. to c. 300 B.C.). This course will focus on the art and architecture of the Old and New Kingdoms and also examine the enduring fascination with this unique artistic heritage from the excavations of Napoleon to the present. Prerequisite: ARTH 208 or ARTH 209.

ARTH 430. Far Eastern Art. 3 credits. Offered fall and spring. A survey of East Asian art from prehistoric times to 19th century colonialism. Emphasis is on the areas of major production: India, China and Japan, with less attention to such centers as Cambodia, Siam and Korea. Prerequisite: ARTH 208 or ARTH 209. Formerly ARTH 403.

ARTH 440. Early Medieval Art. 3 credits. Offered fall and spring. Survey of Early Christian, Hiberno-Saxon and Byzantine art 300-1200. Examines painting, mosaics, manuscripts illumination and the development of church design in Italy and the Byzantine World. Considers cross-fertilization of Pagan, Christian, Islamic and Barbarian arts in Western Europe in the Early Middle Ages. Prerequisite: ARTH 208 or permission of the instructor.

ARTH 442. Art of Later Middle Ages. 3 credits. Offered fall and spring. A study of Western European arts and architecture in the later Middle Ages with concentration on Romanesque and Gothic styles (1000-1400). Examines church construction and allied arts around the millennium and the development of Gothic architecture, sculpture and painting in France, Italy and England. Prerequisite: ARTH 208 or permission of the instructor.

ARTH 444. Gothic and Gothic Revival Architecture. 3 credits. Offered fall and spring. Survey of Gothic architecture in France, England and Italy 1150-1500 and its influence in England and America 1750-1910. Examines the design of major cathedrals and regional European Gothic styles. Explores their influence upon Walpole, Pugin, Ruskin and other champions of Gothic Revival. Prerequisite: ARTH 208, ARTH 210 or permission of the instructor.

ARTH 446. Italian Renaissance Art. 3 credits. Offered fall and spring. A survey of the development of Italian Renaissance art and architecture 1300-1550. Focuses on themes such as the revival of classical art, the influence of humanism and Neo-Platonism, the invention of perspective and the formation of the Early and High Renaissance styles. Prerequisite: ARTH 208 or permission of the instructor. Formerly ARTH 404.

ARTH 448. Studies in Leonardo and Michelangelo. 3 credits. Offered fall and spring. Seminar that examines the artworks of Leonardo da Vinci and Michelangelo Buonarroti. Discusses issues such as the artist’s creative process, the development of the artist’s style, the patron’s role in artwork and inter-relationships between the artist’s visual and literary works. Prerequisite: ARTH 208 or permission of the instructor.

ARTH 449. Topics in Renaissance Art. 3 credits. Offered fall and spring. Topics in Renaissance art may include studies of major Italian or Northern Renaissance artists, the development of linear perspective, the Renaissance tomb chapel, or art and politics of the Protestant Reformation. Prerequisite: ARTH 208 or permission of the instructor. Formerly ARTH 484.

ARTH 450. Baroque Art. 3 credits. Offered fall and spring. A survey of European art and architecture of the 17th century. This course will focus on Baroque art and its cultural context in Italy, France, Britain and Holland. Prerequisite: ARTH 208 or permission of the instructor. Formerly ARTH 406.

ARTH 452. Eighteenth Century Art. 3 credits. Offered fall and spring. A survey of the major European artistic movements of the 18th century. This course will focus on the development of the Rococo and Neo-classical styles in architecture, sculpture and painting. Prerequisite: ARTH 208 or permission of the instructor. Formerly ARTH 407.

ARTH 459. Topics in Seventeenth and Eighteenth Century Art. 3 credits. Offered fall and spring. Topics in this course may include studies of particular artists such as Rembrandt, Caravaggio or Watteau, studies of particular styles such as the Rococo or thematic studies such as the history of garden design or the development of art theory. Prerequisite: ARTH 208 or permission of the instructor.

ARTH 460. Nineteenth Century Art. 3 credits. Offered fall and spring. A study of European art (1750-1900) concentrating on Neoclassicism, Romanticism, Realism, Impressionism and Symbolism. Major topics include nationalism, historicism and the advent of new modes of representation. Prerequisite: ARTH 208 or permission of the instructor. Formerly ARTH 408.

ARTH 469. Topics in Nineteenth Century Art. 3 credits. Offered fall and spring. Topics in nineteenth century art may include studies of major artists, such as Caspar David Friedrich or Edouard Manet, specific artists groups like the pre-Raphaelite brotherhood, or thematic issues such as the relationship between art and nationalism. Prerequisite: ARTH 208.
ARTH 470. Modern Art from 1900-1945. 3 credits. Offered fall and spring.
Principle trends in European and American art – painting, sculpture, photography, film, architecture – during the first decades of the century. Central themes include art and nationalism, modernity and industry/technology, impact of popular culture, and art theory and criticism. Prerequisite: ARTH 202 or permission of the instructor. Formerly ARTH 410.

ARTH 472. Modern Art Since 1945. 3 credits. Offered fall and spring.
A study of the many developments and trends in American and European art since 1945. This course will focus on such movements as abstract expressionism, pop, conceptual art, installation art, video, film and computer art with an understanding of the theoretical basis of those movements and the development of the art market during this period. Prerequisite: ARTH 206 or permission of the instructor. Formerly ARTH 411.

ARTH 474. The New Media and Contemporary Art. 3 credits.
Offered fall and spring.
Advanced seminar that addresses impact of cultural politics and technology on how we make, evaluate and "speak" about art. Focus on a variety of media including video, multi-media installations, conceptual art, computer-generated imagery, virtual "reality," contemporary film and digital photography. Prerequisite: ARTH 470, ARTH 472 or permission of the instructor.

ARTH 476. Modern Architecture. 3 credits. Offered fall and spring.
Survey of architecture from 1851 to the present day. Thematic investigations will include regional, philosophical and technical developments in architectural space. Architects may include Labrouste, Berlage, Wagner and Richardson, through Wright, Mies, Le Corbusier, to the avant-garde Muncutt, Siza, Nouvel and Mockbee. Prerequisite: ARTH 206 or permission of the instructor. Formerly ARTH 412.

ARTH 479. Topics in Twentieth Century Art. 3 credits. Offered fall and spring.
Topics in twentieth century art may include studies of contemporary painters (i.e., Gerhard Richter), sculptors (i.e., Kiki Smith), performance and video artists (i.e., Bill Viola) or thematic issues such as the relationships among art, technology and gender/racial politics. Prerequisite: ARTH 470, ARTH 472 or permission of the instructor.

ARTH 480. American Art to 1870. 3 credits. Offered fall and spring.
American painting, sculpture, architecture and decorative arts from the Colonial period through 1870. Topics will include Colonial portraiture, African American aesthetics, the definition of folk art, nationalism and landscape painting, and the question of American exceptionalism. The course will also introduce students to problems of interpretation in current scholarship. Prerequisite: ARTH 206.

ARTH 482. American Art from 1870. 3 credits. Offered fall and spring.
American painting, sculpture, architecture and decorative arts from 1870 to 1945. The course will address topics such as the American Renaissance, the Harlem Renaissance, Chicago School architecture, masculinity in Western American art, notions of decay in turn-of-the-century art and American modernism. It will also introduce methodological debates in current scholarship. Prerequisite: ARTH 206.

ARTH 484. Art of the Americas. 3 credits. Offered fall and spring.
Art of indigenous peoples in the Americas (Meso, Central, South and/or North) before European contact. The course will examine domestic and state architecture, painting, textiles, ceramics, metalwork, and earthworks within the context of geographic, state, religious and social issues. Other topics include museum display, repatriation and western taxonomies.

ARTH 486. Monticello. 3 credits. Offered fall and spring.
A seminar on the architecture and material culture of Thomas Jefferson's Monticello. The course will examine the house's design, artwork, decorative arts, mechanical devices, landscape/garden design and Mulberry Row. Topics will include African American artisans at the Monticello joinery, Jefferson's Indian Hall, and European and African American domestic life in the Federal Period. Required field trips. Prerequisite: Permission of the instructor.

ARTH/ART/GRPH/INDE 489. Topics in Art, Art History, Graphic Design and Interior Design. 3 credits. Offered fall and spring.
Study of selected topics in art, art history, graphic design or interior design at the advanced level. May be repeated when course content changes. See e-campus for current topics.

ARTH/ART/GRPH/INDE 490. Independent Studies in Art, Art History, Graphic Design or Interior Design. 1-3 credits, repeatable. Offered fall and spring.
Independent activity, such as research or studio practice, under faculty supervision. Projected studies in any area of the school's offering must be arranged with the instructors who will direct them. Offered only with consent of the director. Prerequisite: GRPH 250 for GRPH 490.

ARTH/ARTH 492. American Material Culture. 3 credits.
Offered fall and spring.
A broad introduction to the multidisciplinary "field" of material culture studies through readings, written assignments, in-class exercises and field trips. The course introduces ways of looking at and learning from objects and examines how scholars from several disciplines have used material culture in their work. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

ARTH/HIST 493. Historic Preservation. 3 credits. Offered fall and spring.
An introduction to the philosophy and techniques of historic preservation, guidelines for restoration, state and national register forms and procedures, historic architecture, structural analysis, restoration techniques, as well as the business aspects of historic preservation projects. Field trips are a major component of the course. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

ARTH/HIST 494. Introduction to Museum Work. 3 credits.
Offered fall and spring.
A study of the philosophy and practice of museum work including the areas of exhibit design, conservation registration, education and administration. Subject is taught from the perspective of the museum profession and is applicable to diverse disciplines and types of collections.

ARTH/ART/GRPH 495. Internship in Art or Art History or Graphic Design. 1-8 credits. Offered fall and spring.
An off-campus program prepared and monitored on an individual basis. Internships are designed to provide practical experience in the arts. ARTH 494 is a prerequisite for internships in museum and galleries. Prerequisites: Permission of the instructor and director. ARTH 494 for ART/ARTH 495 in museums and galleries. GRPH 250 for GRPH 495.

ARTH/ART/GRPH 499. Honors. 1-3 credits.
Offered fall and spring.
1-3 credits, 6 credits total for three semesters (1, 3, 2). Offered fall and spring.

Athletic Training Education Program

Department of Health Sciences

ATEP 205. Introduction to Athletic Training (2, 2). 3 credits.
Offered fall and spring.
This course provides a broad introduction to the profession of athletic training. Lectures will focus on the domains of athletic training. Emphasis will be placed on basic emergency management as well as injury prevention including environmental issues, strength and conditioning, and selection of equipment. Laboratory will mirror lecture.

ATEP 206. Recognition and Management of Athletic Injuries. 3 credits. Offered spring and summer.
Building on the concepts learned in ATEP 205, the course will emphasize the recognition of common athletic injuries. Pathology, mechanisms of injury, signs and symptoms, evaluation findings, and basic management of injuries will be explored. Athletic injuries of special populations will also be addressed. Prerequisites: BIO 290 and ATEP 205.
ATEP 291. Pre-Professional Practicum in Athletic Training. 1 credit. Offered spring.
This course is designed to help students better understand the duties and responsibilities of the athletic trainer. By focusing on psychomotor skills and the application of didactic knowledge, students build a foundation which prepares them for future clinical rotations. Prerequisite: Permission of the instructor.

ATEP 304A. Upper Quarter Evaluation (2, 2). 3 credits. Offered fall.
This course systematically focuses on orthopedic and neurological evaluation including functional testing of athletic injuries. The upper quarter consists of the upper extremity, head, neck and thorax. Other topics include management of crisis situations and facial injuries related to athletic participation. Prerequisite: ATEP 206.

ATEP 304B. Lower Quarter Evaluation (2, 2). 3 credits. Offered spring.
This course systematically focuses on orthopedic and neurological evaluation including functional testing of athletic injuries. The lower quarter consists of the lower extremity, pelvis and lumbar spine. Other topics include management of internal injuries and sudden death related to athletic participation. Prerequisite: ATEP 304A.

ATEP 305. Rehabilitation in Athletic Training: Upper Extremity. 3 credits. Offered spring.
This course explains the rehabilitation process of upper-extremity muscular and joint injuries related to athletic activities. Additional topics include prevention of athletic injuries and aquatic rehabilitation. Prerequisite: BIO 290.

ATEP 306. Therapeutic Modalities (3, 2). 4 credits. Offered fall.
This course provides a thorough overview of tissue injury, inflammatory response, healing process and neurophysiology applied to musculoskeletal injuries. Theory, application and clinical decision-making processes using therapeutic modalities during rehabilitation will be emphasized. Documentation, purchasing and maintenance are also addressed. Prerequisites: BIO 270 and ATEP 206 or permission of instructor.

ATEP 307. Field Applications in Athletic Training. 2 credits. Offered fall.
This course is designed for athletic training students to meet the educational competencies for national accreditation in the following areas: development of risk management/emergency action plans, prevention of injuries associated with the physically active, utilization of diagnostic tools and an overall understanding of protective equipment. Prerequisite: Admission to clinical component of athletic training curriculum.

ATEP 350. Measurements and Testing in Athletic Training. 2 credits. Offered fall.
The purpose of this course is to introduce and develop proficiency with measurement techniques frequently used in athletic training. Students will learn clinical evaluation techniques such as manual muscle testing, goniometry, volumetric measurements and girth measurements. How these measures are used in research will also be presented. Prerequisite: Admission to clinical component of athletic training curriculum.

ATEP 355. Infectious Disease Control. 1 credit. Offered spring.
Discussion includes theories of origins, statistics and characteristics of the causative pathogen, incubation, illness patterns, transmission, prevention and treatment of infectious and noninfectious disease. Emphasis is placed on STDS, HIV, Hepatitis and OSHA regulations. Prerequisite: Admission to clinical component of athletic training curriculum.

ATEP 376. Pharmacology for Athletic Trainers. 2 credits. Offered fall.
This course is designed for students to understand knowledge, skills and values that an entry-level certified athletic trainer must possess in pharmacological applications, including awareness of the indications, contraindications, precautions and interactions of medications, and the governing regulations relevant to physically active individuals. Prerequisite: Admission to clinical component of athletic training curriculum.

ATEP 377. General Medicine in Athletic Training. 2 credits. Offered spring.
This course is designed for students to understand knowledge, skills and values that an entry-level certified athletic trainer must possess in order to recognize, treat and refer when dealing with general medical conditions and disabilities related to athletes or others involved in physical activity. Prerequisite: Admission to clinical component of athletic training curriculum.

ATEP 392. Level II Practicum in Athletic Training. 2 credits. Offered fall.
This course focuses on clinical performance and application of didactic knowledge. Clinical rotations, clinical competencies, inservices, case studies and professional journal are included in course content. Sport specific activities and clinical applications involving palpation and wound care are key components of this course. Prerequisite: Admission to clinical component of athletic training curriculum.

ATEP 393. Level III Practicum in Athletic Training. 2 credits. Offered spring.
This course focuses on clinical performance and application of didactic knowledge. Clinical rotations, clinical competencies, inservices, case studies and professional journal are included in course content. Sport specific activities and clinical applications involving manual muscle testing and equipment fitting are key components of this course. Prerequisite: ATEP 392.

ATEP 405. Rehabilitation in Athletic Training: Lower Extremity. 2 credits. Offered spring.
This course explains the rehabilitation process of lower extremity muscular and joint injuries related to athletic activities. Additional topics include rehabilitation facility design, budget preparation and pre-season assessment. Prerequisite: ATEP 305.

ATEP 406. Organization and Administration in Athletic Training. 3 credits. Offered spring.
This course is an overview of managerial issues including legal concerns, OSHA guidelines, budgeting/purchasing and staffing. In addition, this course provides a variety of experiences culminating in the knowledge and skills needed to meet entry-level competencies set by the National Athletic Trainers’ Association. Prerequisite: Permission of the instructor.

ATEP 494. Level IV Practicum in Athletic Training. 2 credits. Offered fall.
This course focuses on clinical performance and application of didactic knowledge. Clinical rotations, clinical competencies, inservices, case studies, and professional journal are included in course content. Sport specific activities and clinical applications involving orthopedic testing and emergency internal abdominal/chest evaluation are key components. Prerequisite: ATEP 393.

ATEP 495. Level V Practicum in Athletic Training. 2 credits. Offered spring.
This course focuses on clinical performance and application of didactic knowledge. Clinical rotations, clinical competencies, inservices, case studies and professional journal are included in course content. Sport specific activities and clinical applications involving cranial nerve assessment and neurological evaluation are key components of this course. Prerequisite: ATEP 494.

Biology

Department of Biology

GBIO 103. Contemporary Biology (3, 0). 3 credits.
An in-depth exploration of selected biological concepts connected to current, relevant topics and emphasizing an understanding of science as a way of obtaining knowledge. Not available for major or minor credit in biology. Formerly GSCI 103. Students may not receive credit for both GSCI 103 and GBIO 103.
BIO 114. Organisms (3, 3). 4 credits. Offered fall and spring.
An exploration of how diverse life forms carry out fundamental processes that sustain life, including acquiring and using essential molecules, growing and reproducing, responding to environmental stimuli, and maintaining a stable internal environment. Labs will introduce students to the scientific method in a series of investigative lab and field experiences.

In this course, students will learn about variation within populations, the mechanisms of evolution, phylogeny and classification, population and community ecology, animal behavior and ecosystems dynamics. Labs will include investigations in laboratory and field settings. Credit may not be earned in both BIO 124 and BIO 351. Prerequisite: Grade of "C-" or better in BIO 114.

BIO 201. Trelawny Learning Community Seminar. 2 credits. Offered fall.
An introduction to the biology major for first year students living in the Trelawny Learning Community. Topics will include research opportunities, careers, case studies and current topics. Faculty and upper class students from the department will interact with the course to provide different perspectives about the biology major. Prerequisite: Membership in the Trelawny Learning Community.

BIO 202. Trelawny Learning Community Methods (1, 0). 1 credit.
Offered spring.
An examination of learning methods for content enhancement and mastery. An emphasis will be placed on building foundational skills for college success. Prerequisite: BIO 201.

BIO 214. Cell and Molecular Biology (3, 3). 4 credits. Offered fall and spring.
Students will explore the physiology, metabolism and reproductive biology of prokaryotic and eukaryotic cells. Topics will include the structure and function of macromolecules, theoretical and mechanistic aspects of metabolism, bioenergetics and signal transduction. Labs will include investigations that introduce students to various biochemical techniques. Credit may not be earned in both BIO 214 and BIO 220. Prerequisites: Grades of "C-" or better in BIO 114 and either CHEM 131, CHEM 120 or permission of the instructor.

BIO 220. Cell Biology. 3 credits. Offered fall and spring.
A comparative and theoretical coverage of basic aspects of cell structure and function common to most biological systems, including integration of cell theory, metabolism and gene action. Credit may not be earned in both BIO 220 and CHEM 222. Prerequisite: CHEM 132, CHEM 120 or equivalent. Credit may not be earned in both BIO 220 and BIO 214.

BIO 224. Genetics and Development (3, 3). 4 credits. Offered fall and spring.
The final course in the introductory series will explore how genetic information is utilized throughout the lifetime of the organism. Labs will make use of common model organisms highlighting the growing base of knowledge on the genetics and molecular biology of developmental processes. Credit may not be earned in both BIO 224 and BIO 230. Prerequisites: Grade of "C-" or better in BIO 124 and BIO 214.

A study of the major principles of biological inheritance through lectures, readings, experimentation and discussions. Credit may not be earned in both BIO 230 and BIO 224. Prerequisites: BIO 120 and BIO 130.

*BIO 270. Human Physiology (3, 2). 4 credits. Offered fall, spring and summer.
An introduction to basic physiological principles using humans as the primary organism. Physiological adaptations will be examined at the molecular through organismal levels. Intended for students in health-related fields and Cluster 3 of the General Education program, and not available for biology major credit. Prerequisites: CHEM 120, CHEM 131 or equivalent, and MATH 220 or equivalent.

BIO 280. Allied Health Microbiology (3, 3). 4 credits. Offered fall, spring and summer.
An introduction to the biology and significance of microorganisms. Emphasis will be placed on human- and health-related aspects of microbiology. Credit may not be earned in both BIO 280 and BIO 380. Not available for major credit. Prerequisite: CHEM 120, GSCI 101, BGBI 103 or equivalent.

BIO 290. Human Anatomy (3, 3). 4 credits. Offered fall, spring and summer.
A study of the basic body plan is reinforced by studies of dissected human cadavers and computer simulations. Emphasis is on the major body structures and systems.

BIO 305. Ornithology (1, 4). 3 credits. Offered spring.
Introduction to avian biology with exercises in field identification. Prerequisite: BIO 124 or permission of instructor.

BIO 310. General Entomology (2, 4). 4 credits. Offered periodically.
A laboratory and field study of insects. Morphology, physiology and behavioral aspects will be emphasized. Collection, identification and preservation of local insects by standard procedures will be part of the course. Prerequisite: BIO 124 or permission of instructor.

BIO 312. Animal Welfare. 3 credits. Offered spring.
An examination of the biological basis of animal welfare. Topics include the evolution of domestic animals, physiological and behavioral measurements of stress, welfare assessment and pain perception. Case studies examine the use of animals for companionship, food, medical research and entertainment. Prerequisite: BIO 124 or permission of the instructor.

An introduction to the fundamental processes and mechanisms of animal development. The cellular and molecular bases of embryonic processes ranging from fertilization through organogenesis and of postembryonic processes including metamorphosis, regeneration, senescence and reproduction are explored in the primary vertebrate models (fish, frog, chick, mouse, human) and selected invertebrates. Prerequisite: BIO 224.

BIO 320. Comparative Anatomy of Vertebrates (2, 4). 4 credits. Offered spring.
A study of the evolution of vertebrate organ systems that integrates structure, function and development. Prerequisite: BIO 124, BIO 290 or equivalent.

BIO 330. Scanning Electron Microscopy. 3 credits. Offered periodically.
This course will include the theory and application of scanning electron microscopy and energy dispersive spectrometry. Students will learn to prepare, view and analyze specimens. An individual research project will be required of each student. Prerequisite: CHEM 132.

4 credits. Offered spring even years.
A detailed study of the comparative morphology and anatomy of tracheophytes. Prerequisite: BIO 124.

BIO/GEOL 350. Invertebrate Paleontology (3, 2). 4 credits. Offered periodically.
The history of nonvertebrate life from its origin, through evolving biogeochemical cycles, origin of eukaryotes and multicellularity, evolutionary records of all major groups and theoretical issues such as major group origins, adaptive radiation patterns, extinctions, functional adaptations and paleoecology. Prerequisite: GEOL 230, BIO 114 or permission of the instructor.

BIO 353. Basic Ecology (3, 3). 4 credits. Offered fall.
Ecological principles are presented in a context which will aid pre-college teachers to understand the background science of the subject and apply it to instruction. Prerequisites: Course is open only to IDS majors and biology majors with a secondary education minor. GSCI 186E or equivalent.

BIO/CHEM 361. Biochemistry I. 3 credits. Offered fall.
An introduction to the molecules and chemical reactions of living systems. Structure and function of important classes of biomolecules are explored and the relationship of structure to function is stressed. Basic metabolic sequences are discussed. Prerequisites: CHEM 342 and permission of instructor.
BIO 364. Human Uses of Plants (3, 0). 3 credits. Offered fall.
A survey of past, present and future uses of plants with emphasis on economically important plant families. Issues of cultivated plant origins, biodiversity and germplasm preservation are considered. Prerequisite: BIO 124 or permission of the instructor.

BIO 365. Laboratory in Human Uses of Plants (0, 3). 1 credit. Offered fall.
An investigative examination of plants and their constituents with an emphasis on their physiological ecology, adaptations and economic utilization by humans. Prerequisite or corequisite: BIO 364.

BIO 366. Plants and Environment (3, 3). 4 credits. Offered spring.
Students will engage in a systematic investigation of plant structure and function. Ecological roles of plants and resource utilization by humans will be explored. Prerequisites: Course is open only to IDS majors and biology majors with a secondary education minor. GSCI 166E or equivalent.

BIO 370. Animal Physiology (3, 3). 4 credits. Offered fall and spring.
Design and function of cellular and organ physiology will be explored in both non-human and human animals. Class activities will emphasize problem-solving, and collaborative and independent learning. The laboratories will utilize computer simulations and animal/human experiments to examine principles of both physiology and scientific investigation. Prerequisites: BIO 214 and CHEM 132 or permission of the instructor. One semester each of calculus and statistics are recommended.

BIO 380. General Microbiology (2, 4). 4 credits. Offered fall and spring.
A study of the structure and function of microorganisms and their relationship to humans and to the environment. Credit may not be earned in both BIO 280 and BIO 380. Prerequisite: BIO 214 or permission of the instructor.

BIO 386. Field Botany (3, 3). 4 credits. Offered fall even years.
An in-depth survey of vascular plants in the field with emphasis on identification, diversity of form and function, and ecology. Laboratory topics will include techniques for sampling plant communities, identifying local flora and preserving botanical materials. Prerequisite: BIO 124.

BIO 404. Evolutionary Analysis. 3 credits. Offered fall.
An examination of the place of theoretical thought in biology. The concepts of phylogenetic relationships and the mechanisms of organic change as expressed through the principles of organic evolution will be stressed. Prerequisite: BIO 224 or permission of the instructor.

BIO/GEOL 405. Vertebrate Paleontology (3, 1). 3 credits. Offered periodically.
A study of the origin and evolution of the vertebrates. Emphasis will be on understanding how the processes of Earth evolution and biological evolution have interacted through time to produce a coherent picture of vertebrate history. Prerequisite: GEOL 230, BIO 124 or permission of instructor.

BIO 409. Marine and Freshwater Invertebrates. 3 credits.
This is a course on animal diversity, the goal of which is to provide an understanding and appreciation of diverse ways animals function, reproduce and interact with their environment. Invertebrate groups will be surveyed. How evolution has resulted in the great richness and diversity of life on earth today will be explored using the principles of adaptation and phylogenetic analysis.

BIO 410. Advanced Human Anatomy (1, 6). 3 credits. Offered spring.
An advanced study of topics in human anatomy using dissection techniques. Prerequisites: BIO 290 and/or BIO 320 and permission of instructor.

BIO 414. Clinical Anatomy for Occupational Therapists. 4 credits. Offered summer.
This course offers an in-depth study of the structure of the musculoskeletal and peripheral nervous systems of the human body. Specific structural and neural pathologies will be examined in regards to impact on occupational performance. Laboratory experiences involving cadaver dissection, skeletal material, models and audiovisual technology will be utilized. Prerequisite: Admission to the Occupational Therapy program.

BIO 420. Medical Parasitology (2, 4). 4 credits. Offered spring odd years.
A study of the principal parasites of humans. Topics will include terminology, overview of host-parasite relationships, host defenses, organism’s response to host and laboratory methods. Morphology, lifecycle, epidemiology, geographic distribution, pathology and symptoms, diagnosis, treatment, and possible eradication will be studied for each organism. Prerequisite: BIO 214 or permission of instructor.

BIO 426. Topics in Biology. 1-4 credits. Offered periodically.
Studies in specified areas of biology. May be repeated for credit when course content changes. Prerequisite: See e-campus for prerequisites for specific topics.

BIO 427. Topics in Biology with Laboratory. 1-4 credits. Offered periodically.
Laboratory studies in special areas of biology to accompany BIO 426 or stand alone. May be repeated for credit when course content changes. Prerequisite: See e-campus for prerequisites for specific topics.

BIO 430. Human Genetics. 3 credits. Offered spring and summer.
Current topics in human genetics with emphasis on species and population variation, medical genetics and genetic applications that affect humans. Prerequisite: BIO 224.

BIO 440. Functional Neuroscience for Occupational Therapists. 3 credits. Offered fall.
This course will examine functional performance of all aspects of the human nervous system. Specific nervous system conditions will be introduced and their impact on occupational performance, performance components and environmental contexts discussed. Prerequisites: Admission to the Occupational Therapy program and satisfactory completion of previous concentration course work. Credit may not be applied toward the biology major or minor.

BIO 442. Immunology. 3 credits. Offered spring.
A study of the molecular and cellular basis of the immune system. Topics include the properties of antigens and immunoglobulins, the development and regulation of humoral and cell-mediated immunity, resistance and immunization to infectious diseases, allergies, and autoimmune and immunodeficiency disorders. Credit may not be earned in BIO 442 and BIO 542. Prerequisite: BIO 214 or permission of instructor.

BIO 443. Immunology Laboratory (0, 4). 1 credit. Offered spring.
This course will introduce students to the theory and application of many of the methods currently used in clinical and research immunology. Laboratory exercises will focus on methods for identifying, quantifying and assessing functional activities of immune cells and molecules. Students will gain experience using experimental animals and in animal cell culture techniques. Corequisite: BIO 442.

BIO 444. Virology. 3 credits. Offered fall.
A study of the fundamental aspects of both basic and medical virology. Credit may not be earned in both BIO 444 and BIO 544. Prerequisites: BIO 214 and BIO 224 or permission of instructor.

Molecular, cellular and network mechanisms underlying behavior will be studied using problem-solving, discussion, lecture and critical reading of the primary literature. Similarities and differences between nervous systems and computers will be explored. Laboratories will utilize contemporary electrophysiology and computer simulation to examine the neurobiology of simple animal model systems. Prerequisite: BIO 370. Physics recommended.

Ecosystems are examined as basic ecological units which are comprised of communities interacting with their environments and are themselves components of landscape. Credit may not be earned in both BIO 451 and 551. Prerequisites: BIO 124 and BIO 214.

Theoretical and applied aspects of distribution and abundance, population regulation, interactions between populations and conservation will be studied in selected organisms, including humans. Credit may not be earned in both BIO 452 and BIO 552. Prerequisite: BIO 124.
BIO 453. Microbial Ecology (2, 4). 4 credits. Offered spring.
The ecology of microorganisms will be covered, emphasizing the study of microbial growth and activity in natural environments. Credit may not be earned in both BIO 453 and BIO 553. Prerequisites: BIO 124 and BIO 380.

BIO 454. Introduction to Biometrics. 4 credits. Offered spring even years.
The design of biological experiments and applications of statistical techniques in ecology, cell biology, physiology, behavior, systematics, genetics and evolution. Experiments and data from the biological literature will be emphasized. Statistical software packages will be used. Credit may not be earned in both BIO 454 and BIO 554. Prerequisite: MATH 220 or equivalent.

BIO 455. Plant Physiology (3, 4). 4 credits. Offered spring odd years.
Function and structure of plants including water relations, mineral nutrition, transport phenomena, metabolism, growth and development, and selected topics in physiological ecology. Credit may not be earned in both BIO 455 and BIO 555. Prerequisite: BIO 214. Prerequisite or corequisite: CHEM 342.

The functional and descriptive study of the interaction of the mosaic of ecosystems that comprise the landscape prevalent in a region. Prerequisite: BIO 124.

BIO 458. Comparative Animal Physiology (2, 4). 4 credits.
Offered periodically.
An investigation of animal physiological adaptations to biotic and abiotic environmental factors. Laboratory study emphasizes experimental methods utilized to examine adaptive mechanisms. Credit may not be earned in both BIO 458 and BIO 558. Prerequisite: BIO 270 or BIO 370.

BIO 459. Freshwater Ecology (2, 4). 4 credits. Offered fall.
Functional relationships and productivity of freshwater communities are examined as they are affected by their physical, chemical and biotic environment. Organisms inhabiting lakes, ponds, rivers, streams and estuaries are studied at the population, community and ecosystem levels. Credit may not be earned in both BIO 459 and BIO 559. Prerequisites: BIO 124, CHEM 131 and CHEM 132.

BIO 460. Plant Cell and Tissue Culture (2, 4). 4 credits. Offered spring even years.
Theory and practice of growing isolated plant cells, tissues and organs. Credit may not be earned in both BIO 460 and BIO 560. Prerequisites: BIO 114 and CHEM 132.

BIO 465. Environmental Toxicology (3, 0). 3 credits. Offered spring.
The study of types, sources and biological effects of environmental pollutants. Class activities will include discussions of foundational material covering a broad range of pollutants, analysis of published environmental data, and the use of simulation models, geographic information systems and other software currently used in environmental toxicology. Prerequisite: BIO 224 or equivalent.

BIO 466. Ecotoxicology Seminar (3, 0). 3 credits. Offered fall.
Readings and discussions of the ecological effects of environmental pollutants with a focus on how events at the molecular and cellular level have consequences at the community and ecosystem level. Prerequisite: BIO 224 or equivalent.

Offered periodically.
Comparative morphology, ecology and taxonomy of representative algae, fungi and bryophytes. Credit may not be earned in both BIO 470 and BIO 570. Prerequisite: BIO 124.

BIO 480. Advanced Molecular Biology (2, 4). 4 credits. Offered fall.
Cellular constituents and genetics are emphasized at the molecular level. Credit may not be earned in both BIO 480 and BIO 580. Prerequisite: BIO 214. Prerequisite or corequisite: CHEM 342.

BIO 482. Human Histology (3, 3). 4 credits. Offered fall.
Microscopic structure of cells, tissues and major organ systems of the body. Basic anatomical and physiological function is presented to emphasize the histological significance of the examined organ systems. Prerequisite: BIO 270, BIO 290 or equivalent.

BIO 486. Systematics of Vascular Plants (2, 4). 4 credits. Offered fall odd years.
Study of systematic theory and an overview of the classification and evolution of higher plants with particular attention to flowering plant families. Techniques for plant identification and collection and for construction of phylogenies will be taught in lab. Prerequisite: BIO 124 or permission of the instructor.

BIO 490. Biomechanics (3, 3). 4 credits. Offered spring.
A study of the interactions of organisms with their physical environment. Concepts from fluid and solid mechanics are applied to biological form and function. Prerequisite: BIO 114 or permission of the instructor.

BIO 494. Internship in Biology (0, 2-12). 1-6 credits.
Students participate in research or applied biology outside of this university. A proposal must be approved prior to registration and a final paper will be completed. Prerequisites: Biology major with a minimum of eight biology credit hours and a biology GPA of 2.5 or greater.

BIO 495. Biotechniques (0, 2). 1 credit.
Emphasis is placed on theory, methodology and the development of manipulative abilities. Students must notify the biology office of their interest the semester before registration. May be repeated for credit when course content changes.

BIO 496. Research Literature (0, 2). 1 credit.
A systematic review and study of the research literature in a selected field of biology. Proposal for study must be approved by sponsor and department head the semester before registration. May be repeated for credit when course content changes.

BIO 497A,B,C. Biological Research (0, 4-6). 1-6 credits.
A systematic review and study of the research literature in a selected area of biology as arranged with sponsor. Research outline must be approved prior to registration and a final paper will be completed. Prerequisites: BIO 124 or permission of the instructor. May be repeated for credit when course content changes.

BIO 499. Honors in Biology (0, 6). 6 credits.
Three semester course taken as parts A, B and C; 2 credits each.

Business Law

College of Business

BLAW 314. Real Estate Law. 3 credits.
A study of the principles of law governing interests in real estate including acquisition, encumbrance, transfer, rights and obligations of parties, and state and federal regulations thereof. Prerequisites: COB 218 and junior standing.

BLAW 470. Financial Products: Regulation and Protection. 3 credits. Offered once a year.
An inquiry into the legal environment of the financial marketplace. Topics explored include the role of regulatory agencies, the design of contracts which minimize credit risk and maximize marketability, and methods of protecting the proprietary component of innovative financial products. Prerequisites: COB 218 and junior standing.

BLAW 495. Business Law I. 3 credits. Offered fall and spring.
A study of the law of contracts, Article Two of the Uniform Commercial Code, product liability, legal liability of accountants, secured transactions and bankruptcy with emphasis on the role these play in professional and personal decision making. The courts, the legislature and the interaction of these two branches of government in responding to a changing society are studies throughout. Prerequisites: COB 218 and COB 300 or permission of instructor.
BLAW 496. Business Law II. 3 credits. Offered once a year.
A study of Article Three of the Uniform Commercial Code, agency, partnerships, corporations, securities regulations, real property, trusts and decedents estates with emphasis on the role these play in professional and personal decision making. Prerequisites: COB 218 and COB 300 or permission of instructor.

BLAW 497. Legal Aspects of International Business. 3 credits. Offered fall.
Survey of legal implications of international business dealings including foreign direct sales, distributorship arrangements, licensing of technology and legal aspects of the multi-national corporation. The foreign legal environment, relevant conventions and trade regulations, and the transnational reach of regulatory law will be considered. Prerequisites: COB 218 and senior standing.

Business and Marketing Education

College of Education

BMED 200. Introduction to Business and Marketing Education. 3 credits.
A general survey of business and marketing principles as they relate to preparation for teaching with emphasis on the history of business and marketing in America, the basic forms of business organizations, ownership, finance, management, taxes and wages, and labor relations.

BMED 230. Document Design and Production. 3 credits.
Experience in planning, designing and producing documents for the business office with focus on transferability of productivity among the genre of word processing software. Prerequisite: Keyboard in excess of 40 words per minute with at least 95 percent word accuracy without visual reference to the keyboard.

BMED 300. Data and Records Management. 3 credits.
Develops skills in managing the information of business by organizing data through the creation and use of computer spreadsheets and databases. Includes the management and organization of hard records.

BMED 376. Occupational Experience in Business. 3 credits.
Supervised internship providing business office experience for students seeking licensure as business education teachers in middle and secondary schools. A credit/no credit grade will be assigned. Prerequisite: Permission of the instructor.

BMED 377. Occupational Experience in Marketing. 3 credits.
Supervised internship providing marketing business office experience for students seeking licensure as marketing education teachers in middle and secondary schools. A credit/no credit grade will be assigned. Prerequisite: Permission of the instructor.

BMED 380. Demonstration Methods for Business and Marketing. 3 credits.
Development of an instructional model incorporating demonstrations and supervised walk-throughs in planning and directing the learning of computer-related and other complex business and marketing procedures and processes.

BMED 400. Business and Marketing Communications. 3 credits.
Develops skills in communicating effectively through formal and informal business reports, letters and memorandums. Emphasis on realistic problem solving involving collecting, organizing, analyzing, interpreting and presenting data. Prerequisites: GWRT 101, GWRT 102, and BMED 230 or equivalent.

BMED 430. Desktop Publishing Design and Production. 3 credits.
Experience in planning, designing and producing the publications of business and education with focus on transferability of functions among the genre of desktop publishing software.

BMED 490. Independent Study in Business and Marketing Education. 1-3 credits. Offered fall and spring.
Provides opportunity to complete independent study or research on problems in business and marketing education. Prerequisite: Permission of the program coordinator.

Chemistry

Department of Chemistry

CHEM 100. Chemistry Today. 3 credits.
Provides the background necessary to understand how chemistry affects our daily lives. An enriched overview of the fundamental principles of chemistry is followed by applications to topics of current interest. A high school science background is assumed. Not available for major or minor credit in chemistry.

*CHEM 120. Concepts of Chemistry. 3 credits. Offered fall and spring.
A one-semester introduction to the fundamental principles, laws and applications of chemistry. Examples relating to the health sciences are emphasized. Not available for major or minor credit in chemistry.

CHEM 120L. Concepts of Chemistry Laboratory. 1 credit. Offered fall and spring.
A one-semester introduction to laboratory work which illustrates the fundamental principles, laws and applications of chemistry discussed in CHEM 120. Experiments relating to the health sciences are emphasized. Prerequisite or corequisite: CHEM 120.

*CHEM 131. General Chemistry I. 3 credits. Offered fall and spring.
The first of a two-course general chemistry sequence for science majors. It is designed to introduce students to basic chemical concepts including atomic structure, periodic properties of the elements, nomenclature, basic stoichiometry, theories related to reactivity and bonding, and the behavior of materials. The laboratory and lecture portions of CHEM 131 must be taken concurrently. Chemistry majors take 135L rather than 131L.

CHEM 132. General Chemistry II. 3 credits. Offered fall and spring.
A course designed to examine the mechanisms by which chemists obtain information about reacting systems. Major concepts covered include: chemical reactivity, chemical equilibrium, electrochemistry, thermodynamics and kinetics. Prerequisites: Grades of "C-" or higher in CHEM 131 and either CHEM 131L or CHEM 135L. Corequisite: CHEM 132L or 136L (chemistry majors take 136L).

CHEM 131L*-132L. General Chemistry Laboratories. 1 credit each semester. Offered fall and spring.
These laboratory courses are designed to complement and supplement the CHEM 131-132 lecture courses. The laboratory and lecture portions must be taken concurrently. Chemistry majors are to take CHEM 135L rather than 131L. Prerequisites for CHEM 132L: Grades of "C-" or higher in CHEM 131 and either CHEM 131L or CHEM 135L. Corequisite: CHEM 132L or 136L (chemistry majors take 136L).

CHEM 135L. Special General Chemistry Laboratory. 1 credit. Offered fall.
An enriched laboratory course designed primarily for chemistry majors. Corequisite: CHEM 131.

CHEM 136L. Special General Chemistry Laboratory. 1 credit. Offered spring.
An enriched laboratory course that includes special topics and experiments not presented in the regular CHEM 132 laboratory. Prerequisites: Grades of "C-" or higher in CHEM 131 and either CHEM 131L or 136L. Corequisite or prerequisite: CHEM 132.
CHEM 200. Computer Applications in Chemistry. 1 credit. Offered fall.
Students are given chemically relevant problems that require that they learn to use the software all literate chemists should be familiar with. In addition, students are introduced to a programming language, first by writing macros for spreadsheet, presentation or word processing programs and finally, by using a high level programming language.
Corequisite or prerequisite: CHEM 221.

CHEM 221. Concepts of Organic Chemistry. 3 credits. Offered fall.
An introduction to the study of organic compounds with emphasis on the chemistry of functional groups, including methods of preparation and interconversions. The laboratory and lecture portions must be taken concurrently. Prerequisites: CHEM 132 and 132L.

CHEM 221L. Concepts of Organic Chemistry Laboratory. 1 credit. Offered fall.
Laboratory work will include training in the techniques of organic chemistry, preparation of compounds and some organic qualitative analysis. Prerequisite or corequisite: CHEM 221.

CHEM 222. Concepts of Biochemistry. 3 credits. Offered spring.
A brief survey of the principal constituents of living cells, proteins, carbohydrates, lipids and nucleic acids with emphasis on their synthesis and transformations in vivo. Intermediary metabolism and protein replication will be stressed. The laboratory and lecture portions must be taken concurrently, not available for major credit. Credit may not be earned in both CHEM 222 and BIO 220. Prerequisites or corequisites: CHEM 221 and CHEM 221L (or CHEM 342 and CHEM 346L).

CHEM 222L. Concepts of Biochemistry Laboratory. 1 credit. Offered spring.
The laboratory work will comprise experiments demonstrating some of the pertinent reactions including those of analytical value. Prerequisite or corequisite: CHEM 222.

CHEM/PHYS/MATS 275. An Introduction to Materials Science. 3 credits. Offered fall.
An introduction to materials science with emphasis on general properties of materials. Topics will include crystal structure, extended and point defects, and mechanical, electrical, thermal and magnetic properties of metals, ceramics, electronic materials, composites and organic materials. Prerequisite: CHEM 131, PHYS 150, PHYS 250, ISAT 212 or permission of the instructor.

CHEM 280. An Alternative Lower-Division Chemistry Experience. 1-3 credits. Offered fall and spring.
This course will provide a mechanism for offering nontraditional, lower-division, lecture and/or laboratory course. It will be offered only with the approval of the full-time teaching faculty. No course will be offered more than three times under the 280 designation. Students may repeat CHEM 280 for credit when course content changes.

CHEM 300. Numerical Methods in Chemistry. 1 credit. Offered fall.
Students learn to use computational software and a high level scientific language to facilitate the solution of numerical chemical problems.

CHEM 325. Chemical Hazards and Laboratory Safety. 1 credit. Offered fall.
A brief introduction to physical and chemical hazards which may be encountered in a laboratory setting. Methods of personal protection will be emphasized.

CHEM 331. Physical Chemistry I. 3 credits. Offered spring.
A study of thermodynamics, solutions, kinetics and macromolecules with applications of chemical and biological problems. Prerequisites: CHEM 132 and either MATH 206 or MATH 236.

CHEM 338L. Applied Physical Chemistry Laboratory. 1 credit. Offered spring.
A laboratory course which emphasizes the applied experimental aspects of physical chemistry. Prerequisite or corequisite: CHEM 331.

CHEM 341-342. Organic Chemistry Lecture. 3 credits each semester. Offered fall and spring.
The major objective for this course is to teach the modern method of scientific problem solving using organic compounds as models. Emphasis will be on the chemical language (nomenclature and terminology), molecular electronic concepts, theories of organic reactions, stereochemistry and structure elucidation of organic compounds. Prerequisite for CHEM 341: CHEM 132. Prerequisite for CHEM 342: a grade of "C-" or higher in CHEM 341. Corequisite for CHEM 342: CHEM 346L or CHEM 388L.

CHEM 346L. Organic Chemistry Laboratory. 2 credits. Offered spring.
This course will present laboratory techniques and experiments associated with organic chemistry, including an introduction to synthesis, spectroscopic methods, chromatographic techniques and some qualitative organic analysis. Prerequisite: A grade of "C-" or higher in CHEM 341. Corequisite: CHEM 342.

CHEM 351. Analytical Chemistry. 4 credits. Offered fall.
The total analysis concept is introduced and developed. This framework encompasses the areas of experiment design, sample collection and treatment, and statistical evaluation of results, as well as standard analysis techniques. Prerequisite: CHEM 132.

CHEM 352. Instrumental Analysis. 3 credits. Offered spring.
This course emphasizes the application of instrumental techniques to the quantitative determination of chemical composition. Both instrument theory and practical applications are presented. Prerequisites: CHEM 351 and either MATH 205 or MATH 235.

CHEM 352L. Instrumental Analysis Laboratory. 2 credits. Offered spring.
This course will introduce students to the methodology and technology associated with the design and use of chemical instrumentation. Students perform experiments that illustrate the theoretical principles associated with instrument designs and the application of instruments to the solution of qualitative and quantitative analysis problems. Corequisite: CHEM 352.

CHEM 354. Environmental Chemistry Field Camp. 3 credits. Offered summer.
Fundamentals of environmental chemistry with laboratory and field trip components. The basic chemical principals of environmental problems are studied. Field trips and laboratory work on real samples are integrated with lecture material. Prerequisite: CHEM 341 or permission of instructor.

CHEM/GEOL 355. Geochemistry of Natural Waters. 3 credits. Offered fall.
Study of chemical theory and reactions important in natural water systems. The role of atmospheric, geologic and biological inputs in determining the geochemistry of streams, rivers and oceans. Prerequisites: CHEM 131 and CHEM 132 or equivalent.

CHEM/BIO 361. Biochemistry I. 3 credits. Offered fall.
An introduction to the molecules and chemical reactions of living systems. Structure and function of important classes of biomolecules are explored and the relationship of structure to function is stressed. Basic metabolic sequences are discussed. Prerequisites: CHEM 342 and permission of instructor.

CHEM 362. Biochemistry II. 3 credits. Offered spring.
A continuation of CHEM 361 including metabolic regulation, protein biosynthesis, analytical methods and isolation of biomolecules. Prerequisite: CHEM 361 or permission of the instructor.

CHEM 366L. Biochemistry Laboratory. 2 credits. Offered spring.
An introduction to laboratory techniques and experimental approaches associated with modern biochemistry. Isolation and characterization of enzymes and other biomolecules are emphasized. Prerequisite: CHEM 361.

CHEM 370. Inorganic Chemistry I. 3 credits. Offered spring.
A survey of the chemistry of the elements and modern theories of bonding. Prerequisite: A grade of "C-" or higher in CHEM 132 or CHEM 341.
CHEM 387L-388L. Integrated Inorganic/Organic Laboratory. 2 credits each semester. Offered fall and spring. An enriched, integrated introduction to the laboratory procedures associated with inorganic and organic chemistry. Topics include apparatus design and construction, synthesis, separation methods, spectroscopic analysis, and application of computers in the laboratory. Prerequisite or corequisite for CHEM 387L: CHEM 341. Prerequisites or corequisites for CHEM 388L: CHEM 270 and CHEM 342 and a grade of "C-" or higher in CHEM 387L.

CHEM 390A,B. Problems in Chemistry. 1-3 credits, repeatable for a total of 4 credits. Offered fall and spring. A project is undertaken dealing with some aspect of chemistry under the guidance of a faculty adviser.

CHEM 395. Perspectives in Chemistry, 1 credit. Offered fall. A description of the technical and nontechnical capabilities expected of a university graduate who enters industry, government or academia is presented. The student is introduced to the various laws governing the chemical industry as well as to the fields of toxicology and environmental health. Experts in various disciplines discuss current topics of concern to the chemistry and biology student.

CHEM 432. Physical Chemistry II. 3 credits. Offered fall. A study of atomic and molecular energy levels and structure as interpreted by quantum theory. Prerequisites: CHEM 132; MATH 206 or MATH 230; and PHYS 150 or PHYS 250.

CHEM 438L. Physical Chemistry Laboratory, 2 credits. Offered fall. A laboratory course which emphasizes the application of various physical measurement techniques as a means of obtaining data to test fundamental chemical theory. Corequisite: CHEM 432.

CHEM 440. Intermediate Organic Chemistry. 3 credits. Offered spring. An advanced study of the theory of organic chemistry as applied to chemical reactions and synthetic methods. Such topics as reaction mechanisms, spectroscopy and stereochemistry will be included. Prerequisite: CHEM 342.

CHEM 445. Polymer Chemistry. 4 credits. Offered fall. A study of the synthesis and characterization of macromolecules. Polymer chemistry is discussed in a manner that focuses most attention on the properties of macromolecules that can be understood at the molecular level. Prerequisite: CHEM 342.

CHEM 450. Nuclear and Radiation Chemistry. 3 credits. Offered spring. A study of the fundamentals of radioactivity in chemistry. Topics include the effects of radiation on matter, measurement of radiation, activation analysis, tracer studies and the nuclear fuel cycle. Applications of radioactive materials and radiation in industry and medicine will be described. Prerequisites: CHEM 132 and PHYS 250 or permission of the instructor.

CHEM 450L. Laboratory for Nuclear and Radiation Chemistry, 1 credit. Offered spring. A laboratory course designed to demonstrate the topics covered in CHEM 450. Corequisite: CHEM 450. Prerequisites: CHEM 132 and PHYS 250 or permission of the instructor.

CHEM/PHYS 455. Lasers and Their Applications to Physical Sciences. 3 credits. Offered spring. An introduction to both the theoretical and practical aspects of lasers and their applications in the physical sciences. Prerequisite: PHYS 270, CHEM 331 or permission of the instructor.

CHEM 470. Inorganic Chemistry II. 3 credits. Offered fall. A study of selected topics in the field of advanced inorganic chemistry. Prerequisite: CHEM 270. Prerequisite or corequisite: CHEM 331.

CHEM 480. Selected Topics in Chemistry. 1-3 credits each semester. Offered fall and spring. This course is designed to allow an in-depth study of specific topics in chemistry selected according to student and staff interest.

CHEM 481. Literature and Seminar I. 1 credit. Offered fall. Provides instruction in methods of abstracting specific information from the body of chemical literature. Attendance at regularly scheduled department seminars is required.

CHEM 482. Literature and Seminar II. 1 credit. Offered spring. Provides practice in preparing and presenting a literature-based seminar and paper on a chemical topic. Attendance at regularly scheduled department seminars is required. Prerequisite: CHEM 481 or permission of the instructor.

CHEM 494. Internship in Chemistry. 1-2 credits. May be repeated for a maximum of 6 credits. Offered fall and spring. Students participate in research or applied chemistry outside of the university. A proposal must be approved prior to registration, and a final paper will be completed.

CHEM 497A, B, C. Undergraduate Chemical Research. 2-4 credits, repeatable for a total of 6 credits. Offered fall and spring. Research in a selected area of chemistry, as arranged with and approved by a faculty research adviser the semester prior to registration.

CHEM 499. Honors. 6 credits. Offered fall and spring. Year course.

Chinese

Department of Foreign Languages and Literatures

CHIN 101-102. Elementary Chinese (4, 1). 4 credits each semester. Offered fall and spring. The fundamentals of Mandarin Chinese through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour's work a week in the language laboratory.

CHIN 231-232. Intermediate Chinese. 3 credits each semester. Offered fall and spring. A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college Chinese or equivalent.

CHIN 300. Chinese Grammar and Communication. 3 credits. Intensive training in grammatical structures and their applications to oral and written conversation. Instruction is in Chinese. Prerequisite: CHIN 232 or equivalent.

CHIN 320. Chinese Oral and Written Communication. 3 credits. Intensive training in the use of modern, everyday Chinese with emphasis on conversation and composition. Readings in Chinese will provide a context for discussion and writing. Prerequisite: CHIN 300.

Classics

Department of Foreign Languages and Literatures

CLAS 100. Latin and Greek Roots of English Words. 2 credits. Offered fall and spring. Intensive study of Latin and Greek word-roots, prefixes and suffixes in the forms they take in English words. An English vocabulary-development course for students with no knowledge of Latin or Greek. Does not count toward licensure in Latin.

CLAS 265. The Individual and Society in Ancient Greece and Rome. 3 credits. Offered fall and spring. Discussion of literary and historical sources that reflect the attitudes and values of individuals in various social classes. All readings are in English.

CLAS 266. Greek and Roman Classics in Translation. 3 credits. Offered fall and spring. Discussion of the writings that illustrate the cultural values and intellectual attitudes which constitute the most important legacy of Classical civilization. All readings are in English.
require 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

COB 300B. Integrated Functional Systems: Finance. 3 credits. Offered fall and spring.

COB 300B is the finance component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

COB 300C. Integrated Functional Systems: Operations. 3 credits. Offered fall and spring.

COB 300C is the operations component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

COB 300D. Integrated Functional Systems: Marketing. 3 credits. Offered fall and spring.

COB 300D is the marketing component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

COB 301. European Integration, Culture and History. 3 credits. Offered fall and spring.

This course is designed to complement the COB 300 A-D or European marketing minor when taught as part of the semester in Antwerp, Belgium program. COB 301 will only be offered as part of the semester in Antwerp program. Students will study European integration in the classroom and visit governmental institutions, historical places and cultural events associated with course content. Prerequisites: Requires acceptance to the semester in Antwerp program. Must be taken as a corequisite with COB 300 or courses for the European marketing minor. Cannot be used as an elective to fulfill any CoB major or any other minor.

COB 302. Financial Accounting. 3 credits. Offered fall and spring.

The role of financial data in contemporary society; the problems of measuring and reporting income, assets, liabilities and equities; interpretation of financial statements. Prerequisite: Sophomore standing.

COB 303. Managerial Accounting. 3 credits. Offered fall and spring.

The attention-directing and problem-solving functions of accounting in relation to current planning and control, evaluation of performance, special decisions, and long-range planning. Prerequisite: COB 241.

COB 304. Computer Information Systems. 3 credits. Offered fall and spring.

An introduction to computer-based information systems. Emphasis is placed on computer hardware, software, analysis, design and implementation of information systems, computer ethics, and the role of computers in society, and the functional areas of business. Students will create databases and Web pages using microcomputer tools.

COB 309. Human Values: The Classical Tradition. 3 credits. Offered fall and spring.

Discussion of human values and the human condition reflected in writings from the eighth century B.C. to the present day. Does not count toward licensure in Latin. All readings are in English.

CLAS 337. Topics in Greek and Roman Culture. 3 credits. Offered once a year.

A study of selected topics in the culture of Ancient Greece and Rome. May be repeated for credit with change of topics.

College of Business

College of Business

COB 191. Business Statistics. 3 credits. Offered fall and spring.

The application of statistical methods to business. Introduces data presentation, descriptive statistics, probability, sampling, estimation and hypothesis testing. Emphasis is on using spreadsheet tools and functions of statistical analysis. Prerequisite: MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam.

COB 202. Interpersonal Skills. 3 credits. Offered fall and spring.

An applied course consisting of experiential exercises followed by class discussion. Cases are used as learning activities where the instructor acts as a facilitator to learning. Essential theory emanates from class discussions with a student-based rather than instructor-based format. Theory and application are interwoven by means of student self-assessment exercises and group discussion. Prerequisite: Open only to sophomore business majors.

COB 204. Computer Information Systems. 3 credits. Offered fall and spring.

An introduction to computer-based information systems. Emphasis is placed on computer hardware, software, analysis, design and implementation of information systems, computer ethics, and the role of computers in society, and the functional areas of business. Students will create databases and Web pages using microcomputer tools.

COB 205. Interpersonal Skills. 3 credits. Offered fall and spring.

A study of the law as a means of social, political and economic change. Emphasis on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Sophomore standing.

COB 218. Legal Environment of Business. 3 credits. Offered fall and spring.

The attention-directing and problem-solving functions of accounting in relation to current planning and control, evaluation of performance, special decisions, and long-range planning. Prerequisite: COB 241.

COB 241. Financial Accounting. 3 credits. Offered fall and spring.

The role of financial data in contemporary society; the problems of measuring and reporting income, assets, liabilities and equities; interpretation of financial statements. Prerequisite: Sophomore standing.

COB 242. Managerial Accounting. 3 credits. Offered fall and spring.

The attention-directing and problem-solving functions of accounting in relation to current planning and control, evaluation of performance, special decisions, and long-range planning. Prerequisite: COB 241.

COB 291. Introduction to Management Science. 3 credits. Offered fall and spring.

The application of quantitative modeling and analysis to decision making. Introduces linear programming, decision theory, queuing, simulation and forecasting methods. Emphasis is on implementing spreadsheet models for business applications. Prerequisites: COB 191 and MATH 205 or equivalent.

COB 300A. Integrated Functional Systems: Management. 3 credits. Offered fall and spring.

COB 300A is the management component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

COB 300B. Integrated Functional Systems: Finance. 3 credits. Offered fall and spring.

COB 300B is the finance component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

COB 300C. Integrated Functional Systems: Operations. 3 credits. Offered fall and spring.

COB 300C is the operations component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

COB 300D. Integrated Functional Systems: Marketing. 3 credits. Offered fall and spring.

COB 300D is the marketing component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses with a 2.8 grade point average in all of those courses, junior standing (56 hours) and a cumulative 2.8 grade point average in all courses taken at JMU.

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COB 302. Financial Accounting. 3 credits. Offered fall and spring.

The role of financial data in contemporary society; the problems of measuring and reporting income, assets, liabilities and equities; interpretation of financial statements. Prerequisite: Sophomore standing.

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The attention-directing and problem-solving functions of accounting in relation to current planning and control, evaluation of performance, special decisions, and long-range planning. Prerequisite: COB 241.

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An introduction to computer-based information systems. Emphasis is placed on computer hardware, software, analysis, design and implementation of information systems, computer ethics, and the role of computers in society, and the functional areas of business. Students will create databases and Web pages using microcomputer tools.

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Discussion of human values and the human condition reflected in writings from the eighth century B.C. to the present day. Does not count toward licensure in Latin. All readings are in English.

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A study of selected topics in the culture of Ancient Greece and Rome. May be repeated for credit with change of topics.
Communication Sciences and Disorders

Department of Communication Sciences and Disorders

CSD 200. Introduction to Communication Disorders. 3 credits.
An introduction to the profession of speech-language pathology and audiology. Consideration is given to the cause and treatment of communication disorders in children and adults.

CSD 207. Speech Science I: Phonetics. 3 credits.
Instruction in various transcription techniques for phonetic and phonemic analysis of speech production.

CSD 208. Speech Science II: Anatomy and Physiology of the Ear and Voice Mechanism. 3 credits.
A detailed study of the anatomy and physiology of the speech mechanism. Prerequisite: Majors only or by permission of instructor.

CSD 209. Speech Science III: Acoustics of Speech and Hearing. 3 credits.
Introduction to acoustics of speech and hearing. Introduction to physical acoustics, sound generation and transmission, resonance, speech acoustics, and speech perception.

CSD 300. Language Development. 3 credits.
The study of language acquisition, development, structure and function in normal children. The development of language in all cultures and the universal nature of the developmental process is the foundation for continued study in speech-language hearing. Prerequisite: Open to CSD majors only.

CSD 301. Audiology. 3 credits.
An introduction to the symptoms, causes and treatment of hearing disorders. Hearing test instrumentation and interpretation in clinical situations are emphasized.

CSD 310. Biostatistical Methods for Communication Sciences and Disorders. 3 credits.
An introduction to research conducted in and applied to the disciplines of speech-language pathology and audiology. Traditional statistical methods in behavioral and social sciences will be included as well as qualitative and quantitative research approaches relevant to individuals and populations with communication disorders.

CSD 314. Phonological and Language Disorders. 3 credits.
An introduction to phonological and language disorders in children and adults. Etiological and maintaining factors are discussed, and an overview of assessment and (re)habilitation procedures is presented. Prerequisite: CSD 200, CSD 207, CSD 300 or permission of instructor.

CSD 318. Aural Rehabilitation. 3 credits.
Concentrated attention is given to communication problems of the hearing handicapped. Aural rehabilitation is emphasized including lip reading and auditory training. Prerequisite: CSD 301 or permission of instructor.

CSD 415. Neuroanatomy and Neurogenic Communication Disorders. 3 credits.
Introduces neurogenic communication disorders from a neuroanatomical approach.

CSD 416. Organic Speech Disorders. 3 credits.
Clinical procedures in the areas of fluency, oral-facial and voice disorders are studied. Evaluative and remedial aspects are emphasized.

CSD 420. Introduction to Sign Language. 3 credits.
Provides an introduction to American Sign Language, the deaf community and English-based signed systems.

CSD 421. Sign Language II. 3 credits.
Focuses on developing conversational skills of students whose core vocabulary and knowledge of the grammar and pragmatics of sign language are basic; distinguishes ASL from English sign systems. Prerequisite: CSD 420 or permission of the instructor.

CSD 444. Child Language Development and Disorders. 3 credits.
The study of normal language development in children, including an overview of the linguistic bases of language. Topics include the examination of the various manifestations of language disorders in children and the different strategies for intervention. This course does not meet the degree requirements for CSD majors.

CSD 470. Methods and Observation. 3 credits.
Directed observation and participation in practical experiences. Introduction to the clinical process in speech-language pathology. Practical clinical methodology will be emphasized. Majors only. Must have a 3.0 average in CSD courses to enroll.

CSD 471. Methods and Observation in Audiology. 3 credits.
An introduction to the clinical process in audiology via directed observation and participation in laboratory and patient interactions. Practical clinical methodology is emphasized. Majors only with interest in graduate study in audiology. Repeatable for credit up to six credits. A 3.0 average is required to enroll. Prerequisite: Permission of the instructor.

CSD 490. Special Studies in Communication Sciences and Disorders. 1-3 credits.
Provides students opportunity for independent study and/or small class instruction in elective topics.

CSD 499. Honors. 6 credits.
See catalog descriptions titled “Graduation with Distinction” and “Graduation with Honors.”

Communication Studies

School of Communication Studies

SCOM 220. Introduction to Interpersonal Communication. 3 credits.
Introduction to the fundamental theoretical perspectives in interpersonal communication. Emphasis on the effects of verbal and nonverbal messages on continuity and change in personal relationships. Consideration of the influence of cultural and social contexts on messages in relationships. Development of communication competence in diverse interpersonal contexts.

SCOM 231. Introduction to Alternative Dispute Resolution. 3 credits.
Study of conflict resolution processes including mediation, arbitration and negotiation. Consideration of litigation and hybrid dispute processes such as summary jury trial, rent-a-judge and panel evaluation.

SCOM 240. The Process of Human Communication. 3 credits.
Study of communication studies as a behavioral process employing verbal and nonverbal modes of interaction. Emphasis on learning theory, motivation, language, meaning and social interaction as applied to the theory of communication studies. Consideration of role of communication in all human endeavors.
SCOM 242. Presentational Speaking. 3 credits.
Study of methods for preparing and presenting public speeches. Consideration of impromptu and extemporaneous speaking, sales speeches, business presentations and other special occasion speeches. Emphasis on performance and evaluation. Prerequisite: Any 100-level SCOM course or permission of the instructor.

SCOM 243. Oral Interpretation. 3 credits.
Study and application of theories concerning the oral presentation of various forms of literature including prose, poetry, drama and nonfiction materials. Emphasis on performance. Prerequisite: Any 100-level SCOM course or permission of the instructor.

SCOM 245. Signs, Symbols and Social Interaction. 3 credits.
The study of verbal and nonverbal communication as used in human interaction. Consideration given to the function of symbolic systems in self-concept development, the structuring of reality and social discourse. Attention is directed toward the use of signs and symbols by different ethnic groups, genders, age groups and geographic groups.

SCOM 247. Small Group Communication. 3 credits.
Study of communication processes involved in solving problems when working with others in a small group context. Emphasis on concepts of roles, norms, leadership and decision making. Consideration of small group factors which influence problem-solving effectiveness. Prerequisite: Any 100-level SCOM course or permission of the instructor.

SCOM 248. Intercultural Communication. 3 credits.
The study of human communication in a variety of cultural settings and contexts. Emphasis on developing understanding and analytical skills regarding communication between people from different racial, ethnic and cultural backgrounds in both domestic and international settings. Consideration of relevance and application to social, business and political environments.

SCOM 260. Introduction to Public Relations. 3 credits.
Study of basic principles and practices of public relations. Consideration given to public relations problems and pragmatic solutions utilizing oral, written and electronic communication media and skills.

SCOM 261. Public Relations Techniques I: Written. 3 credits.
Study of writing fundamentals for public relations. Emphasis on practice of effective writing for a variety of media (press releases, public service announcements, brochures, newsletters). Must be able to use word processing software. Prerequisite: SCOM 260 or permission of the instructor.

SCOM 270. Introduction to Health Communication. 3 credits.
An introduction to the study of the theory and practice of communication in health and medical-related fields. Emphasis on communication interaction between professional health providers and patients/clients. Consideration of strategies that promote effective communication between health/medical professionals and patients/clients. Prerequisite: Any 100-level SCOM course.

SCOM 280. Introduction to Communication Research. 3 credits.
An introduction to the principles, methods and analysis techniques used in the field of communication. Emphasis on a broad-based understanding of the breadth of research in the field. Includes both qualitative and quantitative research methods, methods of literature review and research article critiques. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: SCOM 240.

SCOM 313. Topics in Communication Studies. 1-3 credits, repeatable to 6 credits.
Study of current topics and issues in human communication. Emphasis on contemporary theories, research and principles. Prerequisites: Nine hours of SCOM courses including SCOM 240 and one at 100 level or permission of instructor.

SCOM 318. Practicum in Communication Studies. 1-6 credits.
Approved co-curricular activities and/or projects of a practical nature. No more than six hours of practicum credit can be applied to major. Proposals must be submitted to and approved by the course instructor for section and credit hour registration. To receive repeat credit, see school director. Prerequisite: Permission of the school director.

SCOM 321. Communication and Conflict. 3 credits.
An examination of communication in conflict situations. Emphasis on communication competencies required for successful management and resolution of conflict. Consideration of theories of conflict and application to different conflict levels including interpersonal communication, small group communication and organizational communication. Prerequisite: SCOM 231 recommended.

SCOM 332. Mediation. 3 credits.
Study of analysis and resolution of human conflict. Emphasis on role of mediation in dispute resolution focusing on relationships, language, listening and problem-solving techniques. Consideration of the interpersonal and group approaches to study of conflict management. Prerequisite: SCOM 231 recommended.

SCOM 341. Persuasion. 3 credits.
The study of oral communication as a determinant of attitudinal and behavioral change. Emphasis on the various kinds of artistic and non-artistic proofs as they apply to human motivation. Consideration of the application of behavioral research findings to persuasion. Prerequisites: SCOM 240 and SCOM 280 or permission of the instructor.

SCOM 342. Argument and Advocacy. 3 credits.
The study of the techniques and principles of argument and advocacy. Emphasis on developing, presenting and defending a position on controversial questions. Consideration given to contemporary theories of public argument.

SCOM 345. Nonverbal Communication. 3 credits.
Study of nonverbal means through which people relate to one another. Consideration of the communicative effects of environment, facial expression, voice, posture, gestures, touch, distance and physical appearance. Prerequisites: SCOM 245 recommended and any 200-level SCOM course or permission of the instructor.

SCOM 346. Free Speech in America. 3 credits.
The study of the evolution of freedom of speech in America from Colonial times to the present day. Emphasis on the major periods of development and on the role of courts in defining freedom of speech. Special consideration of contemporary freedom of speech controversies.

SCOM 347. Communication, Diversity and Popular Culture. 3 credits.
Study of the rhetorical dimension of communication practices and texts found in popular culture. Emphasis on issues of diversity as they are manifested in the communication practices found in popular culture. Emphasis on strategic communication choices in a diverse, multicultural world. Emphasis on critical thinking, self-reflexivity and communication analysis. Prerequisite: GCOM 121, GCOM 122 or GCOM 123.

SCOM 348. Communication and Gender. 3 credits.
Study of theories and research regarding the influence of gender in various human communication contexts, both public and private. Emphasis on the critical analysis of existing theory and empirical research and the potential competent uses of communication for social change. Prerequisite: Any 100-level SCOM course or permission of the instructor.

SCOM 349. Ethnographic Approaches to Communication Studies. 3 credits.
This course offers an examination of ethnographic approaches to interpersonal, organizational, health and public communication studies. Students will analyze the role of ethnographic methods and inductive research processes toward building theories of communication and assessing communication practices. Prerequisite: Any 100-level SCOM course or permission of instructor.
SCOM 350. Organizational Communication. 3 credits.
Study of theories and principles of communication within organizations. Emphasis on analysis of formal and informal communication systems, networks, and interactions with organizational hierarchies. Consideration of both profit and not-for-profit contexts.

SCOM 352. Communication and Social Movements. 3 credits.
A study of the use of communication in social movements. Emphasis on the types of communication used in social movements and on ways to produce and respond to such messages. This course examines a variety of different social movements within the political process including nonprofit organizations. Prerequisite: SCOM 240.

SCOM 353. American Political Culture and Communication. 3 credits.
Study of functions performed by communication in politics. Emphasis on a variety of communication forms and techniques used by advocates both in campaigning and governing. Consideration of contemporary campaigns and the role of communication in their successes and failures. Prerequisites: SCOM 240 and GO SC 225 are recommended or permission of the instructor.

SCOM 354. Communication, Environment and Environmentalism. 3 credits.
An exploration of how messages and information about nature and the environment are communicated, focusing on persuasive efforts by institutions, corporations, environmental managers, lobbyists, scientific experts, politicians and citizens to describe and shape human interactions with the environment and each other. This course seeks to increase our understanding of the ways that these environmental discourses persuade (and fail to persuade) different publics.

SCOM 358. Business and Professional Communication Studies. 3 credits.
Study of techniques of effective communication in business/professional context. Emphasis on communication skills and results. Consideration of communication problems unique to the business/professional environment.

SCOM 361. Public Relations Techniques II: Visual. 3 credits.
Study of visual communication techniques for public relations. Survey of design principles and elements used for developing visually effective messages with an emphasis on publication design and production, photography and computer-mediated presentations. Students should provide a camera and be familiar with desktop publishing and presentational software. Prerequisite: SCOM 261 or permission of the instructor.

SCOM 381. Communication Criticism. 3 credits.
Study of methods of evaluating acts of persuasive communication. Emphasis on developing and applying appropriate standards to determine effectiveness of persuasion. Consideration of criticism of advertising, mass media, public speaking and other forms of persuasive communication. Prerequisites: SCOM 280 and any 100-level SCOM course or permission of the instructor.

SCOM 383. Communication Research Methodologies. 3 credits.
The study of research methods in various areas of communication. Emphasis on ability to research literature and criticize research design. Prerequisites: SCOM 280 and nine hours of SCOM courses or permission of the instructor.

SCOM 385. Qualitative Communication Research Methods. 3 credits.
Study of interpretive approaches to communication research using a variety of qualitative research methods, including field observation, qualitative interviewing, focus groups, narrative analysis and discourse analysis. Students will plan and conduct an exploratory qualitative study, prepare a written research report including a literature review and make a research presentation. Prerequisite: SCOM 280 or permission of instructor.

SCOM 386. Communication Survey Research. 3 credits.
Consideration of survey problems and methods unique to communication. Emphasis on using survey research methodology in communication audits, public relations problems and public opinion polling. Prerequisite: SCOM 280 or permission of the instructor.

SCOM 390. Directed Projects. 2-3 credits, repeatable to 6 credits.
Supervised projects related to any aspect of human communication. Emphasis on original individual or group programs beyond the school’s usual curricular or co-curricular offerings. Formal report(s) required for awarding of credit. Prerequisite: Permission of the school director.

SCOM 391. Communication Career Strategies. 1 credit.
The study of strategies for implementing a job/internship campaign. Emphasis on conducting a self assessment, locating job and internship openings, writing resumes, cover letters and follow-up messages, conducting informational interviews, networking, interviewing techniques, and marketing a communication studies degree. Prerequisite: 12 credit hours in SCOM.

SCOM 394. Core Assessment in Communication Studies. 0 credits.
Students participate in testing, interviews and other assessment activities as approved by the School of Communication Studies. Grades will be assigned on a credit/no credit basis. Prerequisites: SCOM 240, SCOM 242, SCOM 245, SCOM 280 and SCOM 341.

SCOM 431. Legal Communication. 3 credits.
Study of the role of communication in the legal process. Emphasis on communication questions/problems which litigants, lawyers, judges and juries face. Consideration of legal argument, negotiation, trial advocacy, decision making and communication technologies.

SCOM 432. Senior Seminar in Conflict and Mediation Studies. 3 credits.
An advanced seminar, capstone course for students concentrating or minoring in conflict and mediation studies. Special topics are developed to include research in conflict resolution, current trends in dispute resolution, evolving practices in conflict and mediation, as well as other relevant and timely issues.

SCOM 440. Advanced Interpersonal Communication. 3 credits.
A study of the major conceptual approaches and research methods used in the study of interpersonal communication. Emphasis on communication and relationship development, maintenance and disengagement. This course involves advanced analysis and critical evaluation of research in interpersonal communication. Prerequisites: SCOM 220 and SCOM 280 plus six additional hours of SCOM courses or permission of the instructor.

SCOM 448. Seminar in Cultural Communication. 3 credits.
Advanced study of theory and research in cultural communication and intercultural contact. Consideration of communication practices that construct and arrange social and ethnic identities within specific contexts. Prerequisites: SCOM 248 and SCOM 349 or permission of the instructor.

SCOM 449. Communication Training. 3 credits.
An examination of methods for planning, arranging and conducting communication training. Students become familiar with strategies and activities designed to help others improve their communication skills. Prerequisites: Junior standing and 12 hours in SCOM or permission of the instructor.

SCOM 450. Advanced Studies in Organizational Communication. 3 credits.
Integrated study of organizational communication theory and research. Analysis of communication systems within organizations and at their boundaries. Special attention to field studies. Prerequisite: SCOM 350 or permission of the instructor.

SCOM 453. Political Campaign Communication. 3 credits.
An advanced study of communication techniques, procedures and processes as they relate to political campaign communication. Emphasis upon the design, execution and production of various communication messages. Consideration of the impact and utilization of various technologies in political campaigns. Prerequisite: SCOM 353 or permission of the instructor.
SCOM 460. Public Relations Management. 3 credits.
Intensive study and research of advanced communication management
skills, theory and principles using case and field studies. Special attention
to systematic and ethical management of communication and action
affecting an organization's internal and external publics. Prerequisites:
SCOM 341, SCOM 361 and SCOM 386.

SCOM 461. Public Relations Campaigns. 3 credits.
The capstone course for the public relations program of study. Students
further their theoretical understanding and practical skills in the processes
of research, planning, communication/action and evaluation by conducting
campaigns for specific organizations. Prerequisites: SCOM 261, SCOM
361, SCOM 386 and SCOM 460, or permission of the instructor.

SCOM 470. Health Communication Campaigns. 3 credits.
The study of advanced theory and practice of communication in health-
related fields. Consideration of topics relating to communication issues which
affect communication interaction between health professionals and clients/patients. Emphasis on the use of communication in health communication
campaigns. Prerequisite: SCOM 270 or permission of the instructor.

SCOM/SMAD/POSC 472. Media and Politics. 3 credits.
A study of the media's role in political campaigns, concentrating on past/
present election, the media's role in covering political parties and coverage
of the governing process. Discussion of electronic and print will occur. Topics
to be examined include campaign videos, CSPAN, political ads, editorial
cartoons, TV debates, convention coverage and radio talk show commentary.

SCOM 490. Special Studies in Communication Studies. 1-3 credits.
An independent study for students to pursue individual research under the
guidance of faculty. Limited to senior communication studies majors
in good standing with permission of school director.

SCOM 495. Internship in Communication Studies. 3-6 credits,
repeatable to 6 credits.
Credit for the application of communication theory and skills in a directed,
on-the-job learning experience. Open only to communication studies majors
who meet specific criteria (see the school's Web site). Up to six
credits may be applied as electives in the communication studies major.
Prerequisite: Permission of school director.

SCOM 499. Honors in Communication Studies. 6 credits.
Year course. Prerequisite: Permission of the school director.

Computer Information Systems and Management Science

College of Business

CIS 104. Microcomputer Applications. Credit/no credit. Not
currently offered.
Introduction to the operation and use of microcomputers. Emphasis will be
placed on the use of word processing, electronic spreadsheets, database,
graphics and telecommunications software using business applications.

CIS 221. Principles of Programming. 3 credits. Offered fall and spring.
Instruction and practical experience in writing computer programs using
object oriented design and event driven logic. Projects will include the
use of control structures (sequence, selection and iteration) as well as
file and array processing logic. Students will be required to demonstrate
competency in the design of object-oriented solutions and the
implementation of event driven logic to solve real-world business
problems. Not open to students who have taken CS 238.

CIS 301. Information Technology Tools and Methods. 1 credit.
Offered fall and spring.
Gives students experience in use of management productivity tools on
microcomputers. Emphasizes appropriate uses of common software
packages to aid decision making. Specific coverage will vary. See
instructor for topics each semester. Prerequisite: COB 204.

CIS 304. Information Technology. 3 credits. Offered fall and spring.
This course is an intermediate-level information systems course. Course
topics include the workings of hardware components including the
processor, data storage media and peripheral devices. Also included are
several operating systems, file management systems and ethical concepts.
Prerequisite: Admission to College of Business or declared CIS minor.

CIS/CS 320. Telecommunications and Information
Processing. 3 credits. Offered fall and spring.
Instruction and practical experience in the design, development and management of
telecommunications topics and office information processing.
Prerequisite: One of CIS 304, ISAT 252, CS 139 or declared CIS minor.

CIS 324. COBOL Programming Language. 3 credits. Offered as needed.
Instruction and practical experience in designing and writing COBOL
programs using structured methodology. Problems are directed toward
business applications using the Common Business Oriented Language.
Prerequisite: CIS 221 with a grade of "C" or better.

CIS 331. Intermediate Computer Programming. 3 credits. Offered
fall and spring.
Study of concepts and techniques used in structured programming for
business applications including program specification, design,
development, testing, implementation and documentation. Topics include
report processing, file processing and updating, programming for batch
and interactive environments, data validation, array processing and
software engineering principles. Prerequisite: CIS 221 or equivalent with
a grade of "C" or better or declared CIS minor. Corequisite: CIS 304.

CIS 344. C Programming Language. 3 credits. Offered as needed.
Instruction and practical experience in designing and writing C programs
using structured methodology. Problems include interactive and file-
oriented business applications using the C language. Prerequisite: CIS
221 with a grade of "C" or better.

CIS 354. Advanced Visual Basic Programming. 3 credits. Offered
as needed.
Advanced course in Visual Basic programming. Emphasis will be placed on
Object-Oriented programming, sequential and random data files and
error trapping. Other topics covered will include data access objects,
client server, printing in VB and Crystal Reports. Prerequisite: CIS 221
with a grade of "C" or better.

OM 360. Operations Management. 3 credits. Offered fall and spring.
An introduction to the operations function in business. Topics include
facility design, job analysis and design, forecasting, production planning,
quality management, inventory management, scheduling and project
management. Prerequisites: CIS/COB 291 and junior standing.

CIS 361. Database for End Users. 3 credits. Offered as needed.
This course investigates the strategic uses and issues related to
databases in the general business environment. Students use database
software to generate reports, forms and queries. Prerequisite: CIS 221.

MS 363. Simulation. 3 credits. Offered spring.
A course in simulation modeling and analysis that provides students with
a foundation in the concepts, methodologies and applications of
simulation within the business environment. Construction and validation
of models, random number generation and statistical analysis of
simulation output are emphasized through the use of spreadsheet-
based software for risk analysis and a commercial software package for
more complex systems simulations. Prerequisites: COB 291 or equivalent
and junior standing.

CIS 364. Decision Support Systems. 3 credits. Offered fall.
This course provides students with an understanding of computer-based
information technologies, such as decision support systems, which
enhance the decision making capabilities of managers. Students will
learn to design and build a computer-based information system for a
business project within the Excel environment. Prerequisites: COB 291
and CIS 221.
CIS 366. Web Development. 3 credits. Offered fall.
This course is an introduction to the development of Web pages and Web sites. The three major topics covered are Hypertext Markup Language (HTML), the principles of design for Web sites and the use of a programming language for Web development. Prerequisite: CIS 221.

CIS/MKTG 370. Electronic Commerce. 3 credits. Offered as needed.
This course examines commercial opportunities created by information technology. It studies the enabling technology infrastructure and its application to fundamental business processes and strategies in pursuing electronic commerce initiatives. Prerequisite: COB 300.

MS/MGT 370. Quality Management. 3 credits. Offered as needed.
An introduction to the management of quality in organizations. Topics include statistical quality control, the design of quality management systems, implementation, measurement and management issues in quality programs. Prerequisites: COB 300 and junior standing.

CIS 393. Data Analysis and Experimental Design in Business Applications. 3 credits. Offered spring.
This course focuses on the problems of analyzing real data using applied statistical concepts and developing valid experimental designs for the collection of data to be used in business applications. The course will use current statistical software and focus on use of existing data sets. The focus will be on presentation of results and critical analysis of experimental results. Prerequisite: COB 291.

CIS 404. Advanced Computer Information Systems. 3 credits.
Offered as needed.
Instruction and cases in the design, development and management of information systems. Emphasis is placed on the managerial implementation of information systems through case analysis which will stress hands-on microcomputer usage in a problem-solving environment. Prerequisites: CIS 304 and CIS 221 or declared CIS minor.

CIS 420. Computer-Based Networking. 3 credits. Offered spring.
An introduction to computer-based networks that incorporates data, voice and video traffic between computer systems and users. Topics include the theory, design and operation of local area networks, wide area networks and private branch exchange systems. Prerequisite: CIS 320.

CIS 424. Computer Security Management. 3 credits. Offered spring.
Instruction and discussion in the design, development and implementation of a computer security program including legal and ethical considerations. Prerequisites: CIS 221 and CIS 304.

OM 426. Supply Chain Management. 3 credits. Offered as needed.
Supply Chain Management is the integration of the intra- and inter-company processes through which goods and services are delivered to customers. Topics include planning and designing the supply chain, managing materials, supply chain information systems, supply chain e-business, and managing relationships among the participants. Prerequisite: COB 300.

CIS 430. Database Design and Application. 3 credits. Offered fall and spring.
A study of the tools and techniques of database analysis and design including the implementation of the design using common database management system models. Not open to students who have taken CS 474. Prerequisite: CIS 221 or declared CIS minor.

CIS 434. Information Technology Consulting. 3 credits. Offered fall.
This course investigates the tools used by and skills necessary for information technology consultants. The class will use a team-oriented project approach. Teams will be assigned professional consulting firms as manager/mentors and will work with their manager/mentor firm to complete projects that cover each phase of the consulting life cycle. Prerequisite: Permission of the instructor.

MS 450. Issues in Operations Management. 3 credits. Offered as needed.
A capstone course for operations management majors. Focus is on the integration of the disciplines of management and decision sciences to a variety of problem situations. Extensive use of case studies, field trips and applied projects develop problem-solving expertise at the strategic, tactical and operating levels in both manufacturing and service organizations. Prerequisite: MS/MGT 370, MS 426, MS 481 or permission of the program director.

CIS 454. Systems Analysis and Design. 3 credits. Offered fall and spring.
An introduction to the techniques of systems analysis and design. Emphasizes concept of system life cycle and importance of users in system design. Prerequisite: Declared CIS minor. Corequisite: CIS 430.

CIS 466. Advanced Web Development. 3 credits. Offered as needed.
This course provides students with understanding and practical experience in server-side programming issues for Web-enabled database and e-commerce application development. Principal topics include receiving and responding to requests from browsers, connecting to database servers via middleware software, and scripting business rules and application logic on a Web server. E-commerce business issues, security implementations and object-oriented design are also covered. Prerequisites: CIS 366 and CIS 430 (CIS 430 can be taken concurrently) or declared CIS minor.

OM 481. Operations Planning and Control. 3 credits. Offered as needed.
The design and management of planning and control systems for manufacturing and service organizations. Topics include advanced issues in MRP, JIT, capacity planning, scheduling, demand management, forecasting, inventory management and logistics. Case studies, simulation and projects are used to develop and analyze planning and control activities in business organizations. Prerequisites: COB 300 and junior standing.

MS 483. Strategic Decision Making. 3 credits. Offered as needed.
A course in decision analysis that provides students with an overall framework and a set of quantitative techniques that can be used to construct and analyze models of decision problems with an emphasis on business applications. Spreadsheet-based software tools are integrated throughout the decision analysis process. Prerequisites: COB 291 or equivalent and junior standing.

CIS 484. Advanced Computer Programming. 3 credits. Offered fall and spring.
Study of architectural issues encountered in the development of enterprise-level systems, use of object-oriented development tools and methods, object library maintenance, and the implementation of systems in either a client-server or e-commerce environment. Projects will include database driven solutions, GUI design and object communication. Prerequisites: CIS 331 with a grade of "C" or better and CIS 430 with a grade of "C" or better.

CIS/MS 490. Special Studies in Information Technology and Management Sciences. 1-3 credits. Offered fall and spring.
An advanced course in information and/or decision sciences designed to give qualified students an opportunity to complete independent study under faculty supervision. Prerequisites: Senior standing, recommendation of the instructor and written approval of the director prior to registration.

CIS/MS 496. Internship in Information Technology and Management Sciences. 3 credits. Credit/No credit. Offered fall and spring.
An advanced course designed to give supervised practical experience in an operating data processing environment. Does not count toward the major. May be repeated. Pass/Fail only. Prerequisites: CIS/MS major and permission of the director.
CS 405. Information System Security Operations. 3 credits.
Offered fall and spring.
This course covers the basic material needed by information system security officers to protect their information systems. Topics covered include: certification, accreditation, site security policy, security policy enforcement and security reporting. Course does not satisfy any requirements for majors or minors in computer science. Prerequisite: CS 139 or equivalent.

Offered summer.
This course provides an introduction to the design and management of operating systems and networks, focusing on those aspects that affect information security. It provides students with the skill or ability to design, execute and evaluate information system security procedures and practices. This course does not satisfy any requirements for majors or minors in computer science. Prerequisite: CS 139 or equivalent.
CS 406. Assessment of Secure Information Systems. 1 credit. 
Offered summer.
This course considers the assessment of the technical and non-technical security features of an information system in an operational configuration. Upon completion of the course, students should be able to identify the assurance levels achieved in meeting all applicable security policies, standards and requirements. This course does not satisfy any requirements for majors or minors in computer science. Prerequisite: CS 402 or CS 457.

CS 430. Programming Languages. 3 credits. Offered fall.
Several actual programming languages are studied in terms of the fundamental principles of computer programming language design, including object-oriented programming, functional programming, concurrent programming and logic programming. Prerequisites: CS 240 and CS 350.

CS 444. Artificial Intelligence, 3 credits. Offered fall.
Students will study the history, premises, goals, social impact and philosophical implications of artificial intelligence. Students will study heuristic algorithms for large state spaces and learn to develop recursive and non-deterministic algorithms. Prerequisite: CS 240.

CS 446. Software Analysis and Design. 3 credits. Offered spring.
Contemporary software analysis and design methods, tools, notations, techniques, processes, principles and practices. Students solve analysis and design problems alone or in teams and present their work to their peers and the instructor. Prerequisites: CS 240 and CS 345.

CS/MATH 448-449. Numerical Mathematics and Computer Applications. 3 credits each semester.
Numerical solutions and error analysis of typical problems such as finding zeros of nonlinear functions, solving systems of linear and nonlinear equations, interpolation, approximation, integration, solving ordinary differential equations, optimization, and Monte Carlo methods. Prerequisites for CS/MATH 448: MATH 237, MATH 300 and MATH 248. Prerequisites for CS/MATH 449: CS/MATH 448 and MATH 336.

CS 450. Operating Systems. 3 credits. Offered fall.
Systems programming and operating systems. Network environments, windowing environments, user interfaces. Memory management, process management, file system management and device management. Prerequisite: CS 350.

CS 452. Design and Analysis of Algorithms. 3 credits. Offered spring.
An introduction to the analysis, design and theory of algorithms. Algorithms studied will be selected from searching, sorting and graph theory. Included are elements of counting, recurrence relations, direct and indirect proofs, recursion, complexity classes, language theory, decidability and undecidability. Prerequisites: CS/MATH 228 and CS 240.

CS 454. Internship in Computer Science. 1-3 credits. Offered summer.
An advanced course to give supervised practical experience in a professional computing environment. May be taken multiple times for credit, but no more than three credits may be used in the computer science program graduation requirements. Prerequisites: Junior standing, major in computer science and permission of the instructor.

CS 457. Information Security. 3 credits. Offered fall.
This course covers the basic issues of information system security. The roles of planning, management, policies, procedures and personnel in protecting the confidentiality, integrity and availability of information are described. Specific threats (malicious code, network attacks and hostile content) and widely used countermeasures (access control, mechanisms, firewalls, intrusion detection systems) are also discussed. Prerequisite: CS 450.

CS/ISAT 460. Local Area Networks. 3 credits. Offered fall and spring.
An overview of LAN hardware, LAN topology and design, and LAN protocols. Installation and management of LAN operating systems and LAN services (address management, name management, file and print sharing, account management). Prerequisite: CS 350 or CS/CIS 320 or equivalent.

CS/ISAT 461. Internetworking. 3 credits. Offered spring.
Wide Area Network (WAN) and Metropolitan Area Network (MAN) design. Audio, voice, data and TV transmission over ATM/B-ISDN networks. The SONET signal hierarchy and Q3 standard interface model. Network security. Performance analysis of a given network. Prerequisite: CS/ISAT 460.

CS/ISAT 462. Network Applications Development. 3 credits. Offered spring.
Design and implementation of network-based applications using languages and architectures such as sockets, JAVA, TL1 and CORBA. Concepts in distributed processing, including synchronization of interprocess communication and management of replicated data. Analysis of performance issues related to distributed applications. Prerequisites: CS/ISAT 460 and either CS 239 or IS 344.

CS/ISAT 463. Network Analysis and Design. 3 credits. Offered spring.
In-depth introduction to the techniques and tools used to design and analyze computer and telecommunications networks. Overview of issues related to network performance, including the impact on cost, reliability and security. Prerequisites: CS/ISAT 460 and either CS 239 or IS 340.

CS/ISAT 464. Issues in the Telecommunications Business. 3 credits. Offered spring.
Addresses complex business concepts and issues in the telecommunications industry. Explores the interrelation of the economics of the telecommunications industry with ensuing social, ethical and security issues. Discusses topics in product and service creation, marketing, customer service and billing, and electronic commerce. Prerequisites: CIS 320, SMAD 356, and ISAT 340 or equivalent.

CS 474. Database Design and Application. 3 credits. Offered spring.
Students study database design and management with emphasis placed on data definition languages, data manipulation languages, query languages and management of the database environment. Prerequisite: CS 345, CS 274 or ISAT 340.

CS 475. Distributed Database Management. 3 credits. Offered spring.
Students learn the concepts of client-server architectures and other aspects that arise in the design of distributed database systems. Prerequisite: CS 474.

CS 476. Database Administration. 3 credits. Offered spring.
Students learn to administer a database by manipulating physical and logical components of a database management system. Topics include creation of an instance, managing of tables, indexes, privileges, profiles and roles. Prerequisite: CS 474.

CS 480. Selected Topics in Computer Science. 1-3 credits. 
Offered as demand warrants.
Topics in computer science which are of interest but not otherwise covered in the regular computer science offerings of the department. Offered only with the approval of the department head; may be repeated for credit when course content changes. Prerequisite: CS 239. Topics selected may dictate further prerequisites; students should consult the instructor prior to enrolling for course.

CS 482. Selected Topics in Information Security. 1-3 credits. 
Offered spring.
Topics in information security. Offered only with the approval of the department head; may be repeated for credit when course content changes. Prerequisite: CS 240 and CS 350. Topics selected may dictate further prerequisites; students should consult the instructor prior to enrolling for the course.

This course develops a computer graphics application package based on standard graphics functions as well as attributes of a graphical user interface. It includes experience in applying interactive computer graphics techniques to industrial problems. Prerequisites: CS 240 and CS 350.
CS 497. Independent Study. 1-3 credits. Offered fall and spring.
An advanced course to give independent study experience under faculty supervision. May be taken multiple times for credit, but no more than three credits may be used in the computer science program graduation requirements. Prerequisites: Junior standing, major in computer science and permission of the program coordinator.

CS 499. Honors. 6 credits. Offered fall and spring.
Year course.

Criminal Justice
Department of Justice Studies
CRJU 328. Criminal Procedure. 3 credits.
Study of the criminal justice process from arrest through appeal with emphasis upon the rights of the accused including due process, the right to counsel, search and seizure, and the privilege against self-incrimination. Prerequisite: POSC 210 or PUAD 215.

CRJU 329. Criminal Investigation and Evidence. 3 credits.
Characteristics, legal aspects, organizational objectives, theories and systematic procedure of criminal investigation. Includes a survey of the investigative function, interviewing witnesses, interrogation, physical evidence, the investigation of common serious offenses and the principles of evidence, including the legal rules controlling the presentation of evidence in court.

CRJU 498. Internship in Criminal Justice. 4 credits. Offered each semester as requested.
Provides students with an opportunity for experiential learning in an agency setting. Research paper required. Prerequisite: Permission of instructor.

Continuing Education
College of Graduate and Outreach Programs
CE 490. Special Studies in Continuing Education. 1-3 credits.
This course is designed to allow exploration of current topics of interest including various trends and issues in a given field of study.

Dance
School of Theatre and Dance
DANC 110. Associate Group Dance Repertory I (0, 4). 1 credit. (Offered fall.)
Introduction to group dance experiences through rehearsal, performance, dance technique training and technical theatre practice. Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.

DANC 140. Elementary Modern Dance (0, 4). 2 credits. Offered fall and spring.
Emphasis on modern dance technique and fundamentals of improvisation and choreography. May be repeated for credit.

DANC 142. Elementary Ballet (0, 4). 2 credits. Offered fall and spring.
Fundamentals of ballet technique, basic vocabulary and combinations. May be repeated for credit.

DANC 143. International Folk Dance (0, 4). 2 credits. Offered fall and spring.
Traditional folk dance steps and international folk dances. Emphasis on dances from eastern and western Europe, Mexico and Israel. May be repeated for credit.

DANC 144. Ballroom Dance (0, 4). 2 credits. Offered fall and spring.
Ballroom dance skills including steps, styling and leading, and following for American and Latin ballroom dance forms. May be repeated for credit.

DANC 146. Jazz Dance (0, 4). 2 credits. Offered fall.
Fundamentals of jazz technique, basic vocabulary and combinations. May be repeated for credit.

DANC 147. Tap Dance (0, 4). 2 credits. Offered fall.
Fundamentals of tap dance, basic vocabulary and combinations. May be repeated for credit.

DANC/THEA 171. Performance Production. 3 credits. Offered fall and spring.
An introduction to the methods of the production of scenery, properties, costumes, lighting, sound and performance management for theater and dance performances. Instruction in the skills required for the operation of associated tools and equipment and instruction in the skills required for the operation of lighting and sound equipment will be taught.

DANC 210. Associate Group Dance Repertory II (0, 4).
1 credit. (Offered spring.)
Practice in group dance experiences through rehearsal, performance, dance technique training and technical theatre practice. Prerequisites: DANC 110 or the equivalent and concurrent enrollment in a dance technique course.

DANC 211. Contemporary Dance Ensemble Repertory I (0, 4). 2 credits. Offered fall and spring.
Introduction to a modern dance ensemble with performance, choreographic and technical theatre experiences. May be repeated for credit. Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.

DANC 212. Virginia Repertory Dance Company I (0, 4).
2 credits. Offered fall and spring.
Rehearsal, performance and technical theatre experiences in a modern dance company. May be repeated for credit. Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.

DANC 240. Intermediate Modern Dance I (0, 4). 2 credits. Offered fall and spring.
Intermediate skills in modern dance technique. May be repeated for credit. Prerequisite: DANC 140 or permission of the instructor.

DANC 242. Intermediate Ballet I (0, 4). 2 credits. Offered fall and spring.
Intermediate skills in ballet technique. May be repeated for credit. Prerequisite: DANC 142 or permission of the instructor.

DANC 245. Dance Improvisation (0, 4). 2 credits. Offered fall.
Development of individual, group and environmental awareness; extension of individual movement vocabulary; and theory and exploration of the interrelationships of the visual and theatre arts through structured improvisation.

DANC 246. Intermediate Jazz. 2 credits. Offered spring.
Intermediate skills in jazz dance technique, vocabulary and movement combinations. May be repeated for credit. Prerequisite: DANC 148 or permission of the instructor.

DANC 247. Intermediate Tap. 2 credits. Offered once every other year.
Intermediate skills in tap dance technique, vocabulary and models of sequencing. May be repeated for credit. Prerequisite: DANC 147 or permission of instructor.

DANC 248. History of Dance: Renaissance Through the 20th Century. 3 credits. Offered spring.
A survey of dance history in Western civilization from the Renaissance to the present. Emphasis is on the dance idioms of ballet and modern. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major.

DANC 311 Contemporary Dance Ensemble Repertory II (0, 4). 2 credits. Offered fall and spring.
Intermediate-level experiences in performance, choreography and technical theatre with a modern dance ensemble. May be repeated for credit. Prerequisites: DANC 211 or the equivalent and concurrent enrollment in a dance technique course.
DANC 312. Virginia Repertory Dance Company II (0, 4). 2 credits. Offered fall and spring.
Advanced rehearsal, performance and technical theatre experience in a modern dance company. May be repeated for credit. Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.

DANC 320. Anatomy and Somatic Studies for the Dancer. 3 credits. Offered fall.
An introduction to the structure and function of the human body, along with an overview of contemporary bodywork theories and techniques essential to the education of dancers. Emphasis will be on the application of knowledge within the context of dance technique.

DANC 340. Intermediate Modern Dance II (0, 4). 2 credits. Offered fall and spring.
Modern dance technique on an accelerated intermediate level. May be repeated for credit. Prerequisite: DANC 240 or permission of the instructor.

DANC 342. Intermediate Ballet II (0, 4). 2 credits. Offered fall and spring.
Ballet technique on an accelerated intermediate level. May be repeated for credit. Prerequisite: DANC 242 or permission of the instructor.

DANC 345. Dance Composition I (2, 2). 3 credits. Offered spring.
Introductory studies of dance composition with focus on the learning and development of choreographic techniques and styles. Compositional movement studies and solo/duet dances will be utilized for exploring and developing the student's individual creativity. Prerequisite: DANC 245 or permission of the instructor.

DANC 346. Intermediate Jazz II/Musical Theater Styles. 2 credits. Offered fall.
A continuation of the jazz dance techniques in the dance program at the upper-intermediate level. Primary focus of this class will be on the study and training of historic and contemporary musical theatre jazz movement. May be repeated for credit. Prerequisite: DANC 246 or permission of instructor.

DANC 390. New Directions in Dance. 1-3 credits. Offered once a year.
Study of selected timely topics in dance. May be repeated when course content changes. See e-campus for current topic.

DANC 411. Contemporary Dance Ensemble Repertory III (0, 4). 2 credits. Offered fall and spring.
Advanced-level experiences in performance, choreography and technical theatre with a modern dance ensemble. May be repeated for credit. Prerequisites: DANC 311 or the equivalent and concurrent enrollment in a dance technique course.

DANC 412. Virginia Repertory Dance Company III (0, 4). 2 credits. Offered fall and spring.
Advanced rehearsal, performance and technical theatre experience in a modern dance company for the professional level dancer. May be repeated for credit. Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.

DANC 440. Advanced Modern Dance (0, 4). 2 credits. Offered fall and spring.
Modern dance technique on an advanced level. May be repeated for credit. Prerequisite: DANC 340 or the equivalent.

DANC 442. Advanced Ballet (0, 4). 2 credits. Offered fall and spring.
Ballet technique on an advanced level. May be repeated for credit. Prerequisite: DANC 342 or the equivalent.

DANC 445. Dance Composition II (2, 2). 3 credits. Offered fall.
Dance composition study involving the development and use of complex choreographic structures with emphasis on creating small and large group dance compositions, as well as the exploration of contemporary choreographic styles and techniques. Prerequisite: DANC 345 or permission of the instructor.

DANC 446. Advanced Jazz. 2 credits. Offered spring.
A continuation of the dance technique in the dance program. Advanced skills in jazz technique with special emphasis on the development of performance skills. May be repeated for credit.

DANC 449. The Dance Professional. 3 credits. Offered fall.
Introduction to the professional dance world through lectures, discussions and research. Emphasis will be placed on the preparation of skills and materials necessary to pursue dance as a career. Contemporary dance trends and issues will also be explored.

DANC 450. The Open Studio: An Interdisciplinary Approach to Creative Arts. 3 credits. Offered once every other year.
Introduction to the interdisciplinary studio through discussion of the history of interdisciplinary art and exposure to contemporary examples from dance, theatre, music, creative writing, visual art, film and video. Emphasis on production of original work that evidences the use of another media or collaborative work by artists from different disciplines. Prerequisites: Permission of the instructor(s) and advanced skill level in one or more of the creative arts.

DANC/THEA 471. Stage Management. 3 credits. Offered once every other year.
Study and analysis of stage management. Consideration given to the methods and strategies for successful stage management for theatre, dance and other performances. Emphasis on developing management and organizational skills. Prerequisite: DANC 171.

DANC 479. Methods of Teaching Dance. 3 credits. Offered spring.
An introduction to the theory and practice of teaching dance. Course will provide introductory level teaching experiences and will encourage the development of the student's personal educational philosophy.

DANC 490. Special Studies in Dance. 1-3 credits each semester. Offered fall and spring.
Designed to give superior students in dance an opportunity to complete independent study and/or research under faculty supervision. May be repeated for credit. Prerequisite: Permission of the dance program coordinator.

DANC 495. Internship in Dance. 1-3 credits. Offered fall and spring.
A faculty arranged, prepared and monitored internship program designed to provide practical experiences in dance. Prerequisite: Permission of dance area coordinator.

DANC 499. Honors. 6 credits. Offered fall and spring.
Year course.

Early Childhood Education

College of Education

ECED 371. Practicum in Early Childhood Education. 2 credits.
Preschool and kindergarten placements will provide for extensive observation and experience with young children and the opportunity to assist teachers as they facilitate children's growth and learning in contexts that are culturally varied. Prerequisite: Admission to teacher education. Corequisites: READ 366 and ECED 372.

ECED 372. Introduction to Early Childhood Education. 3 credits.
Introductory study of the role of the teacher, the role of the learner and the developing child as the basis for designing programs and developing curriculum for children 0-8 with different abilities and from various cultures. Prerequisites: Admission to teacher education. Corequisites: READ 366 and ECED 371.

ECED 401. Problems in Early Childhood Education. 1-3 credits.
Considers current problems and issues in early childhood education. Prerequisite: Permission of the program coordinator.

ECED 412. Natural and Social Sciences for Young Children. 3 credits.
Study of content, processes, teaching methods and materials for teaching science and social studies in the early childhood classroom. Knowledge of cognitive development as applied to the selection of content in method will be examined. Prerequisites: Grades of “C” or better in ECED 371, ECED 372 and READ 366; ECED 441, ECED 443, ELED 444 and READ 436. Corequisite: ECED 461.
ECED 441. Practicum in Child Development. 1 credit. 
This course is a supervised field experience working in an early childhood laboratory classroom with pre-kindergarten age children. It emphasizes applications of age-appropriate guidance strategies for facilitating children's total development, including children with diverse needs. Observational strategies for assessing growth and progress are developed. Prerequisites: Grades of "C" or better in ECED 371, ECED 372 and READ 366; a current TB test. Corequisites: ECED 442, ECED 443 and READ 436.

ECED 442. The Young Child. 3 credits. 
This course integrates child development knowledge and theories, academic content knowledge, and age/stage appropriate guidance strategies for teaching children pre-kindergarten through grade three. Emphasis on observational/assessment strategies and inquiry processes related to young children's growth and development as a basis for teaching decisions. Prerequisites: Grades of "C" or better in ECED 371, ECED 372 and READ 366; a current TB test. Corequisites: ECED 441, ECED 443, ELED 444 and READ 436.

ECED 443. Practicum in Primary Grades. 1 credit. 
This two-hour, weekly practicum in first or second grade will provide students with experience in planning and implementing math and literacy experiences for young children. Prerequisites: Grades of "C" or better in ECED 371, ECED 372 and READ 366. Corequisites: ECED 441, ECED 442, ELED 444 and READ 436.

ECED 461. Integrated Day Practicum. 3 credits. Offered fall and spring. 
This all-day, primary-grade practicum allows students to demonstrate their educational decision-making skills through planning, implementing and evaluating appropriate activities for children of diverse interests, needs and abilities. Strategies to assess learning, guide behavior, work with professionals and family involvement are applied in this practicum and accompanying seminar. Prerequisites: Grades of "C" or better in ECED 361, ECED 372, ECED 441, ECED 442, ECED 443, READ 366, READ 436 and ELED 444, and current TB test. Corequisites: ECED 446, ELED 462.

ECED 481. Fieldwork in Family and Community. 2 credits. Offered fall and spring. 
This fieldwork is designed to provide support for students and reinforces skills and concepts learned during the education program which are being applied during student teaching. Particular attention is given to school and family/community unity. Prerequisite: Grades of "C" or better in ECED 361, ECED 372, ECED 441, ECED 442, ECED 443, ECED 454, ECED 461, READ 366, READ 436, ELED 444 and ELED 462. Corequisite: ECED 480.

ECED 490. Special Studies in Early Childhood Education. 1-3 credits. Offered fall and spring. 
Designed to give capable students opportunities to complete independent research on educational problems under faculty guidance. The plan for the study must be presented to the department head in prescribed form for approval prior to registration.

ECED 499. Honors in Early Childhood Education. 3 credits. Offered fall and spring.

Economics

College of Business

GECON 200. Introduction to Macroeconomics. 3 credits. Offered fall, spring and summer. 
Behavior of economic systems at the national and international levels. Topics include the methodology of economics as a social science, supply and demand, definition and measurement of important macroeconomic variables, and theoretical models of growth, inflation, interest rates, unemployment, business cycles, stabilization policy, exchange rates and the balance of payments.

ECON 201. Principles of Economics (Micro). 3 credits. Offered fall, spring and summer. 
Topics covered include supply and demand, consumer choice, economics of the firm and industry, production costs, distribution theory, international trade, comparative economic systems, and the philosophy of economics.

ECON 222. Contemporary Economic Issues and Policy Alternatives. 3 credits. Offered to be announced. 
Application of elementary economic theory to current economic issues. Special emphasis is placed on public policy alternatives. Prerequisites: ECON 201 and GECON 200.

ECON 225. Money and Banking. 3 credits. Offered summer. 
Examines the economic role of money, banking and monetary policy within current institutional settings and under alternative theories explaining the interrelationships between money, the financial system and economic activity. Prerequisites: ECON 201 and GECON 200.

ECON 270. International Economics. 3 credits. Offered fall, spring and summer. 
A survey of the relationships among national economies, including trade theory, trade policy, international monetary relations and the balance of payments. Not open to students who are enrolled in or have already received credit in ECON 370 or 372. Prerequisites: ECON 201 and GECON 200.

ECON 300. Special Topics in Economics. 3 credits. Offered to be announced. 
Examination of special topics in theoretical or applied economics not covered in the current economics curriculum. Specific topics to be determined by the instructor. Prerequisites: GECON 200 and ECON 201 or equivalent.

ECON 301. Economics in Transition. 3 credits. Offered spring. 
A study of the evolution and operation of the post-Soviet Union economy. Special emphasis is given to the new independent states and their market reforms and foreign economic policies. Prerequisites: ECON 201 and GECON 200.

ECON 302. History of Economic Thought. 3 credits. Offered spring. 
Major contributions within the history of economic thought are studied in relation to both the historical circumstances within which they arose and the role each played in shaping contemporary competing economic doctrines. Prerequisites: ECON 201 and GECON 200.

ECON 305. Environmental Economics. 3 credits. Offered fall. 
An analysis of the problems of the environment, their causes and alternative proposed methods of solution. Air and water pollution will be stressed as case studies of environmental problems. Prerequisite: ECON 201.

ECON 306. The Economics of Women and The Family. 3 credits. Offered fall. 
Examines facts and theories pertaining to the various economic roles of women in America. The economics of marriage, divorce and childbearing are examined as are empirical and theoretical explanations of occupational and wage differentials between the sexes. Prerequisite: ECON 201.

ECON 310. Economic History of the United States. 3 credits. 
Offering to be announced. 
A survey of the economic growth and development of the United States from Colonial times to the present. Prerequisites: ECON 201 and GECON 200.

ECON 312. Comparative Economic Systems. 3 credits. Offered fall. 
An examination of the distinguishing characteristics, institutions and performances of the various types of major economic systems in the world today. Prerequisites: ECON 201 and GECON 200.

ECON 326. Public Finance. 3 credits. Offered fall. 
Introduction to the field of public finance including theories and principles of taxation, government expenditure, public debt and fiscal administration. Studies interrelationships between federal, state and local finance, shifting and incidence of tax, and the burden of public debt. Prerequisites: ECON 201 and GECON 200.
ECON 331. Intermediate Microeconomic Theory. 3 credits.
Offered fall and spring.
Intermediate analysis of the determination of price, resource allocation and product distribution in a free enterprise economy. Prerequisites: ECON 201, GECON 200, and MATH 205 or MATH 235.

ECON 332. Intermediate Macroeconomic Theory. 3 credits.
Offered fall and spring.
Intermediate-level analysis of the major approaches to the determination of economic aggregates with emphasis given to structuring a common analytic framework. Prerequisites: ECON 201, GECON 200, and MATH 205 or MATH 235.

ECON 340. Economics of Natural Resources. 3 credits. Offered fall.
Emphasizes availability of exhaustible resources and optimum utilization rates. Examines questions of intertemporal allocation and costs of growth. Prerequisites: ECON 201 and GECON 200.

ECON 345. Industrial Organization. 3 credits. Offered fall and spring.
An examination of contemporary U.S. industrial concentration both in the aggregate and within particular industries with emphasis on public policy implications. Alternative theories of the firm are considered in relation to different market structures. Prerequisites: ECON 201 and GECON 200.

ECON 360. Labor Economics. 3 credits. Offered fall.
Study of the economics of labor markets. Attention is given to the structure and operation of labor markets, wage determination, employment, unions, and contemporary labor problems and policies. Prerequisites: ECON 201 and GECON 200.

ECON 365. Economic Development. 3 credits. Offered fall.
A study of the characteristics of under-development, theories of economic development and the underlying causes for varying standards of living among the world’s people. Considerable time will be spent on studying social and cultural factors that influence economic growth and their potential effect on the economic progress of the less-developed countries. Prerequisites: ECON 201 and GECON 200.

ECON 370. International Trade and Trade Policies. 3 credits. Offered fall.
An examination of the classical and modern theories of international trade, the effects of such trade on the domestic economy, the effects of barriers to free trade and an appraisal of U.S. commercial policy since 1948. Prerequisites: ECON 201 and GECON 200.

ECON/FIN 372. International Finance and Payments. 3 credits.
Offered fall, spring and summer.
Examines international financial markets, instruments and institutions; determination of spot and forward exchange rates, interest arbitrage, hedging and speculation; and alternative policies for achieving equilibrium in international payments. Prerequisites: ECON 201 and GECON 200.

ECON 382. Urban Economics. 3 credits. Offered spring.
A detailed examination of the economic aspects of urbanization with emphasis on metropolitan land use and location theory. Urban problems considered include housing, poverty, labor markets and municipal finances. Prerequisites: ECON 201 and GECON 200.

ECON 385. Econometrics. 3 credits. Offered fall and spring.
Course discusses construction of models based on economic theory including identification of variables, development and testing of hypotheses for single- and multi-equation systems. Prerequisites: ECON 201, GECON 200, COB 191 or MATH 220, and MATH 205 or MATH 235.

ECON 394. Economics Internship. 3 credits. Offered fall, spring and summer.
Academic credit for an approved internship experience. Registration for the course must be concurrent with the internship. An application showing how all requirements for the internship will be met must be approved prior to registration. May be taken on a credit/no-credit basis only. Prerequisites: ECON 201 and GECON 200.

ECON 400. Advanced Topics in Economics. 3 credits. Offered to be announced.
Examination of special topics in theoretical or applied economics not covered in the current economics curriculum. Specific topics to be determined by the instructor. Prerequisites: ECON 331 and ECON 332 or permission of instructor.

ECON 401. Senior Assessment in Economics. 0 credits. Offered fall and spring.
Students participate in testing, interviews and other assessment activities as approved by the economics program. Grades will be assigned on a credit/no-credit basis. Prerequisites: ECON 331, ECON 332, ECON 385 and senior standing.

ECON 405. Political Economy. 3 credits. Offered spring.
Evaluation and critique of mainstream and nontraditional economic paradigms. The interaction of economics and politics in the United States as it affects the distribution of wealth and domestic and international economic policies. Prerequisites: ECON 201, GECON 200, and junior or senior standing.

ECON 426. Theory of Public Choice. 3 credits. Offered spring.
Examines the justification for and nature of public sector activity in a market-based mixed economy. Emphasis is placed on theories of market failure, voting models, conditions of production and provision in the public sector, and models of bureaucratic behavior. Prerequisite: ECON 326 or ECON 331.

ECON 430. Monetary Theory. 3 credits. Offered spring.
Examines alternative theories of the relationships between money, interest rates, price levels, employment and output in order to assess the effectiveness of monetary policy for economic stabilization. Prerequisites: ECON 332 and either MATH 205 or MATH 235.

ECON 431. Advanced Microeconomic Theory. 3 credits. Offered fall.
Examines theories of general equilibrium and the distribution of income, welfare economics, capital theory and information theory. Prerequisites: ECON 331, ECON 332 and either MATH 205 or MATH 235.

ECON 432. Advanced Macroeconomics. 3 credits. Offered fall.
Study of macroeconomics at an advanced level. Topics will normally include, but are not limited to, long-run models of economic growth and short-run models of economic fluctuations. Alternative policies for improving economic performance will be identified and evaluated. Prerequisites: ECON 332, and MATH 205 or MATH 235.

ECON 455. Economics of Regulated Industries. 3 credits. Offered fall.
A study of the rationale, methods and impact on industry behavior of government regulations including public utility regulation and antitrust policies relating to monopoly and competition in the United States. Prerequisite: ECON 331 or ECON 345. Prerequisite or corequisite: ECON 385.

ECON 460. Human Resources. 3 credits. Offered fall.
Examines the role of education and training in enhancing productive skills, employment opportunities and income. Also focuses on American employment and health and welfare policies that relate to the labor market, giving attention to empirical studies. Prerequisite: ECON 306, ECON 331, ECON 332 or ECON 360.

ECON 475. Regional Economics. 3 credits. Offered spring.
A study of local and subnational economics viewed as integral parts of a unified system. Emphasis will be given to the basic economic forces associated with regional growth and decline and related public policy considerations. Prerequisite: ECON 331, ECON 340, ECON 385, and ECON 370 or ECON 382.

ECON 484. Mathematical Economics. 3 credits. Offered to be announced.
Course employs techniques of differentiation and integration for microeconomic and macroeconomic analysis at the intermediate level. Prerequisites: ECON 331, ECON 332, and MATH 205 or MATH 235.

ECON 485. Advanced Econometrics. 3 credits. Offered spring.
Theory and application of statistical techniques to study empirical relationships among economic variables. Students will use econometrics to develop forecasts of economic activity, to estimate limited dependent variable and simultaneous equation models, and to model various time-series processes. Prerequisite: ECON 385.

ECON 487. Economic Consulting. 3 credits. Offered fall.
A research-oriented, senior-level course that provides students an opportunity to integrate theoretical knowledge, quantitative techniques and writing skills through research on a set of simulated consulting projects. Prerequisites: ECON 331, ECON 332, ECON 385 and senior standing.
ECON 490. Special Studies in Economics. 1-3 credits each semester. Offered fall, spring and summer.

Designed to give capable students in economics an opportunity to complete independent study under faculty supervision. Admission by recommendation of the instructor and written permission of the director of economics prior to registration. May not be used toward fulfillment of the 400-level requirement for a major in economics.

ECON 499. Honors. Year course. 6 credits. Offered fall and spring.

See catalog description entitled “Graduation with Distinction” and “Graduation with Honors.” Three credits of ECON 499 may be counted toward fulfillment of the 400-level requirement for a major in economics.

Education

College of Education

EDUC 150. Information in Contemporary Society. 3 credits.

Concerns the individual’s need for information, especially that which will assist in solving problems related to everyday needs and interests and with the agencies and resources which can help to meet those needs. Will not count as social science course for teacher licensure.

EDUC 310. Teaching in a Diverse Society. 2 credits.

This course will examine how personal and professional values, attitudes, beliefs and behaviors affect teaching and learning. The pre-service teachers will develop an understanding of similar and unique characteristics of students in grades 6-12, including culture, heritage, language and learning abilities. Corequisites: EDUC 311, READ 432 for middle and secondary students. EDUC 312 for special education students.

EDUC 311. Field Experience in Middle and Secondary Education. 2 credits.

Students devote 60 clock hours to classroom activities that emphasize diversity and literacy in middle and secondary schools under university and public school supervision. Satisfactory performance in this course is required for continuing in teacher education. Corequisites: EDUC 310, READ 432 for secondary education minors; EDUC 310 and/or READ 312 for middle education minors.

EDUC/SPED 312. Field Experience in Special Education and Diversity. 1 credit.

Students devote 30 clock hours to activities in school and nonschool settings that emphasize diversity of individuals and families. Corequisites: EDUC 310.

EDUC 332. Single Camera TV Operation. 1 credit.

A basic understanding of the principles of video equipment along with skills in the use, set up and operation of one-half inch portable videocassette systems.

EDUC 336. Photography in Education. 1 credit.

An introduction to the use and operation of 35mm SLR cameras. Note: All needed equipment will be supplied.

EDUC 339. Production of Computer-based Materials for Education. 1 credit.

Creating educational material in a variety of media for computer-based presentations. Principles of creating visual messages will be examined.

EDUC 360. Foundations of American Education. 3 credits.

A study of the practices and issues that affect American education. Consideration is given to such topics as philosophical approaches to education, history of American education, and the organizational and cultural aspects of schools which influence educational practices.

EDUC 370. Instructional Technology. 3 credits.

Principles and procedures of a teaching/learning process designed to provide reliable, effective instruction to learners through systematic application of instructional technology. Includes selecting, producing, evaluating and utilizing nonprint media and equipment for application to instructional process.

EDUC 371. Methods in Teaching English as a Second Language. 3 credits.

This course is designed to provide preservice English as a Second Language to teachers with experiences in designing and implementing instructional strategies to meet the linguistic needs of nonnative students and utilizing assessment instruments to evaluate their progress with a contextualized focus.

EDUC 375. Selected Topics in Media. 1-2 credits.

An in-depth study of a narrowly defined topic or practice in media. May be repeated for credit when course content changes.

EDUC 381. Field Experience in English as a Second Language. 3 credits.

The course provides supervised field experiences in working with English as a Second Language students, NK-12. Preservice teachers will demonstrate competencies developed in the English as a Second Language endorsement program and in consultation with a field supervisor. Prerequisite: Completion of ESL minor requirements.

EDUC 401. Problems in Education. 1-3 credits.

Workshop experiences for the development and training of teachers. Prerequisites: EDUC 360 and permission of the program coordinator.

EDUC 416. School Discipline and Classroom Management. 1 credit.

Theory and practices in classroom management and discipline, including specific models and the various legal aspects will be examined.

EDUC 422. Concepts in Second Language Acquisition Research and Application. 3 credits.

This course will help students gain familiarity with second language acquisition research and practice, characteristics of second language learners, assessment and teaching strategies for second language acquisition.

EDUC 425. Cross-Cultural Education. 3 credits.

The course provides students with knowledge of the effects of socio-cultural variables in an instructional setting.

EDUC 428. Assessment for Curriculum Development in English as a Second Language. 3 credits.

The course provides students with a variety of assessment practices for profiling nonnative students’ abilities and for developing appropriate curriculum and evaluating programs.

EDUC 430. General Education Curriculum K-12 Overview. 1 credit.

This course will provide an overview of curriculum in grades K-12. An understanding of objectives, content, materials and trends associated with curriculum will be addressed. Corequisites: READ 430, MIED 530 and SPED 410.

EDUC 480. Student Teaching. 3-12 credits.

Enables students to apply, in the public school classrooms and the comprehensive child development programs, those skills and attitudes acquired in all components of teacher education. Under the guidance of university supervisors, students are provided activities designed to familiarize them with the classroom teacher’s role. Prerequisites: GPSYC 160, PSYC 270, EDUC 360, appropriate methods courses and permission of the coordinator of field experiences.

EDUC 490. Special Topics in Education. 3 credits.

In-depth examination of selected topics which are of current importance in the field of education. Offered only with approval of School of Education director. May be repeated for credit when course content changes. Prerequisites: Atleast junior standing and consent of the instructor.

EDUC 499. Honors. 3-6 credits.

Independent research topic initiated and completed by qualified upper-division students. See catalog descriptions entitled “Graduation with Distinction” and “Graduation with Honors.”
Elementary Education

College of Education

ELED 308. Child Development: Birth Through Adolescence. 3 credits.
Skills for observing, recording and interpreting the behavior of children ages three through 12 will be developed so that adult intervention and guidance is appropriate and meaningful. Prerequisites: PSYC 160 and admission to teacher education. Corequisites: ELED 309, ELED 310, ELED 311 and READ 366.

ELED 309. Learning and Teaching in the Elementary School. 3 credits.
This course provides pre-service teachers with an introduction to learning and teaching processes. Factors affecting learning and the discoveries from brain research set the stage for decisions teachers make about instruction. Models of instruction, active engagement, creating a climate for learning and appropriate planning, implementation and reflection will foster the development of teachers. Throughout the course, issues of age, culture, learning preferences and ability will be presented. Prerequisite: Admission to teacher education. Corequisites: ELED 308, ELED 310, ELED 311 and READ 366.

ELED 310. Diversity in Elementary Education. 3 credits.
This course guides students in critically examining their own perspectives regarding diversity, seeks to expand students' awareness and understanding of individuals and groups representing differences, and explores pedagogical issues and practices essential for embracing the whole community of learners and their families. Prerequisite: Admission to teacher education. Corequisites: ELED 308, ELED 309, ELED 311 and READ 366.

ELED 311. Practicum with a Focus on Learners and Learning. 3 credits.
This field experience supports the study of child development and emerging literacy through direct observation and interactions with children in a classroom setting. Candidates will examine and reflect on their personal attitudes, assumptions and behaviors toward students and their families who represent diverse class, cultural and linguistic backgrounds. Prerequisite: Admission to teacher education. Corequisites: ELED 308, ELED 309, ELED 310 and READ 366.

ELED 411. Practicum with a Focus on Curriculum Connections. 3 credits.
This field experience provides candidates with a classroom of students and a mentor teacher with whom to practice the teaching of reading, math, science and social studies. The accompanying seminar explores the integration and construction of meaningful curriculum in elementary education contexts and supports students in their ongoing professional development. Prerequisite: ELED 311. Corequisites: READ 436, ELED 432, ELED 433 and ELED 434.

ELED 432. Children and Science. 3 credits.
This course is a study of content, processes, pedagogy and materials for teaching science in the elementary classroom. Knowledge of cognitive development as applied to the selection of content, methods, and materials and strategies for organizing the learning environment for elementary learners will be examined. Prerequisites: ELED 308, ELED 309, ELED 310, ELED 311 and READ 366. Corequisites: READ 436, ELED 411, ELED 432 and ELED 434.

ELED 433. Children and Mathematics: Number, Operations, Algebraic and Geometric Reasoning. 3 credits.
The first of two courses that provides students with knowledge, skills and understanding of design and implement for effective, developmentally appropriate mathematics instruction for grades PreK-6. Emphasis is on children's mathematical learning and pre-numerical stages through the acquisition of advanced numerical processes and operations and connections to geometric and algebraic reasoning. Prerequisites: MATH 107, MATH 108, MATH 207 and READ 366. Corequisites: READ 436, ELED 411, ELED 432 and ELED 434.

ELED 434. Children and Social Studies. 3 credits.
This course focuses on the content, processes, pedagogy and materials for teaching social studies in the elementary classroom. Knowledge of cognitive development as applied to the selection of content, methods, and materials and strategies for organizing the learning environment for elementary learners will be examined. Prerequisites: ELED 308, ELED 309, ELED 310, ELED 311 and READ 366. Corequisites: READ 436, ELED 411, ELED 432 and ELED 433.

English

Department of English

ENG 225. Survey of English Literature: From Beowulf to the 18th Century. 3 credits. Offered fall and spring.
A general survey presented chronologically.

ENG 226. Survey of English Literature: 18th Century to Modern. 3 credits. Offered fall and spring.
A general survey presented chronologically.

ENG 235. Survey of English Literature: From Beowulf to the 18th Century. 3 credits. Offered fall and spring.
A general survey presented chronologically.

ENG 236. Survey of English Literature: 18th Century to Modern. 3 credits. Offered fall and spring.
A general survey presented chronologically.

ENG 238. Studies in World Literature. 3 credits. Offered fall and spring.
Introduction to masterpieces of world literature with emphasis on non-Western literature. (May be focused regionally or topically.)

ENG 247. Survey of American Literature: From the Beginning to the Civil War. 3 credits. Offered fall and spring.
A general survey presented chronologically.

ENG 248. Survey of American Literature: From the Civil War to the Modern Period. 3 credits. Offered fall and spring.
A general survey presented chronologically.

ENG 260. Survey of African-American Literature. 3 credits. Offered fall and spring.
Survey of literature by African-American authors from the 18th century to the present.

ENG/WRIT 290. Intermediate Composition. 3 credits. Offered fall and spring.
This course stresses the argumentative and persuasive essay as well as grammar and usage.

ENG 293. Exploring Careers in English. 2 credits. Offered fall and spring.
An introduction to academic and career opportunities in English. Students will research and shape academic and career interests, with particular attention to articulating the relationship between the reading, writing and analytical skills they develop as majors and their long-term career plans.

ENG 294. Internship in English. 1-3 credits. Offered fall and spring.
Provides English majors with work experience in career fields they are interested in pursuing. A journal, internship report, research paper, bibliography and evaluation from the intern provider are required. Prerequisites: Major or minor status and approval of the internship director.

ENG 299: Writing About Literature. 3 credits. Offered fall and spring.
This course will provide students with the skills and knowledge necessary for interpreting, researching and writing about literature. Students will learn basic literary terms, acquire an understanding of canon formation and transformation, and gain a knowledge of literary theories. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Declared English major.

ENG 302. Special Topics in Literature and Language. 3 credits. Offered fall and spring.
Study of a particular literary or linguistics topic. May be repeated for credit when course content changes but not more than once, except with the approval of the department head.

ENG 304. Modern Literature and Religion. 3 credits.
Using a variety of readings, this course explores 20th-century literary perspectives on the religious and literary culture of the western traditions. Genre, readings and emphasis may vary with the instructor.
ENG 305. Mythology. 3 credits.
Study of the nature and meaning of Greek myths as interpreted and reinterpreted in significant works of ancient and modern literature.

ENG 306. The Bible as Literature. 3 credits.
Study of Hebrew and Christian scripture as literary and cultural texts which have influenced subsequent literature and culture.

ENG 311. Medieval Literature and Culture. 3 credits.
An introduction to the literature and culture of the Middle Ages through selected Old English, Norse/Icelandic, Middle English, Old Irish, French, German, Latin and Arabic texts in translation.

ENG 312. Special Topics in Medieval Literature. 3 credits.
Studies in medieval literature. May be organized by theme, genre, geography or date and may focus on cultural context and critical or theoretical issues. May be repeated for credit when course content changes.

ENG 313. Poetry and Prose of the Early British Renaissance. 3 credits.
Chief poets and prose writers of the early British Renaissance, including Skelton, More, Sidney, Spenser, Marlowe and Shakespeare.

ENG 314. Seventeenth-Century British Literature. 3 credits.
Chief prose writers of the 17th century, including such writers as Bacon, Burton, Browne, Walton, Hobbes, Dryden and Pepys.

ENG 315. Seventeenth-Century British Poetry. 3 credits.
Chief poets of the 17th century from Donne to the Restoration.

ENG 316. Renaissance and 17th-Century British Drama. 3 credits.
Major works of British dramatists, excluding Shakespeare, from 1500-1660.

ENG 321. Restoration and 18th-Century British Prose and Poetry. 3 credits.
A study of the poetry and prose (other than the novel) from the Age of Satire, including works by Dryden, Swift, Pope and Johnson.

ENG 322. Restoration and 18th-Century British Drama. 3 credits.
Dramatists from Dryden and Wycherley to Goldsmith and Sheridan.

ENG 323. Eighteenth-Century British Novel. 3 credits.
A study of the rise and development of the novel in England during the 18th century.

ENG 325. Romantic Poetry. 3 credits.
A study emphasizing selected works of major Romantic poets. Attention given to critical theories, intellectual and cultural movements and poetic forms.

ENG 327. The Gothic: Change and Continuity. 3 credits.
A study of the origins, influence and transformations of Gothic fiction from the 18th century to the present, with emphasis on the literary uses of the supernatural.

ENG 329. Victorian Literature. 3 credits.
Study of British literature of the Victorian period with primary emphasis on poetry and nonfiction prose.

ENG 330. The 19th-Century English Novel. 3 credits.
The development of the English novel in the 19th century and the study of representative works.

ENG 331. Modern Poetry. 3 credits.
British and American poetry from 1900 to 1945.

ENG 332. Contemporary Poetry. 3 credits.
British and American poetry from 1945 to the present.

ENG 333. Modern Drama. 3 credits.
Drama from 1900 to 1960.

ENG 334. Contemporary Drama. 3 credits.
Drama from 1960 to the present.

ENG 340. Modern British Novel. 3 credits.
The British novel from 1900 to 1945.

ENG 341. Contemporary British Novel. 3 credits.
The British novel from 1945 to the present.

ENG 342. Early American Literature. 3 credits.
Significant genres, writers and literary movements of the 17th and 18th centuries.

ENG 343. Writers of the American Renaissance. 3 credits.
Selected works of major figures such as Emerson, Thoreau, Hawthorne, Poe, Melville and Whitman.

ENG 344. American Realism and Naturalism. 3 credits.
Selected works of major figures such as Dickinson, Twain, Howells, James, Crane, Norris and Dreiser.

ENG/THEA 347. Playwriting. 3 credits.
Study of the process of writing plays. Consideration of plot, character, thematic material, conflict and dramatic structure. Emphasis on individual writing assignments.

ENG 352. The American Novel to 1914. 3 credits.
A study of the development of the American novel from its beginnings to the modern period.

ENG 355. Southern Literature. 3 credits.
Southern authors, especially those of the 20th century.

ENG 356. Modern American Novel. 3 credits.
The American novel from 1914 to 1945.

ENG 357. Contemporary American Fiction. 3 credits.
A study of contemporary American novels and short stories written since 1945 with emphasis on current fiction. May be repeated for credit when course content changes.

ENG 358. Oral Literature. 3 credits.
This course is a study of oral literature which may be organized by theme, geography or genre. The course examines the social, political and artistic reasons for the creation and popularity of this literature. May be repeated for credit when course content changes.

ENG 361. African American Fiction Writers. 3 credits.
Selected works of fiction by major African-American writers of the 20th century.

ENG 362. African American Poets. 3 credits.
Selected works of poetry by major African-American writers of the 20th century. May be repeated for credit when course content changes.

ENG 367. Women’s Poetry. 3 credits.
A study of poetry by women.

ENG 368. Women’s Fiction. 3 credits.
A study of novels and short stories by women.

ENG 370. Exploring Gay and Lesbian Literature. 3 credits.
An exploration of texts and issues in literature written by and about gay and lesbian writers, including critical and theoretical issues as well as questions of canon. Texts studied may include fiction, poetry, drama, essays and memoirs written primarily, but not exclusively, in the 20th century.

ENG 374. Introduction to Anglo-Irish Literature. 3 credits.
Selected writings in English by outstanding Irish poets, playwrights and novelists.

ENG 375. Studies in Anglo-Irish Literature. 3 credits.
Study of the works of one or more Anglo-Irish writers.

ENG 381. An Introduction to Film to 1960. 3 credits. (Offered fall.
An analysis of film from its beginnings to the modernism of the 1950s and early 1960s.

ENG 382. An Introduction to Film Since 1960. 3 credits.
An analysis of world cinema from early modernism through the present.

ENG 383. Major Film Genres. 3 credits. (Offered spring odd years.
The literary and critical study of film genres.
ENG 384. Major Film Directors. 3 credits. Offered spring even years. Literary or critical study of several major directors.

ENG 392. Introduction to Creative Writing – Poetry. 3 credits. Offered fall and spring. A basic workshop in reading and writing poetry.

ENG 393. Introduction to Creative Writing – Fiction. 3 credits. Offered fall and spring. A basic workshop in reading and writing fiction. May be repeated for credit when course content changes.

ENG/WRIT 396. Advanced Composition. 3 credits. Offered fall and spring. Extensive exercises in expository writing, with emphasis on rhetorical types of composition, designed to develop sophistication of style in the student's writing.

ENG 410. Major British or American Authors. 3 credits. Offered fall and spring. Study of the works of one or more major British or American authors. May be repeated for credit when course content changes; credit may not be earned in both ENG 411 and ENG 510 unless course content changes.

ENG 412. Special Topic Seminar. 3 credits. Offered fall and spring. Study of a literary school, movement, genre or some other significant literary or linguistic topic. May be repeated for credit when course content changes; credit may not be earned in both ENG 412 and ENG 512 unless course content changes.

ENG 416. Old English Language and Literature. 3 credits. An introduction to the Old English language through selected readings in poetry and prose. Credit may not be earned in both ENG 416 and ENG 503.

ENG 418. English Linguistics. 3 credits. Introduction to English linguistics including sociolinguistics and psycholinguistics.

ENG 419. History of the English Language. 3 credits. Introduction to the historical study of English including its Indo-European origins. May be repeated for credit when course content changes.

ENG 421. Traditional English Grammar. 3 credits. Introduction to traditional grammar, probing its logic, system and history, with an examination of modern applications of conventional rules.

ENG 422. Modern English Grammar. 3 credits. Introduction to modern English grammar with attention to the structure of the English language from a modern linguistic perspective.

ENG 425. Survey of Literary Criticism to 1950. 3 credits. Survey of the nature, function and development of literary criticism from Aristotle to Eliot. Credit may not be earned in both ENG 425 and ENG 508.

ENG 426. Contemporary Practices in Literary Criticism. 3 credits. Study of the major debates in current critical discourse. Credit may not be earned for both ENG 426 and ENG 509.

ENG 430. Studies in Comparative Literature. 3 credits. Comparative study of selected world literature.


ENG 432. Studies in African Literature. 3 credits. A study of selected works by African writers focused by theme, geography or genre. May be repeated for credit when course content changes.

ENG 433. Studies in Arabic Literature. 3 credits. A study of Arabic writers. May be repeated for credit when course content varies.

ENG/FR 435. Studies in French Literature. 3 credits. A study of selected works of French literature. Instruction is in English. May be repeated for credit when course content changes.

ENG/GER 436. Studies in German Literature. 3 credits. A study of selected works of German literature. Instruction is in English. May be repeated for credit when course content changes.

ENG/ITAL 437. Studies in Italian Literature. 3 credits. A study of selected works of Italian literature. Instruction is in English. May be repeated for credit when course content changes.

ENG/RUS 438. Studies in Russian Literature. 3 credits. A study of selected works of Russian literature. Instruction is in English. May be repeated for credit when course content changes.

ENG 440. Texts for Teachers I. 3 credits. An examination of selected poems and plays of particular relevance to secondary education minors. (This course satisfies the genre requirement for such minors.)

ENG 441. Texts for Teachers II. 3 credits. An examination of selected fiction and non-fiction of particular relevance to secondary education minors. (This course satisfies the period requirement for such minors.)

ENG/THEA 447. Advanced Playwriting. 3 credits. An advanced workshop with emphasis on developing full-length dramatic material. Prerequisite: ENG/THEA 347.

ENG 450. The Open Studio: An Interdisciplinary Approach to Creative Arts. 3 credits. Introduction to the interdisciplinary studio through discussion of the history of interdisciplinary art and exposure to contemporary examples from dance, theatre, music, creative writing, visual art, film and video. Emphasis on production of original work that evidences the use of another media or collaborative work by artists from different disciplines. Prerequisites: Permission of the instructor(s) and advanced skill level in one or more of the creative arts.

ENG 451. Chaucer. 3 credits. The Canterbury Tales and other major works of Chaucer.

ENG 456. Shakespeare’s Comedies and Tragic Histories. 3 credits. A study of selected comedies and tragic histories; nondramatic work may be considered.

ENG 457. Shakespeare’s Tragedies and Comic Histories. 3 credits. A study of selected tragedies and comic histories; nondramatic work may be considered.

ENG 458. Shakespeare on the Page and Stage in London. 3 credits. Students will study the plays of Shakespeare currently in production in London and England with special emphasis on the productions of the Royal Shakespeare Company and the National Theatre. Course can be substituted for either ENG 456 or ENG 457 but may not be taken for credit in addition to both.

ENG 461. Milton. 3 credits. Major prose and poetical works of John Milton with special emphasis on Paradise Lost.

ENG 466. Studies in Women’s Literature. 3 credits. Advanced study of women’s literary achievements in several cultural and historical contexts. May be focused by theme. Prerequisite: ENG 367 or ENG 368.

ENG 467. Feminist Literary Theory. 3 credits. An intensive study of a variety of feminist critical approaches and their applications to literature. Prerequisite: ENG 367 or ENG 368.

ENG 483. Narrative Theory. 3 credits. Poetic forms for writers, with emphasis on theory and current practice. Prerequisite: ENG 393 or permission of the instructor.
ENG 484. Poetic Craft and Creativity. 3 credits.
The study, development and practice of poetic craft. **Prerequisite: ENG 392 or permission of the instructor.**

ENG 490. Special Studies in English. 3 credits.
Independent study for students with high academic standing. Students may select work in (1) a literary type, period or author; (2) imaginative writing; or (3) linguistics. Approval of department head required; may be repeated for credit when course content changes.

ENG 493. Creative Nonfiction. 3 credits.
The writing of nonfiction narratives as a creative art. **Prerequisite: ENG 392, ENG 396 or instructor’s permission.**

ENG 494. Advanced Poetry Writing. 3 credits.
An advanced workshop with emphasis on developing sound poetic form, voice and vision. **Prerequisite: ENG 392 or permission of the instructor.**

ENG 495. Advanced Fiction Writing. 3 credits.
An advanced workshop with emphasis on developing sound narrative prose form, style and vision. May be repeated for credit when course content changes. **Prerequisite: ENG 393 or permission of instructor.**

ENG 499. Honors. 6 credits.
Year course.

Environmental Management

**College of Integrated Science and Technology**

ENVM 480. Selected Topics in Environmental Management. 1-4 credits. **Offered by arrangement.**
Topics in environmental management which are of interest to the upper-division student but not otherwise covered in the regular course offerings. Offered only with the approval of the director. May be repeated for credit when course content changes. Students should consult the instructor prior to enrolling. **Prerequisite: Junior or senior standing in environmental management program. Topic selected may dictate additional prerequisites.**

ENVM 490. Environmental Management Seminar. 2 credits.
A literature-based seminar in environmental management, this course emphasizes student investigation and research, presentation and discussion. **Prerequisite: Senior standing in environmental management program.**

ENVM 491, 492. Senior Thesis/Project I & II. 3 credits each. **Offered by arrangement.**
In this two-course sequence, the student performs an independent research and/or engineering project to identify and analyze an environmental management problem and develop a practical solution. May be taken to satisfy the requirements set forth by the Honors program. **Prerequisite: Senior standing in environmental management program.**

Family Studies

**Department of Social Work**

FAM 133. The Contemporary Family. 3 credits. **Offered fall and spring.**
Concepts of variations in forms and lifestyles of families. Consideration is given to the family life cycle and the interdependency between the family and society.

FAM 300. Child Development. 3 credits. **Offered on a rotating basis.**
A study of the factors influencing the physical, cognitive, social and emotional growth of the young child. Emphasis is given to the importance of family relations and development of observational skills. **Prerequisite: GPSYC 101, GPSYC 180 or equivalent.**

FAM 330. Family Relations. 3 credits. **Offered on a rotating basis.**
A study of the relations in modern family living with emphasis on dating, courtship, marriage, marital adjustments and intergeneration relations.

FAM 335. Parent-Child Relationships Across the Lifespan. 3 credits. **Offered on a rotating basis.**
Focuses on intergenerational caregiving and interactions across the lifespan and generations. Uses a developmental framework to explore family life as the territory in which people fulfill relational responsibilities to children and parents while simultaneously attending to independent life stage challenges. **Prerequisite: FAM 133 or SOCI 276.**

FAM/GERN/SOWK 375. Grant Writing for Agencies. 3 credits. **Offered on a rotating basis.**
A collaborative course, which emphasizes active learning, teaches basic skills on proposal writing. Students and agency representatives learn the importance of grant writing for agencies/organizations and research projects often needed to complete graduate education. There is a potential for a grant submission by the end of the semester.

FAM/SOWK 385. Acting Out Teen Theatre. 3 credits. **Offered fall and spring.**
Students are trained to facilitate a semester-long, weekly theatre program with 12-18 year old middle and high school students. Students analyze group dynamics, apply theory and provide program structure. The semester ends with the teen production of an original script.

FAM/SOWK 386. Acting OutREACH. 3 credits. **Offered fall and spring.**
Students learn about issues currently facing teens, parents and schools. Students are trained to apply theory and functions as staff for the Acting OutREACH Program. Students take issue-centered programs to alternative education and after-school programs at middle and high schools in the community.

FAM 400. Issues and Applications. 3 credits. **Offered fall and spring.**
This seminar is designed to integrate and apply knowledge from the student’s major and the family studies minor. A substantial, in-depth individualized project will strengthen the student’s capabilities in research, information access and self-directed learning. **Prerequisites: FAM 133 or SOCI 276, three additional courses in the family studies minor, and junior or senior standing.**

FAM 487. Special Topics in Family Studies. 3 credits. **Offered on a rotating basis.**
Examination of selected topics that are of current importance to family studies. Course may be repeated for credit. **Prerequisite: FAM 133 or SOCI 276.**

FAM 490. Special Studies in Family Studies. 1-3 credits. **Offered fall and spring.**
The course is designed to give capable students in family studies an opportunity to complete independent study under faculty supervision. Course may be repeated for credit. **Prerequisites: FAM 133 or SOCI 276 and two additional courses in the family studies minor or permission of the instructor.**

Finance

**College of Business**

FIN 210. Principles of Real Estate. 3 credits. **Offered fall and spring.**
Emphasizes industry principles and economic factors influencing the real estate business. Subjects include contracts, deeds, valuation, financing and subdivision development.

FIN 225. Money and Banking. 3 credits. **Offered once every three years.**
For course description, see ECON 225.

FIN/MATH 328. Time Series Analysis. 3 credits.
Regression and exponential smoothing methods for forecasting nonseasonal and seasonal time series, stochastic processes, Box-Jenkins’ autoregressive and moving average models. **Prerequisites: MATH 236 and MATH 318.**

FIN 345. Managerial Finance. 3 credits. **Offered fall and spring.**
Study of theoretical concepts and analytical techniques to aid management decisions on financial problems. Topics include: working capital and fixed asset management for profit expansion. **Prerequisites: COB 241, junior standing (56 hours) and a cumulative 2.0 grade point average in all courses taken at JMU.**
FIN 350. Introduction to Quantitative Finance. 3 credits.
A broad introduction to the markets and instruments of engineered finance. The focus of the course is to expose students to the properties and uses of the array of non-traditional financial instruments that are increasingly trading in both the exchange and over-the-counter markets. Prerequisite: MATH 232, MATH 236 or permission of the instructor.

FIN 360. Money and Capital Markets. 3 credits. Offered fall and spring. An examination of the domestic and international markets for financial products. Emphasis will be placed on the theoretical underpinnings of cash flow valuation and basic applications of financial price determination. Corequisite: COB 300.

FIN 365. Intermediate Finance. 3 credits. Offered fall and spring.
In-depth study of the theories of capital structure, long-term financing decisions, working capital management and current topics such as mergers and bankruptcy. Microcomputer applications. Corequisite: FIN 360.

FIN 370. Real Estate Finance. 3 credits. Offered once a year.
A comprehensive examination of the decision-making processes involved in purchasing and financing real assets. The focus is on cost of funds and optimal financial structure of complex real estate projects. Prerequisite: COB 300.

FIN 371. Principles of Investments. 3 credits. Offered fall and spring.
The investor's view of the operation of the capital markets. Theories and practice of investments, including analysis of financial instruments and real assets and their effective combination into portfolios. Prerequisite: COB 300.

FIN/ECON 372. International Finance and Payments. 3 credits. Offered fall and spring.
Examines international financial markets, instruments and institutions; determination of spot and forward exchange rates, interest arbitrage, hedging and speculation; and alternative policies for achieving equilibrium in international payments. Prerequisites: ECON 201 and ECON 202.

FIN 375. Securities Analysis and Trading. 3 credits. Offered fall.
The course is an accelerated introduction to the investment environment with a focus on fundamental analysis of stocks, overlay strategies to enhance portfolio performance, and familiarization with the trading and pricing of the wide variety of instruments in the modern financial marketplace. The course is designed to rapidly provide the student with the tools of an investment analyst. Prerequisite: FIN 330.

FIN 380. Elementar and Derivative Securities Analysis. 3 credits. Offered fall and spring.
This course undertakes an in-depth examination of the broad array of financial instruments traded in contemporary financial markets, which are available for financing, investing and managing financial price risk. Prerequisite: FIN 360.

FIN/MATH 395. Mathematical Finance. 3 credits. Offered once a year.
This course presents an overview of the role of mathematical concepts in financial applications. Topics include continuous time finance, optimization, numerical analysis and applications in asset pricing. Prerequisites: MATH 237 and FIN 380.

FIN/MATH 405. Securities Pricing. 3 credits. Offered once a year.
A quantitative treatment of the theory and method of financial securities pricing to include an examination of closed form pricing models such as the Black-Scholes and its various derivatives as well as numerical solution techniques such as binomial methods. Prerequisite: FIN/MATH 395.

FIN 416. Seminar in Real Estate Investment and Development. 3 credits.
An investigation of the investment process in real assets with emphasis on investment profitability. The real estate investment cycle is examined in detail to determine the sources of cash flow to the equity investor and how those cash flows may be maximized. Prerequisite: FIN 370.

FIN 450. Financial Risk Management. 3 credits. Offered once a year.
Forward contracts, futures, swaps and options are treated as the basic building blocks for creating financial risk management programs for companies subject to financial risks such as changes in exchange rates, commodity price fluctuations and changes in interest rates. Prerequisites: FIN 365 and FIN 380.

FIN 455. International Financial Management. 3 credits. Offered fall.
This course focuses on the financial decisions facing the multinational firm. Particular emphasis is placed upon global financial markets and instruments, exchange-rate risk management and asset-liability management in an international environment. Prerequisite: FIN 365 or FIN/ECON 372.

FIN 460. Commercial Banking. 3 credits.
A study of the objectives, functions, policies, organizational practices and government regulation of commercial banks. An intensive study is undertaken of the asset and liability structure of commercial banks. Special emphasis is placed on how banks are adapting to the dramatic changes in their operating and regulatory environments. Prerequisite: FIN 360.

FIN/MATH 465. Seminar in Actuarial Science I. 3 credits.
The course covers the theory and application of contingency mathematics in the areas of life and health insurance and annuities from both a probabilistic and deterministic approach. Together with FIN/MATH 466, the two-course sequence helps to prepare the student for the professional actuarial examinations. Prerequisite: FIN/MATH 395 or consent of instructor. Prerequisite or corequisite: MATH 426.

FIN/MATH 466. Seminar in Actuarial Science II. 3 credits.
A continuation of FIN/MATH 465 with additional coverage of contingency mathematics in the areas of life and health insurance, annuities, pensions and risk theory from both a probabilistic and deterministic approach. The two-course sequence helps to prepare the student for the professional actuarial examinations. Prerequisite: FIN/MATH 465. Prerequisite or corequisite: MATH 427.

FIN 471. Advanced Topics in Investments. 3 credits.
Application of investment concepts within a case format. The course focuses on investment management, bringing together economics, capital markets and valuation to form a basis for decision making in financial asset selection, risk/reward analysis, portfolio selection and formation. Prerequisite: Permission of the instructor.

FIN 480. Seminar in Financial Engineering. 3 credits. Offered once a year.
Financing engineering is the process of adapting existing financial instruments and developing new ones to meet the needs of participants in domestic and international financial markets. This process is taught within a case and project format in order to simulate actual market participation as closely as possible. Prerequisites: FIN 460 and FIN/MATH 465.

FIN 488. Advanced Financial Policy. 3 credits. Offered fall and spring.
The financing of a new business enterprise or expansion and the financial condition of existing firms is examined within a case format. The objective of this examination is to elicit a policy decision which effectively addresses the issues identified in the case. Prerequisites: FIN 365 and senior standing.

FIN 490. Special Studies in Finance. 1-3 credits. Offered fall and spring.
Designed to give capable students in finance an opportunity to complete independent study under faculty supervision. Admission by recommendation of the instructor and permission of the director. Forms may be obtained in the department office before registration.

FIN 494. Business Practicum. 3 credits.
Elective for finance majors offered only during summer between junior and senior year. Students must apply to internship coordinator by the deadline and will obtain credit only if pre-approved by the coordinator prior to the start of the internship. Application deadline will be enforced. See http://www.jmu.edu/finance for application and information. Prerequisites: Minimum GPA of 2.5, application received by the application deadline and approved by the internship coordinator prior to the beginning of the internship.

FIN 495. Honors. 6 credits. Year course. Offered fall and spring.
See catalog description entitled “Graduation with Distinction” and “Graduation with Honors.”
Foreign Language
Department of Foreign Languages and Literatures
FL 267. The Literature of Opera in Translation. 3 credits. Offered fall and spring.
A survey of the literature of opera from the 17th century to the present. All lectures and readings are in English.

FL 309. Civilization: Travel-Study. 1-3 credits. Offering varies.
A directed program of travel-study designed to augment a student’s knowledge of a particular civilization. Arrangements must be made with the faculty member designated by department head. Permission of the department head is required prior to enrollment in the program.

FL 446. Special Topics in Linguistics, Literature or Civilization. 1-3 credits. Offered fall and spring.
Study of a particular topic in linguistics, literature or civilization. May be taught in English or in the language but cannot be counted for major, minor or licence unless taught in the language. Course may be repeated. Prerequisite: Permission of the instructor.

FL 490. Special Studies in Foreign Languages. 1-4 credits each semester. Offered fall and spring.
Allows superior students an opportunity to complete independent studies under faculty supervision. Work may be done in all languages offered in the department but may not replace course offerings. Prerequisite: Permission of the department head.

FL 499.1 Honors. 6 credits. Offered fall and spring.
**These courses are taught in the various languages offered by the department. The title of the course will designate the specific language studied.

French
Department of Foreign Languages and Literatures
FR 101-102. Elementary French (4, 1). 4 credits each semester. Offered fall and spring.
The fundamentals of French through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour’s work a week in the language laboratory.

Reviews elementary French grammar, reading, writing, speaking and listening skills in French. One hour’s work a week in the language laboratory. For students who have had no more than two or three years of French in high school or qualify through the placement exam. Prerequisite: Permission of the department head.

FR 111-212. Intermediate French. 6 credits each semester. Offered May and summer.
The fundamentals of French through listening, speaking, reading and writing. The first semester is the equivalent to FR 101-102 and the second is the equivalent to FR 231-232.

FR 231-232. Intermediate French. 3 credits each semester. Offered fall and spring.
A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college French or equivalent.

FR 266. French Literature in Translation. 3 credits. Offered fall and spring.
French literature, 1800 to the present. All lectures and readings are in English. Does not count toward a major, minor or license in French.

FR 300. French Grammar and Communication. 3 credits. Offered fall and spring.
Intensive training in grammatical structures and their application to oral and written communication. Instruction is in French. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: FR 232 or equivalent.

FR 307. History of French Civilization. 3 credits. Offered fall and spring.
A study of the social, economic, political and artistic development of France from the Middle Ages to 1900. Instruction is in French. Prerequisite: FR 300.

FR 308. Contemporary French Civilization. 3 credits. Offered fall and spring.
A study of French life and culture with emphasis on France in the 20th century. Instruction is in French. Prerequisite: FR 300.

FR 315. French Phonetics. 3 credits. Offered fall and spring.
Intensive drill in French sounds and intonation patterns. Instruction is in French. Prerequisite: FR 232 or equivalent.

FR 320. French Oral and Written Communication. 3 credits. Offered fall and spring.
Intensive training in the use of modern everyday French with emphasis on conversation and composition. Readings in French will provide a context for discussion and writing. Prerequisite: FR 300 or equivalent.

FR 330. Business French. 3 credits. Offered fall and spring.
A study of commercial and technical vocabulary and trade customs in conjunction with practice in the art of commercial communication including interviews, letter writing and simultaneous interpretation. Instruction is in French. Prerequisite: FR 230.

FR 335. Introduction to French Literature. 3 credits. Offered fall and spring.
A study of the main literary schools from Classicism to the Nouveau Roman. Textual analysis of sample writings representative of the most important literary movements. Instruction is in French. Required for majors. Prerequisite: FR 320.

FR 339. A Survey of French Literature. 3 credits. Offered fall and spring.
339A. A thorough analysis of selected passages from important authors of the Middle Ages and the Renaissance.
339B. A thorough analysis of selected passages from important authors of the 17th century.
339C. A thorough analysis of selected passages from important authors of the Age of Enlightenment. Instruction is in French. Prerequisite: FR 335.

FR 400. Advanced Conversation. 3 credits. Offered fall and spring.
Discussions deal with topics of current interest. Prerequisite: FR 320.

FR 405. Nineteenth-Century French Literature. 3 credits. Offered fall and spring.
405A: French literature of the first half of the 19th century with special emphasis on the works of Hugo, Lamartine, Vigny and Musset. Prerequisite: FR 335.
405B: French literature of the second half of the 19th century with special emphasis on the works of Balzac, Stendhal, Flaubert and Zola. Instruction is in French. Prerequisite: FR 335.

FR 420. Advanced Genre Studies. 3 credits. Offered fall and spring.
420A: A study of French theatre from the Middle Ages to the 20th century.
420B: A study of French poetry from the Middle Ages to the 20th century.
420C: A study of French narrative fiction from the Middle Ages to the 20th century. Instruction is in French. Prerequisite: FR 335.

FR 425. Twentieth-Century French Literature. 3 credits. Offered fall and spring.
425A: A study of the works of major French writers of the first half of the 20th century. Prerequisite: FR 335.
425B: A study of contemporary French novels written since 1950 with the emphasis on current fiction. Instruction is in French. Prerequisite: FR 335.

FR/ENG 435. Studies in French Literature. 3 credits. Offered fall and spring.
A study of selected works of French literature. Instruction is in English. May be repeated for credit when course content changes.
FR 440. Stylistics and Translation. 3 credits. Offered fall and spring. An intensive course in writing and translation from and into English and French. Contemporary topics taken from various fields. Comparative terminology. Prerequisite: FR 320.


FR 466. Contemporary French Cinema. 3 credits. Every other spring, starting spring 2007. A study of French cinema from the 1990s until the present and its place in contemporary French culture. The course will focus on films dealing with specific moments or events in French history, as well as the evolution of the French film industry. Films to be analyzed in terms of their socio-political context and judged by their cultural perspective. Prerequisite: FR 320.

General Business

College of Business

GBUS 100. Business Decision Making in Modern Society. 3 credits. This course introduces the concepts of basic technology literacy, information retrieval via electronic and hard copy; along with critical thinking skills. Basic business principles will be introduced to reinforce these concepts and their relationships. The course provides opportunity for applying the skills of oral and written communication to a variety of learning activities. Open to students who have not completed COB 300.

General Education

The Human Community

GAFST 200. Introduction to Africana Studies. 3 credits. An introductory survey of basic theoretical concepts to analyze the Black experience, with special focus on the general historical process common to Africa and the African Diaspora.

GAMST 200. Introduction to American Studies. 3 credits. This interdisciplinary course examines representations of America and American identity in philosophy, literature and the arts. We investigate conflicts in values and beliefs as shaped by class, gender, race, landscape and “progress.” Students will articulate an informed understanding of their own position in the development of America’s national and international identity.

GANTH 195. Cultural Anthropology. 3 credits. An introduction to the nature of culture and its relationship to language, economics, politics, kinship and other institutions in diverse cultures. The course also provides an overview of the theories, methods and ethical responsibilities involved in the study of cultural systems and ethnohistorical writing.

GANTH 196. Biological Anthropology. 3 credits (B,R). An introduction to the origins, evolution and genetic variability of humans and their relationship to nonhuman primates. Examination of the fossil record, the relationship between biology and culture and human genetics are included. Theories and methods used in the study of biological anthropology are also introduced. Formerly GSCI 116. Students may not receive credit for both GANTH 196 and GSCI 116.

GART 200. Art in General Culture. 3 credits. An exploratory course which aims to develop a non-technical, general, cultural understanding of the space arts, such as architecture, painting, sculpture and industrial design. Emphasis is on the contemporary.

GARTH 205. Survey of World Art I: Prehistoric to Renaissance. 3 credits. An introduction to the art and architecture of the world from cave painting through European pre-Renaissance art. Includes ancient through medieval art in Europe and the Near East as well as Asian and African arts.

GARTH 206. Survey of World Art II: Renaissance to Modern. 3 credits. An introduction to the art and architecture of the world from the Renaissance through modern ages. Includes European Renaissance, Baroque, Enlightenment, 19th and 20th centuries as well as Asian and African arts.

GBIOL 103. Contemporary Biology (3, 0). 3 credits. An in-depth exploration of selected biological concepts, connected to current, relevant topics and emphasizing an understanding of science as a way of obtaining knowledge. Not available for major or minor credit in biology. Formerly GSCI 103. Students may not receive credit for both GSCI 103 and GBIOL 103.

GBUS 160. Business Decision Making in a Modern Society. 3 credits. This course introduces the concepts of basic technology literacy, information retrieval via electronic and hard copy; along with critical thinking skills. Basic business principles will be introduced to reinforce these concepts and their relationships. The course provides opportunity for applying the skills of oral and written communication to a variety of learning activities. Open to students who have not completed COB 300.

GCOM 121. Fundamental Human Communication: Presentations. 3 credits. Study of human communication as a process. Overview of the principles and practices of interpersonal, small group and public communication. Emphasis on examining the role of self-concept, perception, culture, verbal and nonverbal dimensions in the communication process, using power and managing conflict, applying critical listening, practicing audience analysis within informative speech making. Public speaking required.

GCOM 122. Fundamental Human Communication: Individual Presentations. 3 credits. Study of human communication as a process. Overview of the principles and practices of communication in a public environment. Emphasis on examining the role of self-concept, perception, culture, verbal and nonverbal dimensions in the communication process, using power and managing conflict, applying critical listening, practicing audience analysis, and constructing informative and persuasive speeches. Public speaking required.

GCOM 123. Fundamental Human Communication: Group Presentations. 3 credits. Study of human communication as a process. Overview of the principles and practices of communication in small group and public communication contexts. Emphasis on examining the role of self-concept, perception, culture, verbal and nonverbal dimensions in the communication process, using power and managing conflict, applying critical listening, practicing audience analysis, and constructing informative and persuasive group presentations. Public speaking required.

GECON 200. Introduction to Macroeconomics. 3 credits. Behavior of economic systems at the national and international levels. Topics include the methodology of economics as a social science, supply and demand, definition and measurement of important macroeconomic variables and theoretical models of growth, inflation, interest rates, unemployment, business cycles, stabilization policy, exchange rates, and the balance of payments.

GEC 101. Wellness Dimension: Individual Perspectives. 3 credits. The study of individuals developing and functioning in the human community. Emphasis placed on genetics, social influences and interaction, health and wellness-related behaviors, and personal choices. Suggestions are given as to how these factors contribute to human development and influence dimensions of personal health and wellness throughout lifelong process.
GEIC 102. The Sociocultural Dimensions: Community Perspective. 3 credits.
The study of principles and practices of participation in communities. Emphasis placed on how leadership affects communication, conflict, diversity, community change and social responsibility. Primary focus on interpreting behavior, identifying and evaluating one's actions, understanding ethical and non-ethical practices, and identifying sociocultural and psychological variables within the social context.

GENG 235. Survey of English Literature: From Beowulf to the 18th Century. 3 credits.
A general survey presented chronologically.

GENG 236. Survey of English Literature: 18th Century to Modern. 3 credits.
A general survey presented chronologically.

GENG 293. Studies in World Literature. 3 credits.
Introduction to masterpieces of world literature with emphasis on non-Western literature. (May be focused regionally or topically.)

GENG 247. Survey of American Literature: From the Beginning to the Civil War. 3 credits.
A general survey presented chronologically.

GENG 248. Survey of American Literature: From the Civil War to the Modern Period. 3 credits.
A general survey presented chronologically.

GENG 290. Survey of African-American Literature. 3 credits.
Survey of literature by African-American authors from the 18th century to the present.

GGEOG 200. Geography: The Global Dimension. 3 credits.
This course promotes global understanding through the study of humans, their institutions and processes, and the resulting interactions between humans and the environment. The course will include the study of western and non-western peoples and their social, cultural, political and economic relationships.

GGEOL 102. Environment: Earth (3, 0). 3 credits.
A study of geological processes causing global change and their impact on human thought. The relationship between some geological processes and life on the Earth is also considered. Not available for major or minor credit in geology. Formerly QSD 102. Students may not receive credit for both GGEOL 102 and GSCI 102.

GHIST 101. Global Culture to 1650. 3 credits.
A survey of important historical developments from prehistoric times to the mid-17th century. Emphasis is given to the rise and decline of great global civilizations and to their lasting contributions to humanity.

GHIST 102. Global Culture Since 1650. 3 credits.
A survey of important historical developments from the mid-17th century to the present. Emphasis is given to the growth of nationalism, the development of colonialism and to global events, problems and conflicts of the present century.

GHIST 150. Critical Issues in Recent Global History. 3 credits.
This course examines issues in recent history as a means to introduce, develop and enhance critical thinking skills and to supplement writing, oral communication, library and computing skills objectives for General Education Cluster One. A seminar format allows for careful examination of issues in both oral and written formats. The course emphasizes the development and articulation of well reasoned arguments in organized and grammatically acceptable prose.

GHIST 225. U.S. History. 4 credits.
A survey of U.S. history from the Colonial period to the present, emphasizing the development of American civic life, the involvement of the U.S. in world affairs and the cultural richness of the American people. This course stresses the analysis and interpretation of primary sources.

GHTH 100. Personal Wellness. 3 credits.
Emphasizes lifestyle behaviors contributing to health promotion and disease prevention. General areas affecting health status are identified and suggestions made as to how health-related behaviors, self-care and individual decisions contribute to wellness and influence dimensions of health. A one-hour weekly individual physical wellness lab is included.

GHUM 102. God, Meaning and Morality. 3 credits.
A study of the ways in which various communities perceive and understand the basis of knowledge, reality, meaning and purpose, ethics, and aesthetics. Students will explore religious and nonreligious approaches to these issues.

GHUM 200. Great Works. 3 credits.
An intensive examination of great literary works that focus on key issues of knowledge and reality, meaning and purpose, ethics, and aesthetics. Discussion, analysis and intensive writing are required. Texts will vary by section and instructor.

GHUM 250. Foundations of Western Culture. 3 credits.
This course is a study of the roots of our Western tradition in Greek, Roman, Medieval or Renaissance culture. Students examine the interrelationships among history and literary works; the fine arts; philosophical and religious thought and intellectual contexts. Content will vary depending on section and instructor.

GHUM 251. Modern Perspectives. 3 credits.
An interdisciplinary study within the modern period of arts and humanities. Students will examine the interrelationships among history and the arts, philosophy, religion and the intellectual ideas of the time. Topics will vary by section.

GHUM 252. Cross-Cultural Perspectives. 3 credits.
This course is a cross-disciplinary study of a non-Western culture. Students examine the ways people have responded to the human condition from different historical, religious and philosophical positions, and with their own artistic, musical and theatrical expressions. Sections, which vary by instructor, include East-Asian experiences and West-African humanities.

GISAT 112. Environmental Issues in Science and Technology (2, 3). 4 credits.
This course integrates the study of biology, chemistry and statistics within the context of environmental issues that include ozone depletion, acid rain, global warming, waste management and biodiversity.

This course introduces current topics in the life sciences through lecture and laboratory exercises. Topics include advances in genetic engineering, the hierarchy of life and the rise of infectious diseases.

GISAT 141. Analytical Methods I (3, 2). 4 credits.
This course introduces the student to science and the scientific method; introductory statistics and graphical data analysis, with emphasis on using the computer for managing data and for empirical modeling; functions for modeling real-world systems; critical thinking skills for analyzing arguments involving data; and project management. Corequisite: GISAT 112 or permission of instructor.

GISAT 160. Problem Solving Approaches in Science and Technology. 3 credits.
This course examines issues in modern science and technology as a means to introduce, develop and enhance critical thinking and problem solving skills. Current scientific and technological research and applications will be introduced to reinforce problem solving, instruction in systems thinking and critical inquiry. The course provides opportunities for using both oral and written communication in a variety of learning activities.

GSKIN 100. Lifetime Fitness and Wellness (2, 2). 3 credits.
This course is designed to help students adopt and maintain the behaviors associated with an active and healthy lifestyle. Through this course students will learn the importance of maintaining wellness.
through a physically active lifestyle. Through lectures and labs, students study and develop the behavioral patterns consistent with the current knowledge base in fitness and wellness.

**GMA 150. Mediated Communication: Issues and Skills.** 3 credits.
Study of how mediated communication shapes the content, meaning and impact of spoken, written and pictorial messages. Emphasis on the skills required to integrate speech, text and imagery into mediated presentations. Consideration of issues involving the critical evaluation of mass-mediated communication, their effectiveness and influence.

**GMUS 200. Music in General Culture.** 3 credits.
Designed to increase the student’s perceptual ability in listening to music and to encourage an interest in both familiar and unfamiliar music. Primary study will be on music from the classic, Western heritage. Folk, jazz, popular and non-Western music may also be considered.

**GMUS 202. Music in America.** 3 credits.
Knowledge and skills to increase the student’s perceptual ability in music listening with a survey of American music, examining relationships between popular and classical music styles.

**GMUS 206. Introduction to Global Music.** 3 credits.
A survey of various world music traditions, including those of Asia, the Pacific, Europe, Africa and the Americas. The course will focus on aesthetics, musical forms and styles, and the relationship between music and other arts. Emphasis will be placed on historical, religious, and cultural events and their influence on the creation and development of music.

**GPHIL 101. Introduction to Philosophy.** 3 credits.
An introduction to the basic problems and concepts of philosophy – the nature of man and the self, ethics, theories of knowledge, philosophy of religion, etc., as revealed in the writings of the major philosophers.

**GPHIL 120. Critical Thinking.** 3 credits.
An introduction to the techniques for analyzing and evaluating information in everyday experience. The functions of language will be discussed. Techniques for judging the strengths of arguments and the probable truth of the arguments’ premises will be examined.

**GPOS C 200. Global Politics.** 3 credits.
An exploration of political, social and economic issues and structures existing within and between states in the contemporary global community. Students are introduced to alternative approaches to analyzing these issues in diverse cultures and political settings.

An examination of institutions, processes and intellectual concepts which structure American political activity. The interaction of the political system with the changing American society and America’s changing role in world affairs are also treated. The course provides an introduction to quantitative methodology.

**GPSYC 101. General Psychology.** 3 credits.
A study of the nervous system, sensation, perception, consciousness, learning, memory, language, intelligence, motivation, emotion, life span development, personality, psychopathology, psychotherapy, social psychology and the scientific method.

**GPSYC 122. The Science of Vision and Audition.** 3 credits.
A study of human interaction with sound and light waves. Topics include basic neuroanatomy, anatomy of the auditory and visual systems, visual perception (color vision, object perception, perceptual illusions), auditory perception (pitch, loudness, sound localization), and visual deficiencies. The course will include outside-of-class experiential activities. **Prerequisites:** Either MATH 103, MATH 205, MATH 220, MATH 231 or MATH 235. Formerly GSCI 122. Students may not receive credit for both GSCI 122 and GPSYC 122.

**GPSYC 160. Life Span Human Development.** 3 credits.
An introduction to human development. Emphasis is on life span processes within physical, emotional, cognitive, psychosexual, social, personality and moral development.

**GREL 101. Religions of the World.** 3 credits.
An investigation of the world’s major religions which will give attention to their origin, history, mythology and doctrines.

**GSCI 101. Physics, Chemistry and the Human Experience (3, 0).** 3 credits.
A survey of the fundamental concepts, principles and ideas of chemistry and physics. Particular emphasis is placed on understanding the development of the principles and their application in understanding the world around us. **Prerequisite or corequisite: One of the following: MATH 103, MATH 107, MATH 205, MATH 220, MATH 221 or MATH 235.**

**GSCI 104. Scientific Perspectives (0, 2).** 1 credit.
A study of topics selected to allow students to participate in mathematical and scientific problem solving approaches to knowledge. **Prerequisite or corequisite as indicated on e-campus.**

**GSCI 115. Earth Systems, Cycles and Human Impact.** 3 credits.
Earth System science views the Earth as a single system consisting of processes operating at time scales from seconds to the age of the Earth. Earth System science integrates aspects of geology, meteorology, oceanography and biology in which humans are an integral part of the system. Earth System science provides an important tool for understanding the relationship between humans and the Earth. From the Earth Systems perspective, humans are a part of the Earth System, dependent on it, impacting it and responding to its variability. The systems of the Earth have been in dynamic equilibrium for billions of years, cycling matter, gases and energy through a set of complex reservoirs (atmosphere, hydrosphere, biosphere, lithosphere and near space environment). During the last few thousand years, humans have assumed an even larger role in Earth processes. **Prerequisite or corequisite: MATH 103, MATH 205, MATH 220, MATH 221 or MATH 235.**

**GSCI 121. The Physical Nature of Light and Sound (3, 1).** 4 credits.
A study of the physical properties of light and sound waves. Topics include production, propagation and spectral analysis of waves. Applications to be covered include musical instruments, sound reproduction, room acoustics, optical instruments (cameras, projectors, lasers), and color in art and nature. The course will include outside-of-class experiential activities.

**GSCI 161. Science Processes.** 1 credit.
Observing, classifying, measuring, inferring, communicating, predicting and experimenting in all science disciplines. This course will introduce core science process skills for all science disciplines in a hands-on, integrated laboratory block.

**GSCI 162. The Science of the Planets.** 2 credits.
The course will focus on the Earth and its neighbors, including the formation, evolution and dynamics of the Solar System. Students will also explore the similarities and differences of different solar system bodies (stars, planets, asteroids, comets) and the possibilities for finding life elsewhere. **Prerequisite: GSCI 161.**

**GSCI 163. The Matter of Matter.** 1 credit.
This course will focus on the topic of matter: particle theory, forms, characteristics, properties, atomic theory and models, conservation of mass and energy, nuclear reactions, heat transfer within matter, chemical bonds and chemical structures.

**GSCI 164. Physical Science: Learning Through Teaching.** 2 credits.
A hands-on conversation on how technology, science and engineering come together to describe our world. The course will cover many of the traditional concepts presented in an introductory physics course. The course will treat coordinate systems and their use in describing motion, forces and energy conservation, thermodynamics (temperature, pressure, heat), light (color, ray model, wave model), waves (sound, magnetism, and electricity). The course will indirectly reinforce skills developed in other courses in the cluster including scientific tools (mathematics, graphing, diagramming, experimenting and analyzing data) and using informational resources. **Corequisite: GSCI 163.**
GSCI 165. The Way Life Works. 1 credit.
Patterns, energy, information, life’s machinery, feedback, community and evolution. These are major themes in how life works. This course will use these themes as a backdrop for looking at the way life works.

GSCI 166. The Environment in Context. 2 credits.
This course will use environmental issues and topics as a unifying concept to introduce ecology, environmental chemistry and evolution. Topics such as resource utilization and conservation, air and water quality issues, ecological succession, community processes, biological diversity and evolution may be used to illustrate the concepts and to demonstrate the relationship between science and public policy. Corequisite: GSCI 165.

An examination of current global social issues, such as industrialization, economy, work, inequality, social movements and socio-political change. Addresses questions of definition, nature, history, patterns and consequences of various issues using sociopolitical perspectives to examine and critique proposed social policies.

GSCI 240. Individual in Society. 3 credits.
This course explores the importance of social structure, agency and symbolic interaction in the social construction of realities. It will examine major contributors to the sociological social psychological tradition. The course will help students reflect on issues such as self, self-presentation and identity, relationships, body, inequality, citizenship, nonconformity and resistance.

GTHEA 210. Introduction to Theatre. 3 credits.
Study of the theatre as an art form. Emphasis on introducing students to a broad spectrum of theatrical activity and opinion. Consideration of the components that comprise a theatre event including acting, directing, design, costuming, lighting and playwriting.

GWRET 103. Critical Reading and Writing. 3 credits.
The course emphasizes the process of constructing a focused, logical, coherent, well-supported thesis or point of view. The students will employ research and formal documentation to produce writing stylistically appropriate to its audience, purpose and occasion. The course also places emphasis on editing for clarity and control of conventions. Instruction in writing and research includes critical analysis of primary and secondary sources through a series of reading and writing assignments. Students are prepared to use reading and writing in their personal, academic and civic lives. GWRET 103, or its equivalent, fulfills the General Education Cluster One writing requirement and is a prerequisite for all WRIT courses numbered 200 or above.

**Geographic Science**

**Department of Integrated Science and Technology**

GEOG 161. Geospatial Tools and Techniques. 1-6 credits, variable.
An introduction to the use of geospatial tools, such as geographic information systems (GIS), global positioning systems (GPS) and remote sensing, applied to a variety of areas, including cultural geography, environmental science, ecology, geology and public planning.

GGEEOG 200. Geography: The Global Dimension. 3 credits.
Offered fall and spring.
This course promotes global understanding through the study of humans, their institutions and processes, and the resulting interactions between humans and the environment. The course will include the study of Western and non-Western peoples and their social, cultural, political and economic relationships.

GEOG 210. Physical Geography (2, 2). 4 credits. Offered fall and spring.
The physical aspects of man’s environment. World distributions of land forms, weather and climate, natural vegetation, soils, minerals, and the interrelationships between these factors. Also considered are Earth-Sun relationships and map projections.

GEOG 215. Map Reading and Interpretation. 3 credits.
An introduction to a wide variety of maps used by the educator, layman and public official with critical analysis of various cartographic techniques used to represent and present information.

GEOG 230. Spatial Analysis. 3 credits. Offered fall and spring.
This course focuses on the theory and practice of spatial analysis. Research methods and quantitative techniques used in geographic analysis are presented. Topics include quantitative research design, the nature of spatial distributions, the use of maps as spatial models, univariate and bivariate analysis, spatial autocorrelation, index number development, point and area pattern analysis, shape and density measurement, the use of census data, and obtrusive measures in geography.

GEOG 240. Natural Resource Conservation. 3 credits. Offered fall.
Examines the basic principles of resource use including geographic, economic, social and political processes. Explores concepts underlying such issues as resource consumption and conservation, environmental perception, resource and environmental conflict, population growth and control, carrying capacity, and the evolution of the environmental movement.

GEOG 244. Introduction to Global Positioning Systems. 1 credit.
Offered spring.
The course will provide basic training in the use of Global Positioning Systems. It will include instruction in the use of GPS field units, creation and use of data dictionaries, preplanning fieldwork, and post-processing of field data. This course is designed primarily for non-majors and will focus on the basics of using GPS so that students will be able to apply this knowledge and equipment in their own projects and independent studies within their own major.

GEOG 245. Global Positioning Systems. 3 credits. Offered spring.
The course will provide basic training in the use of Global Positioning Systems. It will include instruction in the use of GPS field units, creation and use of data dictionaries, preplanning fieldwork, and post-processing of field data. The course will also include actual field projects and the use of mapping software.

GEOG 250. Agricultural Systems and Global Food Production. 3 credits. Offered fall.
This course concentrates on the geographic study of various agricultural systems and emphasizes how social, cultural and economic behavior and the physical environment influences global food production. Issues on the interconnection between world hunger, the place-to-place differences in farming practices, agricultural policies and the environment will be covered.

GEOG 265. Thematic Cartography (2, 2). 4 credits. Offered fall and spring.
Thematic cartography introduces each student to basic cartographic theory and computer mapping techniques. Emphasis is placed on using maps for spatial analysis and geographic research. Using computer mapping software, students examine basic concepts of thematic map development, elementary cartometrics, map evaluation and map publication.

GEOG 280. Introduction to Cultural Geography. 3 credits.
Offered fall and spring.
The course themes are human culture, cultural variations over the face of the Earth and how these variations are related to selected global issues. Topics covered include world demographics, world religions and languages, patterns of human migration, political systems and human conflict, agricultural systems, and impact on the physical world.

The remote sensing class involves the study of the characteristics, quality, geometry and digital properties of remotely sensed aerial imagery. Methods of data collection, analysis, enhancement and presentation are discussed. Both the physical and cultural aspects of the imagery are examined. Prerequisite: GEOG 230.
GEOG 300. Population Geography. 3 credits. Offered fall.
An introduction to population measurement, sources of population data and modern population problems. Topics include distribution, the changing age structure and migration issues affecting the U.S. At the global scale, topics include distribution, global migration patterns, the refugee crisis and prospects for feeding the rapidly increasing human population.

GEOG/GEOL 310. Environmental Issues. 1-4 repeatable credits, no limit. Courses cover environmental issues such as air pollution, forest and wildlife management, water, resource management, soils and land use, and energy and the environment (among other topics). Courses examine the interface between humans and environmental systems while addressing the impact of social, economic and political systems and activities on the environment. May be repeated as course content changes.

GEOG 311. Endangered Environments. 3 credits. Offered spring.
In this course an investigation is made of a selected number of environmental problem areas around the world. Some examples include the temperate rainforest of Valdivia, South America, the tropical rainforests of Borneo and the Aral Sea of Eastern Europe. In the course, students will explore physical aspects of each environment and explore human impact and potential solutions to the problems.

GEOG 315. Field Studies in Geography. 3 credits. Offered spring.
This course exposes students to the methods and techniques commonly used by geographers while conducting fieldwork. The course will cover identifying and defining a researchable project, designing and testing data collection methods, and different methods of collecting, recording and presenting data. Students will also become familiar with various types of field equipment.

GEOG 335. Geography of Africa. 3 credits. Offered spring.
The physical environment, natural resources and human geographic patterns of Africa.

GEOG 338. Geography of North America. 3 credits. Offered fall and spring.
A study of the physical environment of North America followed by an analysis of the spatial structures of the area’s population and economy. The basis for the regional differentiation is considered, followed by a region-by-region analysis of each of these unique interactions of physical and cultural phenomenon.

GEOG 337. Geography of Latin America. 3 credits. Offered spring.
A study of countries in Latin America which includes their physical landforms, weather and climate, biogeography, natural resource base, attitudes toward the physical environment, characteristics of the economy, the current political role in international activities, and population characteristics that include growth rate, distribution, migration and ethnicity.

GEOG 340. Biogeography. 3 credits. Offered spring.
Examines the distribution of plants and animals on Earth and the factors contributing to the existence and alteration of these patterns. The ecological and human processes shaping the natural environment are examined.

GEOG 344. Economic Geography and Development Issues. 3 credits. Offered spring.
An overview of the classification of economic activities, the factors involved in the location of various types of economic activities and the regional variation in the standard of living associated with economic development. Additional topics include regional economic growth and types of economic systems and development perspectives, the roles that politics and demographics play in the economic development of a country, and the globalization of economic activities.

GEOG 346. Geography of Europe. 3 credits.
Geographic assessment of regional and national characteristics of the European nations.

GEOG 348. Russia and the Former U.S.S.R. 3 credits.
A study of the people and culture of Russia with an emphasis on their social, economic and political processes and situation. An analysis of how the interaction of geographic, social, political and economic factors affect the lives of the Russian people.

GEOG 349. Geography of East Asia. 3 credits. Offered fall.
A survey of the physical and cultural environments of China, Taiwan, Japan, the Koreas, Indochina and the countries of Southeast Asia. Topics covered include weather and climate, physiography, natural resources, population characteristics, political systems, aspects of the economy, and the role that each country plays on the regional and world stage.

GEOG 356. Geographic Information Science. 4 credits. Offered fall and spring.
This lecture and lab course provides an introduction to the theory and practice of building a geographic information system. Computer-aided design is used to digitize, edit and plot spatial data. Attribute data and spatial data are combined in a GIS, and fundamental GIS functions are performed.

GEOG 380. Regional Geography Studies. 3 credits. Offered once a year.
Students will focus on one of 10 world regions (A-US/Canada; B-Latin American; C-Middle East/North Africa; D-Sub-Saharan Africa; E-Europe; F-Russia/Central Asia; G-East Asia; H-South Asia; I-Southeast Asia; J-America; J-Pacific). All students enrolled will meet with the instructor as a group once a week for discussion of general characteristics of world regions. Most work will be guided/independent.

The advanced remote sensing class involves a continuation of the subject matter of the basic course, which is its prerequisite. The subject matters include advanced georeferencing and orthocorrection, refined methods and applications of digital image enhancement, and image classification methodologies. These tools are applied to the inventory and assessment of various environmental conditions. Prerequisite: GEOG 285.

GEOG 400. Urban Geography. 3 credits. Offered fall and spring.
Study of the city in its geographic setting, giving perspective of modern urban problems, origin and growth of cities and influence of location on city functions. Looks at the internal structure of cities and the influence of the internal structure on its population groups.

GEOG 415. Climatology. 3 credits. Offered fall and spring.
The systematic study of the atmosphere with emphasis on such phenomena as temperature, pressure, humidity, air masses and fronts; the occurrence of these phenomena on a global basis; and a detailed survey of the worldwide distribution of climate types.

GEOG/ISAT 429. Sustainability: An Ecological Process. 3 credits. Offered spring.
This course examines present global environmental impacts and efforts made to change production and consumption patterns toward those that reduce impact on ecosystems or promote increased ecosystems health. The focus lies in understanding the basic resources of productivity including soils, agricultural systems, agroforestry, forestry and aquatic environments and applying solutions on a personal and community level. Prerequisite: ISAT 320 or permission of instructor.

GEOG 430. Geography of Crop Plants. 3 credits. Offered fall.
This course evaluates the influence of geography on crops and crop development by examining the evolution, genetic diversity and cultivation of agricultural crops. Topics include the origins of agriculture, patterns of geographic spread, and the interrelationships between domesticated plants and the societies that grow them.
GEOG 440. Wilderness Techniques. 3 credits. Offered fall and spring. Wildlife legislation, legal mandates and wilderness issues are examined. Human impacts due to overuse or conflicting uses are studied, as are the philosophical aspects of wilderness ethics. This course is taught entirely in the field. Camping, hiking and permission of the instructor are required.

GEOG 441. Management and Protection of Natural Resources. 3 credits. Offered fall. This course provides a managerial perspective for protection and management of natural resources. A systems approach for applied management strategies is provided for aquatic, terrestrial, threatened and endangered ecosystems. Topics include application of state, federal, international laws, regulations, policies and guidelines. Students develop management plans and explore jurisdictional resource protection issues.

GEOG 442. Wildlife Management. 3 credits. Offered fall. An introductory discussion of applied management strategies for wildlife species and their ecological requirements is provided relative to human influences. Management techniques that are useful for determining population or health status are demonstrated for select vertebrate species. The evolution of wildlife laws, polices and management strategies are addressed to provide relevant awareness into the appropriate concepts of wildlife management.

GEOG 445. Topics in Geography. 1-3 credits. Examination of geographic topics that are of current interest. Can be repeated as course content changes.

GEOG 446. Applied Thematic Cartography. 3 credits. Offered fall and spring. Student performs an independent, client-based map project that addresses complex data visualization concepts and issues in thematic cartography. Students also explore issues such as responsibilities of the cartographer to the client, contracting cartographic projects, cartographic communication models, cognitive issues in cartographic visualization, methods for disseminating maps to users, modeling geographic phenomena with application to client-based problems, quality control scenarios when actualizing cartographic projects, legal contract issues, and delivery issues with the completed cartographic product. Prerequisite: GEOG 265.

GEOG 466. Managing GIS and Geographic Databases. 4 credits. Offered once a year. An introduction to the creation, use and management of digital spatial data used by industry and government. Integration of large spatial data sets into the geographic information system, data management and data exchange, and the geodetic transformation of data sets are emphasized. Digital elevation models, land use data, population data, digital topographic map and street network data will be used. Prerequisite: GEOG 366.

GEOG 467. Selected Topics in Applied Geographic Information Systems. 3 credits. The course advances the knowledge of GIS in theory and practice by focusing on specific application areas. Spatial databases and complex attribute data will be created, and GIS modeling techniques will be used to solve problems relevant to the specified topical area. The course may be repeated once for additional credit when the topic changes. Prerequisite: GEOG 366.

GEOG 468. Internet Geographic Information Systems. 4 credits. Offered spring. Theoretical and practical exploration of methods, standards and policies related to the development and utilization of geographic information systems on the Internet. Students will create and utilize distributed geospatial data and analytical systems using the World Wide Web and the Internet to address geographical problems. Prerequisite: GEOG 366.

GEOG 475. Political Geography. 3 credits. Offered fall and spring. Geopolitical conflicts and issues are examined. Concepts such as territoriality, nationalism, religious and ethnic struggle, environmental degradation, and freedom and justice are discussed in the context of political unrest. Significant geopolitical theories and social and economic processes are explored.

GEOG 486. Applied Digital Image Processing. 3 credits. Offered fall and spring. This course advances the knowledge and theory of digital image processing of remote sensed imagery. Analytical functions will be applied to projects relevant to further study and issues faced by clients. Prerequisite: GEOG 286 or GEOG 385.

GEOG 490. Special Studies in Geography. 1-3 credits each semester. Offered fall and spring. Designed to give capable students in geography an opportunity to complete independent study under faculty supervision. Prerequisite: Admission by recommendation of the instructor and permission of the department head.

GEOG 491. International Studies-Capstone. 3 credits. Offered fall and spring. This course fulfills the capstone experience requirement for students majoring in geography. Students will make arrangements for the international experience. A research project or work-study project will be designed by the student and faculty member prior to departure. The research or work will be carried out in the country of travel.

GEOG 495. Internship in Geography. 3-6 credits. Offered fall and spring. Practical experience in and observation of a public agency utilizing geographic methodology. Work experience will be supervised by an official of the agency and a faculty member. Periodic seminars and written reports are required. Prerequisites: Geography major of junior or senior standing and permission of department head.

GEOG 499. Honors. 6 credits. Offered fall and spring. Year course.

Geology

Department of Geology and Environmental Science

GGEOL 102. Environment: Earth (3, 0). 3 credits. A study of geological processes causing global change and their impact on human thought. The relationship between some geological processes and life on the Earth is also considered. Not available for major or minor credit in geology. Prerequisite: GSCI 101. Formerly GSCI 102. Students may not receive credit for both GGEOL 102 and GSCI 102.

*GEO 110. Physical Geology (3, 2). 4 credits. A systematic study of earth materials and the internal and external processes that affect earth structure and landform. Topics include the genesis/properties of rocks and minerals, plate tectonics and the agents of change that drive surface processes and landform development.

GEO 130. Quantitative Geology. 2 credits. An introduction to quantitative techniques used in descriptive and predictive aspects of the earth and environmental sciences, with emphasis on algorithmic approaches. The focus is on pragmatic application of mathematical methods to geologic problems, considering requirements, uses and limitations. Automatic computation is stressed.

GGEOL 167. History & Philosophy of the Geosciences. 3 credits. Offered fall. As an introductory experience in the Bachelor of Arts in Earth Science, students will be inculcated in the philosophy of geosciences as an interdisciplinary medium for extending classical science viewpoints to complex earth systems. Students will study the geosciences as distinct among sciences, establishing relevance and value of earth science literacy in professional and personal settings.

GGEOL 200. Evolutionary Systems (3, 2). 4 credits. An investment of a theoretical principle behind evolutionary systems of all types based on mathematical modeling in chaos, complexity theory and artificial life studies with extensive computer experimentation and examples drawn from physical, chemical, biological, economic and social systems. The purpose is to explore what is common and universal to all evolutionary processes.
GEOL 211. Introduction to Oceanography. 3 credits.
An introduction to the oceanography of coastal environments including barrier islands, estuaries and tidal marshes. The physical, geological and biochemical characteristics of coastal waters will be discussed in the context of the economic and social pressures brought to bear on these areas by an increasing global population.

GEOL 220. Genetic Mineralogy (2, 2). 3 credits. Offered fall and spring.
A study of mineral genesis. Emphasis is directed toward mineralogical environments, mineral associations and the geology/mineralogy of classical localities. An appreciation of mineral value and aesthetics is incorporated throughout the course.

GEOL 230. Evolution of Earth (3, 2). 4 credits.
An introduction to the evidence, methods and assumptions used by scientists to unravel the Earth’s origin and history. Emphasis on rock analysis/interpretation, modern and ancient processes of mountain building, origin and evolution of life and the history of the North American continent. Prerequisite: GEOL 110 or permission of instructor.

GEOL 272. Planetary Geology. 3 credits.
A survey of currently developing ideas in planetology including origin of the planets, meteorites and planetary interiors. Also included are geologic processes and land forms on the moon and terrestrial planets, their modification under various planetary environments and analogies to familiar earth land forms. Prerequisite: GEOL 102 or GEOL 110.

GEOL 280. Mineralogy (3, 2). 4 credits.
A comprehensive study of minerals including: crystallography, mineral chemistry, X-ray diffraction, mineral optics with thin section recognition using petrographic microscope, and hand specimen identification of both silicate and non-silicate minerals. Prerequisite: GEOL 110.

GEOL 290. Optical Mineralogy (3, 2). 3 credits.
A study of the optical properties of minerals and mineral identification with the petrographic microscope. Prerequisite: GEOL 280.

GEOL 300. Introduction to Petrology (3, 2). 3 credits.
An introduction to the classification and origin of metamorphic and igneous rocks. Laboratory study of hand specimens and thin sections. Prerequisite: GEOL 280. Corequisite: CHEM 131.

GEOL 301. Earth Sciences for Teachers. 3 credits. Offered fall.
Earth science content is blended with a systems approach to provide pre-service teachers with an understanding of how the Earth works, as well as strategies for teaching it. Major content themes include reconstructing the geologic history of the mid-Atlantic, exploring the interaction of living things and the environment, and predicting how matter and energy circulate in the earth system.

GEOL/GEOG 310 A-D. Environmental Impact. 2-3 credits, repeatable to 6 credits.
Focuses on a selected environmental realm. The course will examine the interface between human activities and environmental systems. It will address the impacts of social, economic and political activities on the environment. GEOL/GEOS 310 A: Atmosphere (air pollution); B: Biosphere (vegetation/wildlife); C: Hydrosphere (water); D: Lithosphere (geologic hazards/land issues).

GEOL 320. Meteorology. 3 credits.
A survey of the science of weather including weather forecasting, weather maps and related atmospheric processes. Emphasis is placed on the dynamic aspects of meteorology and the interrelationships of atmospheric phenomena with land masses and the world ocean.

GEOL 340. Soils and Land Use (2, 2). 3 credits.
The origin, distribution and properties of soils are emphasized in the lecture, laboratory and field. These aspects are used to determine the value of various soil types for such uses as agriculture, forestry, recreation, urban development and structural foundations. Prerequisites: GEOL 110 and CHEM 131.

GEOL/BIO 350. Invertebrate Paleontology (3, 2). 4 credits.
The history of nonvertebrate life from its origin, through evolving biogeochemical cycles, origin of eukaryotes and multicellularity, evolutionary records of all major groups and theoretical issues such as major group origins, adaptive radiation patterns, extinctions, functional adaptations and paleoecology. Prerequisite: GEOL 230, BIO 114 or permission of the instructor.

GEOL/Chem 355. Geochemistry of Natural Waters. 3 credits.
Study of chemical theory and reactions important in natural water systems. The role of atmospheric, geologic and biological inputs in determining the geochemistry of streams, rivers and oceans. Prerequisites: CHEM 131 and CHEM 132 or equivalent.

GEOL 364. Stratigraphy and Basin Analysis (3, 3). 4 credits.
Lecture emphasizes application of sedimentologic and stratigraphic principles to identify and interpret depositional systems and examines how eustasy (sequence theory) and local tectonics influence the distribution of depositional systems under different plate tectonic regimes. Lab emphasizes critical field observation, application of theory to stratigraphic analysis and writing scientific papers. Prerequisite: GEOL 230.

GEOL 365. Structural Geology (3, 2). 3 credits. Offered fall and spring.
Major and minor structures of the Earth’s crust. Mechanical principles involved in folding, faulting, jointing and peneccontemporaneous structures. The causes and results of mountain building processes. Preparation and interpretation of geologic maps. Prerequisite: GEOL 110; GEOL 230 recommended.

GEOL 367. Genesis of Solid Earth Materials (2, 2). 4 credits. Offered fall.
This course addresses the natural relationship between minerals and the rocks they make up. Using the concept of mineralizing environments, illustrated by classic examples, students will investigate minerals through the processes of mineral genesis and associated rock types. This approach provides insight and predictive value for natural conditions in which specific minerals and rocks occur. Not acceptable for B.S. in geology. Prerequisite: GEOL 110.

GEOL 377. Earth Surface Processes (2, 2). 3 credits. Offered spring.
The interrelationships among climate, landscapes, soils and bedrock geology are examined using the mid-Atlantic region as a conceptual laboratory. Course instruction includes lecture, laboratory and field trip meetings. The processes of rock weathering and erosion and soil formation are reinvestigated. Topographic maps and aerial photography are examined for landforms and landscape evolution. Not acceptable for B.S. in geology. Prerequisite: GEOL 230.

GEOL 380. Regional Geography Studies. 3 credits.
Students will focus on one of 10 world regions (A-US/Canada; B-Latin America; C-Middle East/North Africa; D-Sub-Saharan Africa; E-Europe; F-Russia/Central Asia; G-East Asia; H-South Asia; I-Southeast Asia; J-Australia/Pacific). All students enrolled will meet with the instructor as a group once a week for discussion of general characteristics of world regions. Most work will be guided/independent.

GEOL 385. Geomorphology (2, 2). 3 credits.
The description, classification, analysis, origin and evolution of land forms. The physical and chemical processes that have formed the present landscape. Advanced interpretation of topographic maps. Prerequisite: GEOL 110 or GEOG 210.

GEOL 390. Laboratory Techniques in Geology (2, 2). 3 credits.
An elective course for science majors. A study of the basic theories and techniques of laboratory methods and instrumentation. Implementation and application of techniques to geological problems. Prerequisites: GEOL 280 and permission of the instructor.
GEOL/MATS 395. Geologic Perspectives in Materials Science & Engineering. 3 credits. A one-semester course which emphasizes the commonalities between the geological sciences and materials science. Course includes topics from mineralogy, crystallography, petrology and structural geology which are also important in metallurgy and ceramics. Prerequisites: An introductory course in any physical science or integrated science and technology (GEOL 110, CHEM 131, PHYS 140 or ISAT 141) and at least one additional advanced course in the major.

GEOL/MATS 396. X-Ray Characterization of Solid Materials. 3 credits. Covers fundamental principles and theory behind two powerful, X-ray based, technologies: X-ray Diffraction and Energy Dispersive Analysis of X-rays (EDS). Students will collect and analyze data from a single crystal Gandolfi X-ray camera, automated powder diffraction system (focusing goniometer), and EDAX system (EDS). Prerequisite: GEOL 280, MATS/CHM/PHYS 275 or ISAT 300.

GEOL 399. Field Geology. 6 credits. Field methods include use of Brunton compass, telescopic alidade and plane table, and compass traversing. A synthesis of geologic concepts and principles leading to the construction and interpretation of geologic and topographic maps. Prerequisites: GEOL 364 and GEOL 365 or permission of the instructor.

GEOL/BIO 405. Vertebrate Paleontology (3, 1). 3 credits. A study of the origin and evolution of the vertebrates. Emphasis will be on understanding how the processes of earth evolution and biological evolution have interacted through time to produce a coherent picture of vertebrate history. Prerequisite: GEOL 230, BIO 124 or permission of the instructor.

GEOL 410. Engineering Geology (2, 2). 3 credits. Study of the applications of geology to engineering practice. Topics include soil mechanics, foundations, engineering classification of soils, slope stability and mineral aggregates. Prerequisites: GEOL 340 and either MATH 205 or MATH 235 or equivalent.

GEOL 415. Geological Evolution of North America. 3 credits. A systematic survey of the tectonic evolution of the North American continent and the corresponding evolution of depositional basins and paleoenvironments. Prerequisites: GEOL 364 and GEOL 365 or permission of the instructor.

GEOL 440. Geophysics (3, 2). 3 credits. A survey of applied geophysical methods, with particular attention to shallow subsurface investigations. Topics include gravity, magnetics, electrical and electromagnetic techniques, and seismology and ground-penetrating radar. Practical experience with data acquisition, reduction and interpretation. Prerequisites: GEOL 110 and two semesters of calculus or permission of the instructor.

GEOL 444. Topics in Geophysics. 3 credits. An in-depth investigation into selected aspects of geophysics. Topics will be chosen by the instructor and students and may vary from year to year. Some common candidate issues include earthquake seismology, field survey planning and execution, geophysical interpretation theory, and the geophysical underpinnings of plate tectonic theory. Prerequisite: Permission of the instructor.

GEOL 450. Geology Seminar. 1 credit. An in-depth study of a particular problem in geology (e.g., plate tectonics, astrogeology, low-temperature geochemistry, etc.) Scientific literature will be reviewed and discussed. Prerequisite: 20 credits in geology.

GEOL 460. Hydrogeology (2, 2). 3 credits. Basic concepts of subsurface water as a part of the hydrologic cycle. Topics include storativity and permeability in porous media, principles of flow, computer applications, groundwater exploration, and mapping and environmental aspects of groundwater. Prerequisites: GEOL 110 and two semesters of calculus or permission of the instructor.

GEOL 467. Stratigraphy, Structure and Tectonics (3, 2). 4 credits. Offered spring. Examination of how stratigraphic, structural and tectonic principles control the character and distribution of rocks. Practical study of principles, regional patterns in sedimentary rocks and stresses the deform rocks are explored in laboratory and field exercises. Topics and techniques are discussed within the framework of the 1.2 billion year geologic history of the Virginia region and its connection with the tectonic processes through the rest of the world. Not acceptable for B.S. in geology. Prerequisites: GEOL 110 and GEOL 230.

GEOL 477. Contemporary Issues in the Geosciences. 3 credits. Offered spring of alternate years. As a capstone experience, this course serves as an opportunity for students to view issues of the Earth system from an Earth-based perspective. Building on previous course work in the major (physical geology, meteorology, oceanography, etc.), students will investigate such issues as global warming, population and sustainable development and environmental ethics. Particular emphasis is placed upon the Earth’s perspective from a historical viewpoint. Prerequisites: GEOL 211, GEOL 320, GEOL 367 and GEOL 377.

GEOL 489. Quantitative Methods in Geology (3). 3 credits. An introduction to the mathematical methods and statistical techniques that are employed by scientists in the disciplines of geochemistry, geophysics, hydrology and the petroleum/mineral industry. The course provides the quantitative skills necessary to manipulate geological data.

GEOL 491. Geological Literature Research. 3 credits. Provides instruction in the definition of a geological problem, sources and strategies for a literature search and the preparation of both written and oral reports. Prerequisites: Geology major (senior standing) and permission of the instructor.

GEOL 494. Internship in Geology. 1-3 credits. Student conducts a research or applied project in geology outside of the university. Requires an approved proposal prior to registration and a final report at the culmination of the project. Prerequisites: Minimum of eight credit hours in geology and a geology GPA of 2.5 or higher.

GEOL 497. Problems in Geology. 1-3 credits each semester. An undergraduate research course in one of the fields of geology. Open to advanced students who have adequate preparation. Prerequisite: Permission of the instructor.

GEOL 499. Honors in Geology. 6 credits. Three semester sequence. Prerequisite: 3.25 GPA or higher.

German

Department of Foreign Languages and Literatures

GER 101-102. Elementary German (4, 1). 4 credits each semester. Offered fall and spring. The fundamentals of German through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour’s work a week in the language laboratory.

GER 111-212. Intensive German. 6 credits each term. Offered May and summer. The fundamentals of German through listening, speaking, reading and writing. The first semester is the equivalent to GER 101-102 and the second is the equivalent to GER 211-212.

GER 231-232. Intermediate German. 3 credits each semester. Offered fall and spring. A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college German or equivalent.

GER 266. Contemporary German Literature in Translation. 3 credits. Offered fall and spring. German literature from the 1920s to the present. All lectures and readings are in English. Does not count toward a major, minor or licensure in German.
GER 300. German Grammar and Communication. 3 credits. 
(Offered fall and spring.) Intensive training in grammatical structures and their application to oral and written communication. Instruction is in German. Fulfills the College of Arts and Letters writing-intensive requirements for the major. Prerequisite: GER 222 or equivalent.

GER 307. A History of German Civilization. 3 credits. 
(Offered fall and spring.) A study of society, economics, politics and the arts in central Europe from Indo-European beginnings to the 1900s. Emphasis is also placed on outstanding contributions of German-speaking people. Instruction is in German. Prerequisite: GER 300.

GER 308. Contemporary German Civilization. 3 credits. 
(Offered fall and spring.) A study of life, culture, politics and economics in modern Germany. May be repeated for credit. Prerequisite: GER 300.

GER 320. German Oral and Written Communication. 3 credits. 
(Offered fall and spring.) Intensive training in the use of modern, everyday German with emphasis on conversation and composition. Readings in German will provide a context for discussion and writing. Prerequisite: GER 300 or equivalent.

GER 330. Business German. 3 credits. 
(Offered fall and spring.) A study of commercial and trade vocabulary and customs in conjunction with practice in commercial communication, including letter writing, interviews and interpretation. Instruction is in German. Prerequisite: GER 300.

GER 335. Introduction to German Literature. 3 credits. 
(Offered fall and spring.) A survey of German literature from 750 to the present. Textual analysis and written communication. Instruction is in German. Prerequisite: GER 300.

GER 341. German-English Technical/Commercial Translation. 3 credits. 
(Offered fall and spring.) German-English translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: GER 330 or permission of the instructor.

GER 400. Advanced Conversation. 3 credits. 
(Offered fall and spring.) Discussions deal with topics of current interest. Prerequisite: GER 300 or equivalent.

GER 405. The Age of German Classicism. 3 credits. 
(Offered fall and spring.) Reading and interpretation of significant works of Lessing, Schiller and Goethe. Instruction is in German. Prerequisite: Three years of college German or equivalent.

GER 415. German Romanticism and Realism. 3 credits. 
(Offered fall and spring.) A study of Romanticism and Realism with emphasis on Romantic poetry and the Realistic novel. Instruction is in German. Prerequisite: Three years of college German or equivalent.

GER 426. Modern German Literature. 3 credits. 
(Offered fall and spring.) A study of the works of major German writers of the 20th century. Instruction is in German. Prerequisite: Three years of college German or equivalent.

GER/ENG 436. Studies in German Literature. 3 credits. 
(Offered fall and spring.) A study of selected works of German literature. Instruction is in English. May be repeated for credit when course content changes.

GER 465. German Cinema. 3 credits. 
(Offered fall.) An analysis of the German cinema from the 1920s though the present. Emphasis will be on the relations between the German film and certain seminal periods in German history. Prerequisite: GER 300.

Gerontology

Department of Social Work

GERN/SOCI 280. Social Gerontology. 3 credits. 
(Offered fall and spring.) An interdisciplinary introduction to the study of aging. The course provides an overview of issues surrounding aging in contemporary society: personal, familial, communal and societal.

GERN 305. Programs and Services for the Elderly. 3 credits. 
(Offered fall.) A review of the programs and services provided for the elderly in the public and private sectors of America. Observations and participation in local programs for the elderly will be required. Prerequisite: GERN/SOCI 280.

GERN/FAM/SOWK 375. Grant Writing for Agencies. 3 credits. 
(Offered on a rotating basis.) A collaborative course, which emphasizes active learning, teaches basic skills on proposal writing. Students and agency representatives learn the importance of grant writing for agencies/organizations and research projects often needed to complete graduate education. There is a potential for a grant submission by the end of the semester.

GERN 400. Skills and Techniques in Gerontological Assessment. 3 credits. 
(Offered spring.) The study of the skills and techniques used in assessing the elderly client. Assessment is made from the holistic approach: physical, psychological and social. Prerequisite: GERN/SOCI 280.

GERN 487. Special Topics in Gerontology. 3 credits. 
(Offered on a rotating basis.) Examination of selected topics in gerontology that are of current importance in the field of gerontology. Course may be repeated for credit.

GERN 490. Special Studies in Gerontology. 1-3 credits. 
(Offered fall and spring.) Independent study in gerontology under faculty supervision. Limited to gerontology minors. Can be repeated for credit. Prerequisites: GERN/SOCI 280, GERN 305 and GERN 400 or permission of instructor.

GERN 495. Field Experience/Seminar in Gerontology (1, 6). 3 credits. 
(Offered fall and spring.) Supervised field experience in gerontology settings that allows observation and experience with the well and frail elderly. A minimum of six hours in the assigned setting each week and one hour seminar on campus. Prerequisites: GERN/SOCI 280, GERN 305 and GERN 400, major elective, and approval of the gerontology minor adviser.

Graph Design

School of Art and Art History

(Offered fall and spring.) Introduction to graphics on the computer. Students will explore hardware and software that relate to the presentation of graphic design projects and computer generated imaging. Prerequisites: ART 140 and ART 160 or permission of the instructor.

GRPH 244. Design Methodology (0, 9). 3 credits. 
(Offered fall and spring.) Exploration of strategies for conceptualizing, analyzing and solving design problems. Emphasis is placed on graphic presentation of ideas and the creative process. Prerequisite: ART 140.

GRPH 246. Introduction to Typography (0, 9). 3 credits. 
(Offered fall and spring.) Introduction to the study of letter forms for their aesthetic and communicative value. Emphasis will be placed on the form and function of basic type including a fundamental understanding of electronic typesetting. Prerequisite: GRPH 243.

GRPH 250. Portfolio Review. 0 credit. 
(Offered fall and spring.) Portfolio review required to enroll in graphic design courses at upper division standing. May be repeated once for pass/fail standing. Prerequisites: GRPH 243 and GRPH 244. Corequisite: GRPH 248.

GRPH 246. Introduction to Typography (0, 9). 3 credits. 
(Offered fall and spring.) Exploration of strategies for conceptualizing, analyzing and solving design problems. Emphasis is placed on graphic presentation of ideas and the creative process. Prerequisite: ART 140.

GRPH 246. Introduction to Typography (0, 9). 3 credits. 
(Offered fall and spring.) Introduction to the study of letter forms for their aesthetic and communicative value. Emphasis will be placed on the form and function of basic type including a fundamental understanding of electronic typesetting. Prerequisite: GRPH 243.

GRPH 250. Portfolio Review. 0 credit. 
(Offered fall and spring.) Portfolio review required to enroll in graphic design courses at upper division standing. May be repeated once for pass/fail standing. Prerequisites: GRPH 243 and GRPH 244. Corequisite: GRPH 248.

(Offered fall and spring.) Introduction to graphics on the computer. Students will explore hardware and software that relate to the presentation of graphic design projects and computer generated imaging. Prerequisites: ART 140 and ART 160 or permission of the instructor.

GRPH 244. Design Methodology (0, 9). 3 credits. 
(Offered fall and spring.) Exploration of strategies for conceptualizing, analyzing and solving design problems. Emphasis is placed on graphic presentation of ideas and the creative process. Prerequisite: ART 140.

GRPH 246. Introduction to Typography (0, 9). 3 credits. 
(Offered fall and spring.) Introduction to the study of letter forms for their aesthetic and communicative value. Emphasis will be placed on the form and function of basic type including a fundamental understanding of electronic typesetting. Prerequisite: GRPH 243.

GRPH 250. Portfolio Review. 0 credit. 
(Offered fall and spring.) Portfolio review required to enroll in graphic design courses at upper division standing. May be repeated once for pass/fail standing. Prerequisites: GRPH 243 and GRPH 244. Corequisite: GRPH 248.
GRPH/SMAD 339. Web Design. 3 credits. Offered fall and spring.
Introduction to Web design through theory and practical application. Assignments will focus on the unique form, content and structures associated with designing for the World Wide Web. Special emphasis on the creative process and the graphic presentation of ideas. Prerequisites: GRPH majors, GRPH 250, SMAD majors, GRPH 243.

GRPH 345. Advertising Design (0, 9). 3 credits. Offered fall and spring.
Through theory and practical application, the student learns to communicate a message using advertising design principles, the creative process and the message/client/consumer relationship. Prerequisite: GRPH 250.

GRPH 346. Intermediate Typography (0, 9). 3 credits. Offered fall and spring.
Continued study of letter forms for their aesthetic and communicative value. Emphasis will be placed on historical and sociological issues. Prerequisite: GRPH 250.

GRPH 347. Package Design (0, 9). 3 credits. Offered fall and spring.
Through theory, demonstrations and practical application, students learn to design in three-dimensions. Focus will be placed on aesthetics, as well as the form and function of a product’s housing. Prerequisite: GRPH 250.

GRPH 348. Graphic Design Portfolio. 3 credits. Offered fall and spring.
An examination of the business of graphic design, employment strategies and freelance opportunities. Focus is placed on solidification of the portfolio for employment and/or graduate school. This course is strongly recommended for the last semester prior to graduation. Prerequisite: GRPH 446. Corequisite: GRPH 447.

**GRPH/ART/ARTH 495. Internship in Art or Art History or Graphic Design. 1-8 credits. Offered fall and spring.**
An off-campus program prepared and monitored on an individual basis. Internships are designed to provide practical experience in the arts. ARTH 494 is a prerequisite for internships in museums and galleries. Prerequisites: Permission of the instructor and director. ARTH 494 for GRPH/ART/ARTH 495 in museums and galleries. GRPH 250 for GRPH 495.

GRPH/ART/ARTH 499. Honors (1, 3, 2). 6 credits total for three semesters. Offered fall and spring. Prerequisite: GRPH 250 for GRPH 499.

Greek

Department of Foreign Languages and Literatures

GRK 101-102. Elementary Greek. 4 credits each semester. Offered fall and spring.
Designed to provide a reading knowledge of Classical Greek as well as New Testament koine. Greek life, thought and culture are stressed. Especially recommended for science, English and philosophy majors.

GRK 231-232. Intermediate Greek. 3 credits each semester. Offered fall and spring.
An intensive reading course. Selections from Classical Greek writers and/or the New Testament. Prerequisite: One year of college Greek or equivalent.

Health

Department of Health Sciences

GTH 100. Personal Wellness. 3 credits. Offered fall and spring.
Emphasizes lifestyle behaviors contributing to health promotion and disease prevention. General areas affecting health status are identified and suggestions made as to how health-related behaviors, self-care and individual decisions contribute to wellness and influence dimensions of health. A one-hour weekly individual physical wellness lab is included.

HTH 151. Foundations of the Health Sciences. 3 credits. Offered fall and spring.
Review of the basic competencies and foundations of the health sciences including academic planning, professionalism, writing and presentation skills, information literacy, foundational principles, and the roles and responsibilities of selected health science fields. This is intended to be the first course that a student takes in the health sciences major.

**HTH 204. Emergency Health Care (2, 2). 3 credits. Offered fall and spring.**
A survey of various dimensions of the legal aspects of emergency care, cardiopulmonary emergencies, hemorrhage control, wounds, shock, heat injuries and other health emergencies. Selected American Red Cross and American Heart Association certifications available.

**HTH 206. Advanced Athletic Training. 3 credits. Offered fall and spring.**
This course involves advanced study of injuries associated with physically active individuals including injury mechanisms, signs and symptoms, and treatments. Other topics include relationships athletic trainers build with other health-care professionals; environmental issues related to physical activity; and special needs of various populations. Prerequisites: BIO 290 and HTH 205. Formerly HTH 303.
HTH 252. Sexually Related Diseases. 1 credit. Offered fall and spring.
Sexually transmitted diseases and other sexual systems problems (breast and testicular cancer), nonvenereal anomalies, sexual disorders of the genitalia and urinary system problems.

HTH 270. Personal Health Promotion. 3 credits. Offered fall and spring.
A survey of principles for the promotion of optimum individual, family and community health through intelligent self-direction of health behavior. Topics include the physical, mental and social dimension of health economics, disease control, human sexuality, chemical abuse, injury control, and nutrition.

HTH 278. Alcohol: Use and Abuse. 1 credit. Offered fall and spring.
Survey of the drug alcohol. Topics include pharmacological effects, patterns of use, potential for abuse, treatment programs and prevention of alcohol abuse and alcoholism.

HTH 300. Medical Terminology. 3 credits. Offered fall and spring.
Study of terms that relate to body systems, anatomical structures, medical processes and procedures, and a variety of diseases disorders that afflict human organisms.

HTH 302. The Language of Medicine. 1 credit. Offered fall and spring.
This course introduces the student to the vocabulary of medicine through learning the prefixes, roots and suffixes used to construct medical terms.

HTH 308. Therapeutic Assessment. 3 credits. Offered fall.
The purpose of this course is to present an overview of established and current knowledge in the major content areas in therapeutic assessment by examining the impact of work and the working environment on human body systems as they relate to health and wellness. Prerequisite: BIO 290.

HTH 310. Medical Interviewing and Physical Examination I. 1 credit. Offered fall and spring.
This is the first in a four-course series that presents fundamental concepts in the physician assistant/patient relationship, skills needed to conduct complete medical histories and physical examinations of patients of all ages, systematic approaches to clinical problem solving, and methodologies commonly used to communicate medical information. Prerequisite: Admission to physician assistant concentration or permission of program director.

HTH 311. Medical Interviewing and Physical Examination II. 1 credit. Offered fall and spring.
This is the second in a four-course series that presents fundamental concepts in the physician assistant/patient relationship, skills needed to conduct complete medical histories and physical examinations of patients of all ages, systematic approaches to clinical problem solving, and methodologies commonly used to communicate medical information. Prerequisite: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 312/ KIN 312. The Profession of Teaching Health & Physical Education. 2 credits. Offered fall and spring.
Introductory study of the roles of the teacher and the learner and the pedagogical content knowledge of health and physical education. An in-depth examination of the unique position and qualifications of the specialist in physical education and health. Systematic observations will occur. Prerequisite: Admission to teacher education.

HTH 313. Preventive Medicine. 1 credit. Offered fall and spring.
The course presents strategies that physician assistants employ in promoting health and well being among the people they serve. It also examines public health strategies focused on early discovery of disease, prevention of disease and stopping the spread of disease. Prerequisite: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 317. Clinical Laboratory Medicine. 2 credits. Offered fall and spring.
This course presents the clinical laboratory tests used to detect and monitor common diseases and disorders. It focuses on selecting and interpreting the appropriate tests for each body system as well as performing selected tests. Prerequisite: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 320. Statistical Methods for Health Science Research. 3 credits. Offered fall and spring.
This course reviews statistical concepts and techniques with special reference to their relation to health science applications and issues. It also reinforces the logical processes associated with statistical decision making, again with particular reference to health and medical research methods. Prerequisites: MATH 220 and HTH 354.

HTH 352. Environmental Health. 3 credits. Offered fall.
An investigation of environmental factors and their effects on the health of the individual, community and society.

HTH 354. U.S. Health Care System. 3 credits. Offered fall and spring.
This course examines the structure and organization of the health care delivery system in the United States. The components, functions, financing and resources of this system are described.

HTH 355. AIDS and Other Sexually Transmitted Diseases. 1 credit. Offered fall and spring.
Discussion includes theories of origins, statistics and characteristics of the causative pathogen, incubation, illness patterns, transmission, prevention and treatment of AIDS and other STDs. AIDS and other STDs in relation to prisons, children, schools, global concerns, health care systems and legal factors will be considered.

HTH 357. Coping with Stress. 1 credit. Offered fall and spring.
Identifying causes and personal symptoms associated with stress and individual methods of handling stress.

HTH 368. International Health and Nutrition Studies. 3 credits. Offered fall.
This course involves participation with an interdisciplinary team which will travel outside of the United States to observe and experience the health care challenges in a developing nation.

HTH 370. Child and Adolescent Health. 3 credits. Offered fall and spring.
This course will discuss the CDC priority health risk categories and the Healthy People 2010 Objectives for the Nation as they relate to child and adolescent health. In addition, the CDC model for Coordinated School Health Programs will be explored to determine specific strategies for health improvement. Prerequisite: Restricted to PHETE or health sciences majors.

HTH 371. Behavior and Health of Children and Adolescents. 3 credits. Offered spring.
This course will review the current health status and health risk behaviors of children and adolescents. It will focus on epidemiological trends and behavioral and social etiological factors. In addition, this course will include an overview of the theoretical approaches to children and adolescent health behavior. Application of theory will be made to the development of strategies for health promotion and interventions to reduce specific health problems for children and adolescents that would be appropriate for teachers and schools. Prerequisite: Admission to the PHETE program.

HTH 372. Human Sexuality. 3 credits. Offered fall and spring.
An in-depth study of sexuality across the lifespan. Emphasis is placed on the development of sexuality with attention given to the psychological, physiological, ethical, and socio-cultural implications.

HTH 375. Pregnancy Control and Abortion. 1 credit. Offered fall and spring.
An in-depth study of four areas concerning the following sexual aspects of living: contraception, abortion, sterilization and fertility-enhancing methods. The biochemical, physiological, legal, cultural and ethical aspects are considered.
HTH 378. The Use and Effects of Drugs. 3 credits. **Offered fall and spring.**
A study of the use and pharmacological properties of popular legal and illegal drugs and their effects on the health of individuals and society.

HTH 389. Practicum in Health Education. 1-3 credits. **Offered fall and spring.**
Selected practicum experiences which provide students with supervised practicum experiences.

HTH 390. Selected Topics in Health Science. 1-3 credits. **Offered fall and spring.**
Study of selected topics in health science. Consult e-campus for specific topics. May be repeated for credit when course content changes.

HTH 402. Topics in Health Education I. 3 credits. **Offered every other spring.**
An overview of selected topics in health content required for students preparing to teach health in public schools. Selected topics include addictions, alcohol, tobacco, drug use and abuse, safety, nutrition and weight management in children, immunity, and prevention and control of infectious and chronic diseases. Special emphasis will be on issues relevant to teaching these topics in schools. **Prerequisite:** Admission to the PHETE program.

HTH 403. Topics in Health Education II. 3 credits. **Offered every other spring.**
An overview of selected topics required for students preparing to teach health in public schools. Selected topics include consumer health, environmental health, mental-emotional health, personal health, aging, and death and dying. Special emphasis will be on issues relevant to teaching these topics in schools. **Prerequisite:** Admission to the PHETE program.

HTH 407. Health Education Facilitation/Synthesis. 2 credits. **Offered fall and spring.**
Students apply health knowledge by identifying needs, designing and facilitating programs in various settings on pertinent topics. These topics include sexual health, STI/HIV prevention, eating disorders, stress management, sexual assault and alcohol/drug abuse. Upon completion of all course requirements, students will be credentialed as a Certified Peer Educator (CPE). **Prerequisite:** Permission of instructor.

HTH 408. Managing and Interpreting Health Research Information. 3 credits. **Offered fall and spring.**
This course will present an overview of the role of research application, interpretation and communication as related to the decision-making processes in health care fields. **Prerequisite:** MATH 220 or equivalent; HTH 320 recommended.

HTH 409. Therapeutic Interaction. 3 credits. **Offered fall.**
This course focuses on the fundamental aspects of the therapeutic process, small group dynamics and understanding professional relationships in occupational therapy practice. Students will investigate concepts, attitudes and behavioral strategies that will support effective professional communication. They will also investigate inter- and intra-personal strategies that facilitate collaborative relationships as an occupational therapist in health or human service provision. **Prerequisite:** Admission into the occupational studies concentration and successful completion of all previous course work.

HTH 410. Medical Interviewing and Physical Examination III. 2 credits. **Offered fall and spring.**
This is the third in a four-course series that presents fundamental concepts in the physician assistant/patient relationship, skills needed to conduct complete medical histories and physical examinations of patients of all ages, systematic approaches to clinical problem solving, and methodologies commonly used to communicate medical information. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 411. Clinical Problem Solving. 2 credits. **Offered fall and spring.**
This is the fourth in a four-course series that presents fundamental concepts in the physician assistant/patient relationship, skills needed to conduct complete medical histories and physical examinations of patients of all ages, systematic approaches to clinical problem solving, and methodologies commonly used to communicate medical information. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 413. Pharmacology for Physician Assistants I. 3 credits. **Offered fall and spring.**
This is the first of two courses that provide the base of information necessary for clinical prescribing of medications. It includes pharmacokinetics, pharmacodynamics and pharmacotherapeutics. Within each class of therapeutic drugs, the course examines drug actions, interactions, reactions and contraindications. The course will also include principles of prescribing and patient compliance. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 414. Pharmacology for Physician Assistants II. 3 credits. **Offered fall and spring.**
This is the second of two courses that provide the base of information necessary for clinical prescribing of medications. It includes pharmacokinetics, pharmacodynamics and pharmacotherapeutics. Within each class of therapeutic drugs, the course examines drug actions, interactions, reactions and contraindications. The course will also include principles of prescribing and patient compliance. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 417. Clinical Medicine I. 3 credits. **Offered fall and spring.**
This is the first of a three-course series that examines the etiology, presentation, diagnosis, and treatment of diseases and disorders common to primary care physician assistant practice. This course serves as preparation for the clinical rotations in internal medicine and family medicine. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 418. Clinical Medicine II. 5 credits. **Offered fall and spring.**
This course provides an introductory knowledge base in pediatrics, women’s medicine and behavioral medicine. It prepares students for clinical rotations in these specialties. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 419. Clinical Medicine III. 3 credits. **Offered fall and spring.**
This course provides an introductory knowledge base in general surgery and emergency medicine. It prepares students for clinical rotations in these specialties. Emphasis is on the primary care aspects pertinent to physician assistant practice. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 420. The Physician Assistant Profession. 1 credit. **Offered fall and spring.**
This course will explore the principles of the PA profession, its history and place in the spectrum of health care professions. Economic, legal and societal factors influencing the profession will be discussed. **Prerequisites:** Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 421. Transition to Physician Assistant Practice. 1 credit. **Offered fall and spring.**
This course examines issues related to the shift from the role of a PA student to that of a practicing PA. Topics include medical liability and risk management, business aspects of clinical practice, credentialing processes.
and career development. Prerequisites: Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 422. Advanced Clinical Skills. 1 credit. Offered fall and spring.
This course focuses on the skills needed to provide appropriate care for individuals and groups who have specific needs based on culture, lifestyle or temporary circumstance. Prerequisites: Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 423. Pediatric Clinical Rotation. 2 credits. Offered fall and spring.
During this four-week clinical rotation the student gains knowledge, experience and skill in interviewing and examining children, diagnosing and treating disorders, and educating and counseling children and parents through participation in these activities while under the supervision of an experienced clinician practicing pediatric medicine. The course will also include assigned readings and exercises. Prerequisites: Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 424. Occupational Development Through the Lifespan. 3 credits. Offered fall.
The fundamental aspect of occupational development that occurs throughout life is examined. Interactions between the individual and the environment across the several domains of occupation are explored. Acquisition of values, roles, habits, temporal adaptation and interests during each developmental stage are reviewed. Prerequisites: Admission to occupational studies concentration and successful completion of all previous concentration course work.

HTH 425. Obstetrics and Gynecology Clinical Rotation. 2 credits. Offered fall and spring.
During this four-week clinical rotation the student gains knowledge, experience and skill in interviewing and examining women, diagnosing and treating disorders, and educating and counseling women through participation in these activities while under the supervision of an experienced clinician practicing obstetric and gynecologic medicine. The course will also include assigned readings and exercises. Prerequisites: Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 427. Internal Medicine Clinical Rotation. 4 credits. Offered fall and spring.
During this eight-week clinical rotation the student gains knowledge, experience and skill in interviewing and examining patients, diagnosing and treating disorders, and educating and counseling patients through participation in these activities while under the supervision of an experienced clinician practicing internal medicine. The course will also include assigned readings and exercises. Prerequisites: Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 429. Family Medicine Clinical Rotation. 4 credits. Offered fall and spring.
During this eight-week clinical rotation the student gains knowledge, experience and skill in interviewing and examining patients of all ages, diagnosing and treating disorders, and educating and counseling patients and families through participation in these activities while under the supervision of an experienced clinician practicing family medicine. The course will also include assigned readings and exercises. Prerequisites: Admission to physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 431. Human Occupation and the Foundations of the Profession. 3 credits. Offered fall.
The relationship between human behavior and occupation is examined. Issues important to occupational engagement are explored and linked to occupational science and the occupational therapy profession. Prerequisite: Admission to the occupational studies concentration and successful completion of all previous concentration course work.

HTH 435. Level I Fieldwork One. 1 credit. Offered spring.
The course offers an opportunity to develop clinical skills in health and human service programs serving pediatric and adolescent clients. This experience will link knowledge and skills developed in didactic course work with a clinical environment. Prerequisite: Admission to the occupational studies concentration and successful completion of all previous concentration course work.

HTH 438. Administrative Functions for OTs. 3 credits. Offered summer.
This course provides an in-depth introduction to the management functions, tasks, roles and responsibilities as they are carried out in health and human service organizations. Discussion of emerging issues impacting health care practitioners is provided. Supervisory issues specific to the occupational therapist will be explored. Prerequisite: Admission into the occupational studies concentration.

HTH 439. Leadership. 3 credits. Offered fall and spring.
This course will introduce students to the concept of leadership, provide opportunities to develop leadership skills, relate leadership to ethics and personal values, and assist students in creating a bridge between leadership theory and practice.

HTH 441/KIN 407. Rehabilitative Biomechanics. 3 credits. Offered fall and spring.
This course is designed to introduce the student to a variety of biomechanical concepts and applications as related to the health professions. Specific attention will be given to the biomechanical aspects of the musculoskeletal system. Prerequisite: BIO 290.

HTH 442. Chronic Diseases. 3 credits. Offered fall.
This course examines the pathophysiological effects of chronic diseases on health and well being. Discussions include various strategies which improve the functional status and health of individuals at risk. Prerequisite: HTH 308 or KIN 302 and KIN 302L.

HTH 445. The Occupational Therapy Process. 3 credits. Offered fall.
The occupational therapy process is examined from assessing an occupational profile to focusing on engagement in occupation to achieve desired outcomes. Methods of assessment are studied as a defining step in the therapeutic process. Goal development, intervention strategies and documentation are also addressed. Prerequisite: Admission to the occupational studies concentration and successful completion of all previous concentration course work.

HTH 450. Epidemiology. 3 credits. Offered fall and spring.
A study of the causation and prevention of the major diseases that affect the quality of an individual’s life. Practical skills utilized by practicing epidemiologists are emphasized. Prerequisites: Senior health sciences major or permission of instructor.

HTH 451. Health Behavior Change. 3 credits. Offered fall and spring.
Factors which influence health behavior and characteristics of these individuals and groups. Analysis of previous programs designed to change these behaviors and the formulation of new health modification programs included. Prerequisite: Senior standing required or permission of the instructor.

HTH 453. Public Health Education Methods. 3 credits. Offered spring.
This course is designed for public health education students to develop competencies necessary for working in community and public health settings. Presentation skills, developing print, computer and Internet materials, facilitating groups and coalitions, and advocacy are some of the topics covered.

HTH 454. Internships in Health Organizations. 3 credits. Offered spring and summer.
Full-time directed field experience in a health organization. Opportunity provided to work in an appropriate setting. Student furnishes off-campus living and traveling expenses. Prerequisite: Permission of the instructor and a 2.5 grade point average.
HTH 458. Health Program Planning and Evaluation. 3 credits. 
Offered fall and spring. 
This lecture and laboratory course introduces students to principles and techniques employed to plan, implement and evaluate health promotion programs. Students will conduct a campus or community event and compile a formal report. Prerequisites: Senior health sciences majors or permission of instructor.

HTH 460. Sensorimotor Foundations of Occupational Engagement. 2 credits. Offered spring. 
The importance of sensory processing and motor response and the impact on behavior, movement and occupational engagement are examined. Normal and abnormal sensorimotor function is presented with specific emphasis on how dysfunction impacts upon performance in the domains of occupation. Prerequisite: Admission to the occupational studies concentration and successful completion of all previous concentration course work.

HTH 461. Assistive Technology and Therapeutic Media. 3 credits. 
Offered spring. 
The theoretical foundations of the therapeutic application of craft media, assistive devices and assistive technology that are utilized in occupational therapy practice are examined. Use of occupation (activity) analysis to adapt or develop compensatory strategies for functional activities is considered in relation to a human’s ability to engage in areas of occupational performance and develop effective performance skills and patterns. The course also reviews small group facilitation and management in occupational therapy treatment. Prerequisite: Admission to the occupational studies concentration and successful completion of all previous concentration course work.

HTH 470. Instructional Methods in Health Education. 4 credits. 
Offered spring. 
An overview and application of methods for teaching health in the schools. Students will develop skills in planning, instructional methods and classroom management. Micro-teaching experiences and a practicum in the schools are incorporated into this course to provide for the application and practice of material and skills learned. Prerequisite: Admission to teacher education.

HTH 471. Health Aspects of Gerontology. 3 credits. Offered spring. 
Promotion of health in the aged, physiological aspects of the aging process; community, state and federal health programs, and services for the aged.

HTH 472. Family Life Education for Teachers. 2 credits. Offered spring. 
This course will present an overview of issues affecting the sexual health of children and youth. A variety of family life education curricula will be discussed, however, the approved Virginia Department of Education curriculum will be examined and students will be trained in implementing and evaluating its various modules.

HTH 478. Advanced Health Assessment Techniques. 3 credits. 
Offered fall. 
Examining of health risk appraisals and metabolic assessments used to implement strategies for behavioral change and improved overall wellness. Other topics include programming and group dynamics used to promote healthy lifestyle behaviors.

HTH 481. Behavioral Medicine Clinical Rotation. 2 credits. 
Offered fall and spring. 
During this four-week clinical rotation the student gains knowledge, experience and skill in interviewing and examining patients, diagnosing and treating disorders and educating and counseling patients and family members through participation in these activities while under the supervision of an experienced clinician practicing behavioral medicine. The course will also include assigned readings and exercises. Prerequisites: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration, or permission of the program director.

HTH 482. Advanced Health Assessment Techniques. 3 credits. 
Offered spring. 
Skill acquisition of current health assessment techniques. These assessments are used to determine risk factors which play a role in heart disease and selected chronic diseases and to evaluate current health status. Prerequisite: HTH 480.

HTH 483. Surgery Clinical Rotation. 2 credits. Offered fall and spring. 
During this four-week clinical rotation the student gains knowledge, experience and skill in interviewing and examining patients, diagnosing and treating disorders and educating and counseling children and patients through participation in these activities while under the supervision of an experienced clinician practicing surgery. The course will also include assigned readings and exercises. Prerequisites: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 485. Emergency Medicine Clinical Rotation. 2 credits. 
Offered fall and spring. 
During this four-week clinical rotation the student gains knowledge, experience and skill in interviewing and examining patients, diagnosing and treating disorders and educating and counseling patients and family members through participation in these activities while under the supervision of an experienced clinician practicing emergency medicine. The course will also include assigned readings and exercises. Prerequisites: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 487. Elective Clinical Rotation I. 2 credits. Offered fall and spring. 
This four-week rotation is devoted to an area of study of the student’s choosing and the faculty’s approval. It might be additional time in a specialty already introduced through another rotation, a different medical specialty of interest or a non-clinical area associated with the PA profession such as education, professional practice issues, etc. The course will also include assigned readings and exercises. Prerequisites: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration or permission of the program director.

HTH 488. Substance Abuse Prevention Basics. 1 credit. Offered spring. 
This course focuses on basic, cutting-edge substance abuse prevention theory, research and practice. It is designed for the substance abuse intervention minors who have completed the content courses and are preparing for entry-level practitioner positions in health education and/or substance abuse prevention/intervention. Instruction will bridge theory to practice by incorporating practicing professionals.

HTH 489. Elective Clinical Rotation II. 2 credits. Offered fall and spring. 
This four-week rotation is devoted to an area of study selected by the student from a menu of options offered by the PA program. The purpose is to provide the student with experience with a broader social context for PA practice. Options might include experience with patient populations of various cultural or socioeconomic backgrounds, inner city or rural medically underserved populations, or multicultural or interdisciplinary team practices. The course will also include assigned readings and exercises. Prerequisites: Admission to the physician assistant concentration and successful completion of all previous courses in the concentration or permission of the instructor.

HTH 490. Special Studies in Health Education. 1-3 credits each semester. Offered fall and spring. 
Designed to give the superior student in health education an opportunity to complete independent study and/or research under faculty supervision. Prerequisite: Permission of the department head.
HTH 491. Occupational Therapy Tutorial I. 1 credit. Offered fall.
Tutorial I is a small group case-based discussion seminar, facilitated by a clinical tutor who is an occupational therapist. Students research and discuss clinical cases related to content that is integrated from all courses that semester in the occupational studies concentration. Prerequisite: Admission into the occupational studies concentration and successful completion of all previous concentration course work.

HTH 492. Occupational Therapy Tutorial II. 1 credit. Offered spring.
This tutorial course is a continuation of the small group case-based discussion seminar process facilitated by a clinical tutor who is an occupational therapist. Students research and discuss clinical cases related to content that is integrated from all courses that semester in the occupational studies concentration. Prerequisite: Admission into the occupational studies concentration.

HTH 499. Honors. 6 credits. Offered fall and spring.
Year course.

Health and Human Services

Institute for Innovation in Health and Human Services

HHS 220. Adult Health and Development Program. 3 credits.
Offered fall and spring.
In this academic course and outreach program to adults age 55+ in the surrounding community, JMU students are trained to work 1:1 with the older adults, to apply aging and intergenerational theory, and to critically analyze the outcomes from their interactions.

HHS 320. Adult Health and Development Program – Leadership. 3 credits. Offered fall and spring.
Both an academic course and an outreach program to adults age 55+ in the surrounding community, this course offers JMU students who have previously participated in the program the opportunity to become Senior Staff who provide program leadership, oversight and implementation to the program. Prerequisite: Permission of the instructor and completion of one semester of AHDP.

HHS 391. Introduction to Informatics for Health Care Professionals. 1 credit.
A multidisciplinary introduction to informatics in health care focusing on technology, data, information and knowledge and their applications in health care. Emerging trends and issues are examined.

HHS 490. Special Topics in Health and Human Services. 0-4 credits. Offered fall and spring.
This course involves topics of special interest in the area of health and human services but is open to all students. The focus of specific courses is identified for specific offerings. Courses are offered based on faculty and student interests.

Health Services Administration

Department of Health Sciences

HSA 358. Health Administration. 3 credits. Offered fall.
This course provides an introduction to management functions, tasks and roles as they are carried out in health services organizations. Discussion of emerging issues affecting the management of health services organizations is provided. This course uses the case method of analysis to develop critical thinking skills. Prerequisite: HTH 354 or permission of the instructor.

HSA 360. Health Care Marketing. 3 credits. Offered spring.
This course introduces the role, functions and tasks of health care marketing. Attention is devoted to understanding basic marketing principles; using oral, written and visual electronic communications media; and developing marketing plans for health care organizations.

HSA 363. Health Economics. 3 credits. Offered fall.
This course explains how economic forces affect the health service sector and how economic tools can be used to assess and improve health industry performance. Efficiency and equity trade-offs are considered. Prerequisite: ECON 201 or equivalent.

HSA 365. Values in Health Care. 3 credits. Offered fall and spring.
This course provides an overview of health ethics and health law for students majoring in health sciences. Students will address the major principles facing a health service professional in the delivery of health services. Particular attention will be paid to development of methodologies for ethical decision-making. Prerequisite: HTH 354 or permission of instructor.

HSA 366. Health Politics and Policy. 3 credits. Offered fall.
This course provides an introduction to the state and federal policy-making processes with a distinct focus on health policy. Emphasis will be on how health policy impacts health service organizations and the delivery of health care. Prerequisite: HTH 354 or permission of instructor.

HSA 367. Comparative International Health Systems. 3 credits. Offered spring every other year.
This course concentrates on various approaches used to provide public and personal health services around the world. Strengths and weaknesses of different health care systems in terms of availability, accessibility, cost effectiveness, continuity and quality of services will be considered. Prerequisite: HTH 354.

HSA 385. Health Services Administration Career Seminar. 1 credit. Offered fall and spring.
This course is a career development seminar for health services administration students. An array of health administrators from varied health care organizations helps expand students’ understanding of the health administration field. This course is designed for junior-level students with an expectation of a major concentration in health services administration.

HSA 452. Hospital Organization and Administration. 3 credits. Offered spring.
This course examines the organization and operation of community hospitals in the U.S. Specific attention is devoted to management’s role in internal operations and in external relationships with the community and other stakeholders. Discussion of emerging issues affecting the management of hospitals and hospital systems is provided. Prerequisites: HTH 354 and HSA 358 or permission of the instructor.

HSA 454. Internship in Health Organizations. 3 credits. Offered spring and summer.
Full-time directed field experience in a health organization. Opportunity provided to work in an appropriate setting. Student furnishes off-campus living and traveling expenses. Prerequisites: Permission of the instructor and a 2.5 GPA.

HSA 455. Long Term Care Organization and Administration. 3 credits. Offered spring.
This course provides an in-depth examination of the organization and administration of long term care programs: nursing homes, home health services, adult daycare, assisted living and hospice. This course is recommended for students planning careers in long term care. Prerequisites: HTH 354, HSA 358 and GERN 280 or permission of the instructor.

HSA 456. Ambulatory Care Services: Organization and Administration. 3 credits. Offered fall.
This course provides an in-depth examination of the staffing, organization, budgeting and administration of ambulatory services including medical group practices, community and hospital-based clinics, and ambulatory surgery centers. This course is recommended for students planning administrative careers in this area with a foundation in health services administration. Prerequisite: HTH 354, HSA 358 or permission of the instructor.

HSA 462. Managed Care. 3 credits. Offered spring.
The growing influence of managed health care on the organization and delivery of health services in the United States is addressed in this course. Structural and operational characteristics of managed care organizations and plans, including HMOs, PPOs and other plans are explored, as are the implications of managed care plans for the management of hospitals and other health care organizations. Prerequisite: HSA 358 or permission of the instructor.
HSA 463. Quality Management in Health Care. 3 credits. Offered fall.
This course examines the quality management function required in
diverse health care organizations. The student is exposed to definitions
and standards of quality in health care, as well as to various tools used
to measure, evaluate and improve quality. Emerging issues affecting
the management of health care quality are discussed. Prerequisites:
HTH 354 and HSA 359 or permission of the instructor.

HSA 464. Funding in Health Care. 3 credits. Offered spring.
General financial analysis is covered in terms of its application to health
care entities. Concepts, issues and tools related to health care funding
are covered. Prerequisites: COB 204, COB 241, FIN 345 and HTH 320.

Hebrew
Department of Foreign Languages and Literatures
HEBR/REL 131-132. Elementary Biblical Hebrew. 4 credits each
semester. Offered fall and spring.
An introductory course for students who intend to acquire the ability to
read the Massoretic text of the Bible. Systematic study of the
fundamentals of grammar, with emphasis on reading, pronunciation
and translation.

HEBR/REL 231-232. Intermediate Biblical Hebrew. 3 credits
each semester. Offered fall and spring.
An intensive reading course. Selections from the Massoretic text
of the Bible. An introduction to the critical apparatus used within the
Massoretic text as well as the variant reading apparatus printed in the
Biblia Hebraica Stuttgartensia. Prerequisite: One year of college biblical
Hebrew or equivalent.

History
Department of History
GHIST 101. Global Culture to 1650. 3 credits. Offered each fall, spring
and summer.
A survey of important historical developments from prehistoric times to
the mid 17th century. Emphasis is given to the rise and decline of great
global civilizations and their lasting contributions to humanity.

GHIST 102. Global Culture Since 1650. 3 credits. Offered each fall,
spring and summer.
A survey of important historical developments from the mid 17th century
to the present. Emphasis is given to the growth of nationalism, the
development of colonialism, and global events, problems and conflicts
of the present century.

GHIST 150. Critical Issues in Recent Global History. 3 credits.
Offered each fall and spring.
This course examines issues in recent history as a means to introduce,
develop and enhance critical thinking skills and to supplement writing,
oral communication, library and computing skills objectives for the
General Education Cluster One. A seminar format emphasizes the
development and articulation of well reasoned arguments in organized
and grammatically acceptable prose.

HIST 201. Europe to 1789. 3 credits. Offered each fall.
An examination of Europe from 1000 to 1789 with emphasis on the
formation of indigenous European institutions through the rise of national
monarchies, the Renaissance, Reformation, age of exploration, Scientific
Revolution and Enlightenment. Emphasis is given to the intellectual
developments of Europe that created a dynamic modern civilization.

HIST 202. Europe 1789 to the Present. 3 credits. Offered each spring.
An examination of Europe from 1789 to the present with emphasis upon
the democratic and industrial revolutions, the rise of nation states, building
of global empires, World War I, the Russian Revolution, totalitarianism,
World War II, decolonization, the Cold War and European integration.

GHIST 225. U.S. History. 4 credits. Offered each fall, spring and summer.
A survey of U.S. history from the Colonial period to the present,
emphasizing the development of American civic life, the involvement of
the U.S. in world affairs and the cultural richness of the American people.
This course stresses the analysis and interpretation of primary sources.

HIST 263. Africa. 3 credits. Offered each fall and spring.
Emphasis is placed on the social and cultural aspects, as well as the
emerging role the continent plays in contemporary world history.

HIST 267. Latin America. 3 credits. Offered each fall.
A survey of the history of Latin America examining the pre-Columbian
Indian civilizations, the Spanish and Portuguese conquests, the colonial
era and its impact, the wars of independence, and selected case studies
of the early national period.

HIST 268. Contemporary Latin America. 3 credits. Offered each spring.
A survey of the historical development of Latin America during the 20th
century with emphasis on selected nations which have played a
significant role in Latin American affairs.

HIST 269. Middle and Near East: 500-1500. 3 credits. Offered fall or spring.
A survey of the Middle and Near East from the Late Roman world through
the rise of the Ottoman Empire. Emphasis is placed on the political, social
and religious developments that form the historical and cultural bases
for the communities that thrived in the region then and now.

HIST 270. Modern Middle East. 3 credits. Offered each fall and spring.
A survey of the political evolution of the modern Middle East. Emphasis
is placed on the impact of Western imperialism, problems of Arab
nationalism, origins of the Arab-Israeli conflict and involvement of Russia
and the United States in the Middle East today.

HIST 273. Asia to 1600. 3 credits. Offered each fall.
A broad survey of Eastern civilizations from their beginnings to about
1600 with emphasis on their distinctive aesthetic and intellectual
traditions as well as the development of their political, social and
economic institutions.

HIST 274. Modern Asia. 3 credits. Offered each spring.
A historical survey of East, South and Southeast Asia with emphasis on the
impact of the West on the traditional societies and governments of the
Eastern World, as well as nationalism, colonialism, wars, revolutions
and industrialization in Asia in modern times.

HIST 300. U.S. Military History. 3 credits. Offered each fall.
A survey of the evolution of the American way of war from the Colonial
era to the post-Cold War period emphasizing the development of military
and naval institutions, U.S. strategic doctrine and the social legacies of
the U.S. military establishment.

HIST 301. European Military History. 3 credits. Offered each spring.
A survey of European military history (including Russia/Soviet Union) from
the Hellenistic period through the 1982 Falklands-Malvinas War. The
evolution of strategic doctrine and military institutions, their effect upon
European society and their role in European imperialism will be emphasized.

HIST/ITAL 308. Contemporary Italian Civilization. 3 credits.
Offered each spring.
A study of Italian society, economics, politics and the arts from 1814 to
the present. Instruction in English. (Research papers for Italian majors/
minors in the language.)

HIST 310. American Business History. 3 credits.
A survey of the role of business in the United States from the Colonial
to the present, with emphasis on the entrepreneurial spirit,
business developments, and innovations and the relationship between
the federal government and commerce.

HIST 315. History of Sport in America. 3 credits.
An interpretive survey that examines the social and cultural history of
America from the late 19th century to the present through sports.
HIST 320. Women in U.S. History. 3 credits. Offered each spring.
A survey of the role of women in the United States from the Colonial period to the present. Attention is given to contributions of the ordinary women, the Women's Rights movements, the impact of women on reform and political movements, and the changing status of women in society.

HIST 321. European Women's History. 3 credits. Offered each fall.
A survey of the gendered history of European women from the Classical to the Modern Era. Attention will focus on women in England, France, Germany and Central Europe, but material will also be presented on women of the Baltic, Mediterranean and Slavic regions.

HIST 322. The New South. 3 credits.
An examination of major problems in the history of the American South after Reconstruction, beginning with debates over the nature of the "New South" itself. The course will emphasize cultural and social history; it also explores political and economic developments. Prerequisite: GHIST 225.

HIST 323. The Old South. 3 credits.
Economic, cultural and social history of the antebellum South: 1790-1860. The region's political history will serve as a supporting part of the course.

HIST 326. The Automobile in 20th Century America. 3 credits. Offered each fall.
This course uses the automobile as a window into 20th century American life. It examines the influence of automobile on patterns of work and leisure; on struggles over gender, race and ethnicity; on individualism, consumerism and government regulation. It also surveys mass automobile's effects on our physical and natural environments and looks at future prospects of automobility in the information age.

HIST 327. Technology in America. 3 credits. Offered each spring.
A historical survey of the complex and changing relationship between technology and American society from Native American canoes to the Internet. Attention is given to technology's role in relations of power, in the home, on the farm, in the workplace and on the battlefield.

HIST 328. History of Science, 1543-1859. 3 credits. Offered every other fall.
An intellectual and social survey of science from Copernicus' "De Revolutionibus" to Darwin's "The Origin of Species". Topics include Renaissance natural philosophy, the Scientific Revolution, Enlightenment science and the birth of geology and biology.

HIST 329. History of Science Since 1859. 3 credits. Offered every other fall.
A survey of pure and applied science since the publication of Darwin's "The Origin of Species". Topics include the development of relativity and quantum theory; Darwinism and the eugenics movement; rocketry, radar and the Manhattan Project; and the revolutions in biochemistry, genetics, materials science and information technology.

HIST 330. U.S. Diplomatic History. 3 credits. Offered each fall and spring.
A survey of major themes, events and forces shaping the development of American foreign relations throughout our history. Key documents such as the Monroe Doctrine will be examined, as will significant issues including manifest destiny, the United States as a world power, origins of Cold War and Detente.

HIST/ANTH 331. Historical Archaeology. 3 credits. Offered every other spring.
The course introduces students to the purposes, subject matter, methodology and historical background of the discipline of historical archaeology. Building on research issues and methodologies of anthropological archaeology and history, the multidisciplinary aspects of this field are introduced through field trips, projects, guest lectures, readings and classroom presentations. Prerequisite: ANTH 197 or HIST equivalent.

HIST 337. Practicum: Selected Topics in Local and Regional History. 3 credits. Offered as needed.
Selected historical topics relating to the Shenandoah Valley and surrounding region are studied in depth. Students will undertake primary research and collaborate on final project. See the e-campus for current classes. The course may be repeated when content changes. Prerequisite: GHIST 225.

HIST 338. Selected Themes in U.S. History. 3 credits. Offered as needed.
Selected themes are studied in depth. See e-campus for current classes. Course may be repeated when content changes.

HIST 340. Internship in History. 3 credits. Offered each fall, spring and summer.
Provides students with practical experience in using historical skills in a public or private agency. Periodic student reports and seminars required. This course may be repeated with permission of department head. Prerequisites: Junior or senior standing, HIST 385 and permission of the department head.

HIST 341. Selected Themes in World History. 3 credits. Offered as needed.
Selected themes are studied in depth. See e-campus for current classes. Course may be repeated when content changes.

HIST 350. Virginia. 3 credits. Offered each spring.
An interpretive survey of the history of Virginia from its Colonial beginnings to the present time.

HIST 355. Afro-American History to 1865. 3 credits. Offered each fall.
A survey of the experience and changing status of African-Americans in the United States from 1619 through the Civil War, with attention to the West African background, cultural developments, social and political movements, slavery and the slave trade, dual-consciousness, and emancipation.

HIST 356. Afro-American History Since 1865. 3 credits. Offered each spring.
A survey of the experience and changing status of African-Americans in the United States from Reconstruction to the present, emphasizing the strengthening of social and cultural institutions, Afro-American leadership; the impact of segregation; the Great Migration; labor, protest and cultural movements; pan-Africanism; the Civil Rights Movement; and contemporary issues.

HIST 360. Research Apprenticeship in History. 3 credits. Offered as needed.
Provides students with advanced research and writing opportunities. Student learning contract must be approved before a student can enroll. Periodic student reports and seminars required. Open to history majors only. Prerequisites: HIST 395.

HIST 361. Class and Ethnicity in Africa. 3 credits. Offered each fall.
An examination of the development of class and ethnicity in African societies. Attention is given to the pre-Colonial and Colonial periods, as well as to the effects of imperialism, development strategies and structural adjustment policies on class and ethnic relations in contemporary Africa.

HIST 371. India. 3 credits. Offered every other fall.
A survey of the history of the Indian subcontinent from antiquity to the present. The course stresses the arrival of Islam, the impact of Western colonization, the struggle for independence, and the problems and achievements of nationhood in the post-Colonial era.

HIST 375. History of Modern Southeast Asia. 3 credits. Offered every other fall.
A survey of Southeast Asian history from the 16th century to the present. Particular attention is given to European and American colonization of the region, the impact of the Japanese occupation, and the achievement of independence.

HIST 377. History of Korea. 3 credits. Offered every other fall.
A survey of Korean history from its earliest times to the present day. It is designed to develop an understanding in Korea, its historical tradition and the place of Korea in the larger narrative of East Asia and world history.

HIST 379. Family and Gender in East Asia. 3 credits. Offered every other spring.
This is a survey focusing on the ways families have been defined and gender roles assigned in China, Korea, Japan in pre-modern and modern times. Attention will be given to how the changing nature of family and gender have helped shape the historical evolution of these societies.
HIST 383. Early England. 3 credits. Offered each fall.
A survey of English history from the earliest times to the late 17th century. Particular attention is given to the rise of Parliament and the growth of limited monarchy.

HIST 384. England and the Empire-Commonwealth. 3 credits. Offered each spring.
A survey of English history from the late 17th century to the present. Particular attention is given to the growth of British democracy, the industrial revolution, and the rise and fall of the British Empire.

HIST 385. Russia to 1855. 3 credits. Offered each fall.
A survey of Russian history from the origins of the Russian state down through the reign of Nicholas I. Attention is given to such topics as the Kievan state, the Muscovite state, the rise of Imperial Russia and the emergence of Russia as a Western European power.

HIST 386. Russia Since 1855. 3 credits. Offered each spring.
A survey of Russian history from the reign of Alexander II to the present. Attention is given to such topics as the decline of Imperial Russia, the rise of the revolutionary movement, the emergence and consolidation of the Soviet state, and contemporary Russia.

HIST 387. Germany to 1871. 3 credits. Offered every other fall.
A survey of the German-speaking lands of Central Europe from the end of the Thirty Years War to the creation of the Second Reich. Emphasis is given to political, diplomatic and military affairs, although social, economic and cultural developments are included.

HIST 388. Germany Since 1871. 3 credits. Offered every other spring.
A survey of German history during the Second Reich, World War I, the Weimar Republic, the Third Reich and the post-World War II periods of Cold War and Detente. Emphasis is given to political, diplomatic and military affairs, although social, economic and cultural developments are included.

HIST 389. France to 1799. 3 credits. Offered every other fall.
A survey of French history from the Capetians to the end of the old Regime, 987-1799. Particular attention is given to France’s medieval heritage; the impact of the Renaissance; the Protestant revolt; the policies of Richelieu, Colbert and Louis XIV; and the background of the French Revolution.

HIST 390. France Since 1799. 3 credits. Offered every other spring.
A study of the social and political events which determined the course of French history from the Revolution through the Fifth Republic. Particular attention is given to the social, economic and cultural currents which have contributed to the making of contemporary France.

HIST 391. Travel Studies Seminar. 3 credits. Offered each fall, spring and summer.
Designed to encourage the student to augment the regular academic program through independent investigation including organized travel-study. Prearrangements must be made with a designated faculty member who will direct the study with preparatory instructions and final requirements. Prerequisite: Permission of the department head.

HIST 395. History Seminar. 3 credits. Offered each fall and spring.
A seminar to introduce history as an academic discipline and acquaint the student with the work of major historians and problems of historical interpretation. Students will be required to complete assignments designed to develop basic skills in historical research and writing. Open to all students, but required of history majors. Fulfills the College of Arts requirements.

HIST/ARTH 396. Introduction to Public History. 3 credits. Offered each fall.
An introduction to the varied and interdisciplinary “field” of public history—such as community/local history, historic preservation, archives, historical archaeology, museum studies, business and policy history, documentary editing and publishing, and documentary films—through readings, class discussions, occasional guest speakers and occasional field trips.

HIST 399. Special Studies in History. 3 credits. Offered each fall and spring.
Designed to give capable students in history an opportunity to complete independent study under faculty supervision. Prerequisite: Permission of the department head.

HIST 402. Workshop in Colonial American Life. 3 credits. Offered each summer.
A comparative study of life in 18th-century Virginia and Massachusetts. Colonial Massachusetts is studied through the use of printed materials, films and lectures. Published sources, lectures and a four-day study visit to Colonial Williamsburg are used for the study of Virginia. Supplemental fee required. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 403. Workshop in Civil War Virginia. 3 credits. Offered each summer.
This workshop examines the impact of the Civil War upon Virginia and its citizens. It explores the secession crisis, the revolution in firepower that forced changes in battlefield tactics and war aims, and the development of “hard war.” A four-day battlefield tour will reinforce ideas discussed in the classroom. Supplemental fee required. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST/ARTH 408. The Museum: Histories and Controversies. 3 credits. Offered every other spring as of spring 2007.
This seminar centers on art museums in the United States. Topics include the historical development of museums, related cultures of display, recent debates on institutional mission and responsibility, and contemporary artists who employ the museum as medium, subject matter or site. Required field trips. Prerequisite: GARTH 206 or permission of instructor.

HIST 411. Colonial America. 3 credits. Offered each fall.
An interpretive survey of England’s mainland colonies from 1588-1776. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 413. The Anglo-American Constitutional Tradition, 1603-1791. 3 credits. Offered every other spring.
Surveys Anglo-American political and constitutional traditions. Emphasizes the evolution of 17th- and 18th-century British constitutionalism, its transferal to the British North American colonies, and the development of the first national and state constitutions in the United States. Prerequisites: GHST 225 and HIST 395.

HIST 420. U.S. History, 1763-1800. 3 credits. Offered every other spring.
An interpretive study of the political, economic, social and cultural history of the United States from the French and Indian War through the Federalist period. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 422. U.S. History, 1789-1848. 3 credits. Offered every other spring.
An interpretive study of the political, economic, social, intellectual and cultural history of the United States from the ratification of the Constitution through the Mexican-American War. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 425. Civil War and Reconstruction. 3 credits. Offered each fall.
A study of the background, development, personalities and aftermath of the Civil War. Special attention is given to the coming of the war and different explanations of its causes and to the policies and significance of Reconstruction, with varying interpretations thereof. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 428. American Workers in the Industrial Age, 1877-1948. 3 credits. Offered every other fall.
This seminar examines what contemporaries called the Labor Problem, from the strikes of 1877 to the accord between GM and the UAW in 1948. It explores the impact of industrialization, race and gender, consumerism, the New Deal and two world wars on the lives of American workers and their unions.

HIST 430. The Gilded Age: U.S. History, 1877-1901. 3 credits. Offered every other spring.
An interpretive study of the United States from the conclusion of the Civil War until the assassination of William McKinley with special emphasis on industrialization, urbanization, western and overseas expansion, early reform movements, and politics. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.
HIST 431. Reform, World War and Prosperity: U.S. History, 1901-1929. 3 credits. Offered every other fall.
An interpretive study of U.S. history from the rise of Theodore Roosevelt through the 1920s. Emphasis is placed on the reform movements of the period and the problems and issues generated by the nation’s emergence as a world power and an industrial, urban society. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

An interpretive study of U.S. history from the onset of the Great Depression in 1929 through the inauguration of John Kennedy in 1961. Emphasis is given to the New Deal, World War II and the early years of the Cold War. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 433. Reform, Upheaval and Reaction: U.S. History Since 1961. 3 credits. Offered every other spring.
An interpretive study of U.S. history from the inauguration of John Kennedy in 1961 through the present. Emphasis is given to the Kennedy-Johnson administrations, Vietnam, the counterculture and student movement, Watergate, and the Reagan years. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 439. Selected Topics in American History. 3 credits. Offered as needed.
Selected topics are studied in depth. See e-campus for current topic. Course may be repeated for credit when content changes. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 445. Latin America and the United States. 3 credits. Offered every third semester.
An examination of the diplomatic relations between Latin America and the United States from the era of the Latin American revolutions for independence to the present. Emphasis is placed on the Monroe Doctrine and its extensions, as well as the development of the Pan-American system. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 446. Mexico, Central America and the Caribbean. 3 credits.
Offered every third semester.
A study of the nations of the area with special attention given to Mexico, Panama and Cuba. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 447. South America. 3 credits. Offered every third semester.
Historic development of the continent with special attention to selected nations since the early national period of the 19th century. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 450. Studies in Military History. 3 credits. Offered each spring.
A seminar addressing topics in U.S. or European military and naval history such as military operations, strategic theory, institutional evolution, the nature of modern war, technology and the warrior ethos, military-industrial-academic relations, and military ethics and the laws of war. Prerequisite: HIST 300 or HIST 301 depending on seminar topic offered.

HIST 453. Patterns of Global History. 3 credits. Offered every other fall.
This course introduces students to the literature, concepts, themes and methodology of global history, a subfield of history that seeks to compare experiences across regional, area, cultural and temporal boundaries, to look at cross-cultural interactions and to examine large-scale patterns that have shaped history on a global scale. Prerequisites: GHIST 101, GHIST 102 and HIST 395.

HIST 455. World Political and Social Thought to Early Modern Times. 3 credits. Offered every other spring.
A study of the most significant political and social ideas from around the world. Emphasis will be both on the classics and popular ideas from Western Asia, China, Greece, India, Rome, Japan and the developing states of Europe from ancient times through the 18th century. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 456. The Global Economy and Nationalism. 3 credits. Offered every other spring.
An examination of the global economy’s growth since the 14th century. The course investigates the emergence of capitalism, its relationship to modern nationalism, and the role that the concepts of development has played in the contemporary organization of nation-states from the perspective of world systems/dependency theory approaches. Prerequisites: GHIST 102 and HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 460. Modern Japan. 3 credits. Offered each spring.
The development of Japan from around the mid 19th century to the present. Attention is given to the collapse of isolation, the end of the Shogunate, the creation of a modern state, the years of party government, the rise of militarism, the Pacific war, the occupation and the new Japan. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 461. Marxism-Leninism in Global Affairs. 3 credits. Offered every other fall.
A study of the most significant ideas concerning politics, society, economics and philosophy, which shaped Communism and Marxist varieties of Socialism. Prerequisite: HIST 395 or permission of instructor.

HIST 462. The Rise and Fall of Nazi Germany, 1918-1945. 3 credits. Offered every other spring.
An advanced study of the period of Nazi domination in Germany covering the Weimar Republic, the rise of the NSDAP, the Third Reich and World War II. The nature of totalitarianism, the character of Adolph Hitler and the general Weltanschauung of Germany under the Third Reich are emphasized. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 463. Tudor-Stuart England. 3 credits. Offered every other spring.
A study of the economic, intellectual, political and religious development of the English people from 1485 to 1714, with special attention to the constitutional struggles of the 17th century. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 464. Renaissance and Reformation. 3 credits. Offered every other spring.
A study of High Medieval civilization as an introduction to the history of Modern Europe. Attention is given to the Italian and Northern Renaissance, fragmentation of Western Christendom, intellectual impact of Luther and Calvin on Western thought and structure of Tudor despotism in England. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 465. Twentieth-Century Britain. 3 credits. Offered every other spring.
An examination of the major themes of British history in the 20th century, with attention to political, social, economic, diplomatic and imperial topics from the pre-World War I through post-World War II decades. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 466. The Family, 1400-1800. 3 credits. Offered every other spring.
An examination of the bibliography, methods and substance of family history in Europe and America. Emphasis will be on sources, structure, patterns of change and continuity, and stages of family life to the Industrial Revolution. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 470. Modern Africa. 3 credits. Offered each spring.
Africa in the 20th century, with special emphasis on Senegal, Ivory Coast, Gold Coast (Ghana), Nigeria and Zaire. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.

HIST 472. Greece and Rome. 3 credits. Offered every other spring.
Advanced study of Greek and Roman history from the Minoans to the fall of the Roman Empire. Emphasis is given to political, military, social and cultural development of each civilization. Prerequisite: HIST 395. Instructor’s permission required to waive HIST 395 prerequisite for non-history majors.
HIST 473. The Islamic World. 3 credits. Offered every other spring.
The rise of Islam and spread of the Ottoman Empire. A survey of the Middle East from the pre-Islamic period to World War I. This course provides a background for understanding the present situation in the Middle East. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 474. The Byzantine Empire. 3 credits. Offered every other fall.
A survey of the political, economic, military and religious history of the Byzantine Empire, 330-1453. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 475. Modern Russia. 3 credits. Offered every other spring.
a study of Russia from the 1917 Revolution to the present. Readings and discussion will emphasize significant political, economic, social and cultural developments. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 476. Ancient History. 3 credits. Offered every other fall.
A survey of the rise and fall of ancient civilizations of the Near East and Mediterranean area. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 477. Medieval Europe. 3 credits. Offered each spring.
Attention is focused on Europe in the Middle Ages, with a concentration on social and intellectual aspects and the development of parliamentary institutions. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 478. Eastern Europe. 3 credits. Offered every other spring.
A study of the lands between Germany and Russia, from the Baltic to the Balkans. Emphasis is on the Hapsburg Empire and its successor states, the origins of the World Wars, the post-World War II communist governments and the cultural and intellectual contributions of the Eastern European people. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 479. Modern China. 3 credits. Offered each fall.
China since 1840, with special emphasis on China's response to the West, the disintegration of imperial China, the abortive experiments in republicanism, the origin and nature of Chinese Communism. China under Mao and post-Mao developments. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 480. Early Modern Europe: The New Worlds of Exploration and Science. 3 credits. Offered every other fall.
A study of the major changes in world view brought on by exploration and science in the 15th, 16th and 17th centuries in Europe. Attention is given to the causes, individuals and technology involved in each movement. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 481. Baroque and Revolutionary Europe, 1648-1815. 3 credits. Offered every other spring.
A study of the unfolding of European civilization from the Baroque through the Napoleonic era. Attention is given to the Old Regime and its institutions, the causes of popular revolts, the Enlightenment, the beginnings of industrialism and urbanism, and the impact of the French Revolution on Europe. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 482. Nineteenth-Century European Civilization, 1815-1914. 3 credits. Offered every other fall.
An interpretive study of European history from the Congress of Vienna to the outbreak of World War I. Particular attention is given to the intellectual climate of the period, with emphasis on liberalism, nationalism, socialism and nihilism. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 483. The Islamic World in the Greater Middle East. 3 credits. Offered every third semester as of fall 2006.
A comparative examination of colonialism focusing on the cultural and intellectual dimensions of colonial encounters. Lectures and readings will emphasize European strategies and techniques of rule in the Arab world (including North Africa), Iran and India. Research and writing assignments will allow for the consideration of American involvement in Palestine-Israel, Iraq and Afghanistan. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 484. Europe Since 1914. 3 credits. Offered every other spring.
An interpretive study of European history from World War I to the post-Cold War era, with special emphasis on the revolutions of 1917-1919, the rise of totalitarianism, the origins of World War II, the Cold War, and the continuing crisis of values. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 485. World History II. 3 credits. Offered every other fall.
An examination of the origins, conduct and immediate aftermath of World War II in Europe and Asia. Attention is given to Japan's Pacific War, Hitler's war in Europe and the ultimate victory of the Allies. The major military campaigns are discussed as are collaborations, resistance and the War Crimes Trials. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 486. The Holocaust in Global Context. 3 credits. Offered every other spring.
Introduces students to the most significant accomplishments and debates of recent Holocaust scholarship, emphasizing how historical memory of the Holocaust has been created and has evolved over time. Analyzes the historical causes and development of the Holocaust, as well as its cultural, political and scholarly resonance in the post-1945 world. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 487. Selected Topics in World History. 3 credits. Offered as needed.
Selected topics are studied in depth. See e-campus for current topic. Course may be repeated for credit when content changes. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST 488. The Holocaust in Global Context. 3 credits. Offered every other spring.
A seminar in the techniques of analyzing manuscript collections in order to create an edition of historical documents. Study will address the theory and practice of historical documentary editions, including selecting, transcribing, annotating, proofing, illustrating, indexing and publishing. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST/ANTH/ARTH 492. American Material Culture. 3 credits. Offered each spring.
A broad introduction to the multidisciplinary "field" of material culture studies through readings, written assignments, in-class exercises and field trips. The course introduces ways of looking at and learning from objects and examines how scholars from several disciplines have used material culture in their work. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST/ARTH 493. Historic Preservation. 3 credits. Offered each spring.
An introduction to the philosophy and techniques of historic preservation, guidelines for restoration, state and national register forms and procedures, historic architecture, structural analysis, restoration techniques, as well as the business aspects of historic preservation projects. Field trips are a major component of the course. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.

HIST/ARTH 494. Introduction to Museum Work. 3 credits. Offered each fall.
The practice and philosophy of museum work, including the areas of design, conservation, registration, education and administration. Subject is taught from the perspective of the museum profession and is applicable to diverse disciplines and types of collections. Prerequisite: HIST 395. Instructor's permission required to waive HIST 395 prerequisite for non-history majors.
HIST/ANTH 496. Research Thesis. 2 or 4 credits. Offered fall and spring.
Students will gather, analyze and interpret archaeological/historical data over two semesters. Students will work on a project that demonstrates theory, research design, data gathering and analysis, culminating in a written thesis. The course meets the capstone requirement for the historical archaeology minor but is also available to students in history and anthropology. Prerequisite: Junior or senior standing.

HIST 497. Genealogical Research and Family History. 3 credits. Offered every other fall.
Focus is on the methodology associated with genealogical research, the evaluation of sources, methods of documentation, the availability of online resources and the analysis of evidence. The course will require that those enrolled utilize local and state repositories and work with local research topics as well as with personal data. Personal genealogical information should be secured at home before the start of the semester.

HIST 498. Marshall Scholars Seminar. 3 credits. Offered each spring.
A research intensive seminar based on the manuscript collections and other primary sources of the Marshall Library. Students may choose any subject involving 20th-century diplomatic and military history and political affairs from 1900 to 1980 – the approximate dates of George C. Marshall’s public service. Prerequisites: HIST 395 and acceptance into the course prior to the beginning of the semester in which this course is taken.

HIST 499. Honors. 6 credits. Offered each fall and spring.
Year course. Prerequisite: HIST 395.

Hospitality and Tourism Management

College of Business

HTM 100. Hospitality and Tourism Management Seminar. 1 credit. Offered fall and spring.
A one-credit seminar course designed to expose students interested in hospitality and tourism management to current issues, trends, career opportunities and company profiles within the service industry.

HTM 250. Overview of Hospitality and Tourism Management. 3 credits. Offered fall and spring.
Exposes students to the areas of lodging, food and beverage, tourism and entertainment management, special events and meeting planning, and club and resort management. Emphasis is on hospitality industry scope, organization and economic impact; includes familiarization with industry terminology and individual and business contributors to the field of hospitality and tourism management.

HTM 251. Internship Preparation. 1 credit. Offered fall and spring.
A career search and skills development course. Special attention is given to the creation of effective resumes and business correspondence; developing and refining networking and interviewing skills; gaining practical experience in executing a job search; and developing leadership and managerial skills. Prerequisite: HTM 250.

HTM 261. Internship. 0 credits. Offered fall and spring.
Required 600 hours of approved hospitality and tourism work experience. P/F only. 0 credits. Must be completed prior to registering for HTM 461. All work sites must be approved. Prerequisite: HTM 251 or permission of the instructor.

HTM 271. Introduction to Foodservice Management. 1 credit. Offered fall and spring.
An introduction to food and beverage service procedures and techniques and intermediate level commercial food production. Attention is given to special events management. Prerequisite: HTM 250 or permission of the instructor.

HTM 298. Special Studies in Hospitality and Tourism Management. 3 credits. Offered fall and spring.
A special studies course designed to explore areas of current topical concern in the lodging, food and beverage, travel and tourism, and entertainment industries. Course content will vary. For course content consult your adviser. Prerequisites: Not an HTM major and permission of the instructor.

HTM 330. Hotel Operations and Hospitality Technology. 3 credits. Offered fall and spring.
An in-depth look at a full service hotel through the eyes of a general manager. The course will focus on operations, engineering, housekeeping, uniformed services, front office, reservations and revenue management. Different hospitality technology platforms and software programs will be used to expose students to hospitality technology. Prerequisites: HTM 250 and COB 300.

HTM 331. Hospitality Law. 3 credits. Offered fall and spring.
The course focuses on the application of the law to the hospitality and tourism industry including rights and obligations of guests and lodging, food service, club, event management and association operators. The identification of potential legal problems and formulation of preventive measures to limit/prevent liability are emphasized. Food service and beverage service certification included. Prerequisites: HTM 250 and COB 218. Corequisite or prerequisite: COB 300.

HTM 371. Culinary Arts. 3 credits. Offered fall and spring.
An application of basic food preparations for the restaurant industry. Focus is on preparing students to understand gastronomy and communicate with culinarians. Menu development, plate presentation, preparations methods, and flavor development and food service trends will be experienced. Lab fee applies. Prerequisites: HTM 250 and COB 300.

HTM/MKTG 386. Hospitality and Service Marketing. 3 credits. Offered fall and spring.
Application of marketing principles to the service sector, including the hospitality industry. The course focuses on review of customer demand for and assessment of services; the employee/customer interface; services operation management; review of services marketing mix; and development of marketing plans for service organizations. Prerequisite: COB 300.

HTM 400. Hospitality and Tourism Management Senior Seminar I. 1 credit. Offered fall and spring.
A discussion with hospitality industry leaders about the future of the industry and the opportunities that exist for young managers. The course will explore the challenges that young hospitality managers will face in the first three to five years after graduation and will help them cope with the transition. Guest speakers and industry management books will guide the learning. Prerequisites: HTM 461, COB 300 and senior standing.

HTM 412. Club and Resort Management. 3 credits. Offered fall and spring.
An application of business concepts to the private equity club and full service resort industry. Industry cases are used to facilitate discussion of similarities and differences among private equity clubs, full service resorts and other hospitality business in the areas of culture, asset management and operations. Prerequisite: Senior HTM status or instructor permission.

HTM 425. Hospitality Human Resources Management. 3 credits. Offered fall and spring.
Identification and exploration of the information needs of the HTM manager in making policy and personnel decisions. Different philosophies and processes for locating, attracting, hiring and training a qualified staff are examined. Emphasis is placed on the work environment within the service area. Prerequisites: COB 300 and senior standing.

HTM 431. Advanced Lodging. 3 credits. Offered fall and spring.
A senior capstone course designed to expose students to strategic issues concerning the lodging industry on a whole. The interactive course draws upon concepts from functional disciplines (i.e., marketing, finance, accounting and operations) in the diagnosis, analysis and resolution of complex lodging situations. Prerequisites: HTM 330 and senior status.

HTM 434. Purchasing, Cost Controls and Financial Management. 3 credits. Offered fall and spring.
This course applies purchasing, production and fundamentals of cost controls and financial management to the hospitality industry. Specifically it is an application of food, beverage, and labor cost controls and their deployment in an operations budget for a special event. Prerequisites: COB 300, senior HTM status and co-enrollment in HTM 470.
HRD 240. Introduction of Human Resource Development. 3 credits.
An introduction to the role and scope of human resource development with particular emphasis on required competencies for HRD professionals. Critical moral and ethical issues are introduced.

HRD 245. Leadership in Organizational Settings. 3 credits.
An examination of the principles of leadership and their application to group settings. Emphasis will be placed on the critical appraisal of the facets of leadership through the use of cases and readings.

HRD 270. Performance and Task Analysis in Human Resource Development. 3 credits.
This course is designed to provide the basic skill level for students in the area of occupational analysis and subsequent assessment. Particular emphasis is placed on actual analysis and assessment situations with application to program and curricular design.

HRD 290. Foundations of Instructional Design. 3 credits.
The purpose of this course is to apply instructional theory to the creation of instructionally sound education programs and materials. Prerequisites: HRD 240 and must be an HRD minor or major. Corequisite: HRD 370.

HRD 400. Occupational Internship. 3 credits
A structured occupational internship experience designed to provide students with the opportunity to observe within an actual occupational setting the role and scope of human resource development efforts. Minimum 400-hour experience approved by the program coordinator. Credit may not be earned for both HRD 400 and HRD 401.

HRD 470. Diversity and International HRD. 3 credits.
The course is designed to prepare students for meeting the challenges presented by globalization and workforce diversity in HRD. Topics explored include the impact of increasing globalization and diversity in HRD and the workplace, cross-cultural communications, conflict resolution in diversity settings, global diversity management, and cross-cultural leadership competencies. It examines and explores theories and techniques for dealing with institutional “isms” (e.g., multiculturalism, sexism, ageism and professionalism, etc.) as they relate to managing training, conflict resolution, career development, mentoring, performance improvement, team-building, and peer rating methods. Prerequisites: HRD 240 and HRD 245. Must be an HRD minor or major.

HRD 475. Seminar in Leadership. 3 credits.
Designed to provide senior level students with the opportunity to face some of the dilemmas of leadership. Students will be encouraged to critically examine leaders and organizations to draw from real events the ambiguities of leadership. Course will involve extensive reading, casework, and a range of guest speakers. Prerequisite: HRD 245.

HRD 480. Learning in Adulthood. 3 credits.
A study of the learning processes of the adult learner with an emphasis on adaptations of the instructional process to accommodate the differences inherent in the adult learning environment. Practical applications to actual adult learning situations are included.

HRD 485. Development of Materials and Programs. 3 credits.
This course is designed to provide the basic skills necessary to design and develop performance-based training programs and courses. Emphasis will be placed on the actual design and development of training materials.

HRD 490. Special Study in Human Resource Development. 1-3 credits.
Designed to provide in-depth and up-to-date exposure to the topics/issues pertinent to human resource development and allow students to explore topics of special interest in human resource development. Prerequisite: HRD 240 or permission of the instructor.

Individualized Study

College of Education

IS 200. Individualized Studies Major Program Development. 3 credits.
An introductory course designed to prepare students for transition into higher education programs. Specific content includes focusing a concentration, selecting an academic adviser, creating an individualized program, technology in higher education, accessing career resources, career decision making skills, self-awareness, life planning, identifying college level experiential learning, documenting experiential learning, determining a credit request and organizing a portfolio for assessment. Prerequisite: Individualized studies majors and individualized studies special students only.
Two or more upper-level students may elect to study cooperatively in a selected organization. A structured learning activity related to a student’s area of study and IS 498. Bachelor of Individualized Study Project. supervision of a faculty member in the appropriate academic unit.

In-depth study of selected topics with current importance and interest to lower division students that are not otherwise covered in the regular course offerings of academic departments/schools. Course content will vary. Prerequisites: Approval of the “Course Agreement Form” by the Individualized Study department head.

Designed to give students an opportunity to do lower-division independent study in selected interdisciplinary areas under the supervision of a faculty member in the appropriate academic unit. Prerequisite: Approval of the “Course Agreement Form” by the Individualized Study department head.

A structured learning activity related to a student’s area of study and sponsored by an employer, volunteer agency or other appropriate organization. Prerequisite: Approval of “Course Agreement Form” by the Individualized Study department head.

Two or more upper-level students may elect to study cooperatively in a selected area of current importance and interest under the supervision of a faculty member in the appropriate academic unit. Prerequisite: Approval of the “Course Agreement Form” by the Individualized Study department head.

Designed to give students an opportunity to do upper-division independent study in selected interdisciplinary areas under the supervision of a faculty member in the appropriate academic unit. Prerequisite: Approval of the “Course Agreement Form” by the Individualized Study department head.

An in-depth study of an interdisciplinary topic directly related to the student’s areas of concentration. A final oral report is required. Prerequisite: Approval of the “Course Agreement Form” by the Individualized Study department head.

Multiple-semester course. Prerequisite: Approval of the “Course Agreement Form” by the individualized study department head.

Integrated Science and Technology

Department of Integrated Science and Technology

First Year Student – Sophomore Sequence

ISAT 101. ISAT Freshman Seminar. 1 credit. Offered fall.

This seminar course will introduce the ISAT curriculum and career options to freshmen students and will describe how various elements of the curriculum and available ISAT elective sequences in each technology sector relate to the goals and objectives of the program. Prerequisite: Freshman standing at JMU.

GISAT 112. Environmental Issues in Science and Technology (2, 2). 4 credits. Offered fall and spring.

This course integrates the study of biology, chemistry and statistics within the context of environmental issues that include ozone depletion, acid rain, global warming, waste management and biodiversity.


This course introduces current topics in the life science technologies through lecture and laboratory exercises. Topics include advances in genetic engineering, the hierarchy of life and the rise of infectious diseases.

ISAT 131. Technology, Science and Society (1, 2). 3 credits. Offered spring.

This course introduces the social aspects of technology and science. It covers social science methods and related philosophical and ethical analyses. Students learn how the practice of science relates to the human-built world and why critical evaluations of science and technology policies are important.


This course introduces the student to science and the scientific method; introductory statistics and graphical data analysis with emphasis on using the computer for managing data and for empirical modeling; functions for modeling real-world systems; critical thinking skills for analyzing arguments involving data; project management. Corequisite: GISAT 112 or permission of instructor.


This course includes the use of calculus through differentiation and an introduction to integration in order to model continuous systems in the physical sciences, modeling of one and two-dimensional motion, use of the computer to numerically solve selected problems in mechanics. Prerequisite: GISAT 141 or permission of instructor.

GISAT 152. Analytical Methods II: Topics in Applied Physics for ISAT. 4 credits.

This course introduces topics in general physics including one- and two-dimensional motion, mechanics, energy, waves, electricity, magnetism, optics, lasers and early quantum theory. Vectors, differential and integral calculus, and differential equations are used to model physical system behavior. Laboratory experiments and computer exercises enhance understanding of the concepts. Prerequisite: GISAT 151 or permission of instructor.

GISAT 160. Problem Solving Applications in Science and Technology. 3 credits. Offered fall and spring.

This course examines issues in modern science and technology as a means to introduce, develop, and enhance critical thinking and problem solving skills. Current scientific and technological research and applications will be introduced to reinforce problem solving, instruction in systems thinking and critical inquiry. The course provides opportunities for using both oral and written communication in a variety of learning activities.

ISAT 180. Topics in Integrated Science and Technology. 1-4 credits. Offered fall and spring.

Special topics in integrated science and technology which are of interest to the entry-level student. May be repeated for credit when course content changes. Students should consult the instructor prior to enrolling for the course. Prerequisite: Permission of instructor.

ISAT 181. Student Research Report. 1-4 credits. Offered fall.

This course introduces the structure and function of a manufacturing enterprise, product design and process selection with emphasis on computer-based automation and integration technologies. Total Quality Management (TQM), statistical process control, principles of engineering drawings and engineering economy will also be covered. Prerequisite: GISAT 151 or consent of instructor.
ISAT 212. Energy Issues in Science and Technology (2, 2). 3 credits. Offered fall.
Introduction to scientific and economic concepts relevant to energy. Concepts are taught within the context of three or four themes, e.g., residential energy efficiency, renewable energy sources, “make-or-buy” fossil energy application and space power systems. Themes may change from year to year reflecting contemporary issues and opportunities to link with industry and government agencies. Prerequisite: ISAT 152 or consent of instructor.

ISAT 231. Political Economy of Technology and Science. 3 credits. Offered fall.
Solutions to human problems are mediated by economic and political institutions, which in turn help to shape technology and science. The course covers basic political and economic concepts, institutions and processes as they relate to American and international science and technology.

This course is a continuation of ISAT 142 with a focus on single-variable calculus (including an introduction to differential equations) to model systems involving work, energy, waves, electricity and magnetism. Applications are made to lasers and optics. Prerequisite: ISAT 142 or equivalent.

Use of formal logic to represent and assess properties of natural language constructs important to scientific inquiry, with application to the development and use of knowledge-based systems; introduction to procedural programming and its uses for producing and tailoring information systems supporting scientific, technical and business problem solving. Prerequisite: Sophomore standing or permission of instructor.

Fundamental nature of measurement in the practice of science, how and why measurements are taken and representative instrumentation. Data collection in science (measuring physical properties and biometrics), statistical tools for analyzing data and visualization of data. Prerequisite: ISAT 251 and ISAT 152.

Instrumentation is used to acquire data from representative systems that include mechanical, thermal, solar, chemical and nuclear energy. Students analyze the data to enhance understanding of these forms of energy. Energy transport processes are also characterized. Computer-based data acquisition is emphasized. Prerequisites: ISAT 212 and ISAT 253 or permission of instructor.

ISAT 280. Projects in Integrated Science and Technology. 1-4 credits. Offered fall and spring.
Projects or special topics in integrated science and technology, which are of interest to the lower division student. May be repeated for credit when course content changes. Projects or topics selected may dictate prerequisites. Students should consult the instructor prior to enrolling for the course. Prerequisite: Permission of instructor.

Junior – Senior Sequence

ISAT 301. Instrumentation and Measurement in Energy (0, 2). 1 credit. Offered fall.
Instrumentation is used to acquire data from representative systems that include mechanical, thermal, solar, chemical and nuclear energy. Students analyze the data to enhance understanding of these forms of energy. Energy transport processes are also characterized. Computer-based data acquisition is emphasized. Prerequisites: ISAT 212 and ISAT 253 or permission of instructor.

ISAT 302. Instrumentation and Measurement of the Environment (0, 2). 1 credit. Offered fall and spring.
Traditional and contemporary analytical laboratory and field techniques used in environmental quality monitoring are surveyed. Emphasis is placed on understanding the physical, chemical and biological basis of these techniques. Hands-on laboratory and field work will be emphasized, in addition to quality control/assurance of environmental data.

ISAT 303. Instrumentation and Measurement in Engineering and Manufacturing (0, 2). 1 credit. Offered spring.
Instrumentation is used to acquire data from representative systems that are relevant to modern manufacturing processes. Process control instrumentation is also studied. Topics include shop floor data collection, electronic sensors and actuators, pneumatics and hydraulics. Computer-based data acquisition is emphasized. Prerequisites: ISAT 211 and ISAT 253 or permission of instructor.

ISAT 305. Instrumentation and Measurement in Biotechnology (0, 2). 1 credit. Offered fall.
This course provides a hands-on experience of the techniques and instrumentation used in the modern biotechnology laboratory. Topics include aseptic techniques for establishing microbial cultures, detection and analysis of recombinant DNA molecules, protein purification, SDS gel electrophoresis and the use of PCR technology for genetic analysis.

ISAT 310. Energy Fundamentals I. 3 credits. Offered fall.
This course covers the integration of fundamental concepts from physics, chemistry, mathematics and engineering within the context of energy applications. Principles governing energy transformations, transport and conversion, including laws of thermodynamics, chemical and nuclear reactions, and thermal science. Prerequisite: ISAT 212 or consent of instructor.

ISAT 320. Fundamentals of Environmental Science and Technology I. 3 credits. Offered fall.
This course provides the student with a basic understanding of environmental pollution, processes and control technologies. The course begins with a review and extension of the basic sciences supporting environmental science. Water and wastewater quality, management, and treatment are then addressed, culminating in independent team projects in this area. Prerequisite: GISAT 112 or permission of instructor.

ISAT 321. Fundamentals of Environmental Science and Technology II. 3 credits. Offered spring.
This course continues to build on the student's basic understanding of environmental pollution, processes and control technologies. The course considers solid and hazardous waste and its management, discusses the principles of environmental risk assessment, and addresses air quality analysis and management, culminating in independent team projects in this area. Prerequisite: GISAT 112 or permission of instructor.

The course will introduce students to the various manufacturing systems within a manufacturing organization. The systems studied will be selected from the following areas: (a) manufacturing/production management – batch and continuous (b) resources utilization, (c) material management and (d) scheduling and inventory control. Prerequisites: ISAT 152 and ISAT 211 or permission of instructor.

ISAT 331. Automation in Manufacturing. 3 credits. Offered spring.
This course offers an in-depth treatment of the structure and function of computer integrated manufacturing processes; integration and automation in design and manufacturing; product and process design, computer-aided design and computer-aided manufacturing, process planning, robotics and flexible manufacturing systems; production planning and product data management. Prerequisites: ISAT 152 and ISAT 211 or permission of instructor.
ISAT 300. Software Development. 3 credits. Offered fall.
This course is an introduction to the processes, methods and techniques of efficient and effective software application development. Students will create or enhance software systems in a sophisticated development environment. Prerequisite: ISAT 252.

ISAT 341. Modeling and Simulation. 3 credits. Offered spring.
The development and use of models to understand, analyze and improve systems in several areas of science and technology. Students will use computer simulation in a variety of modeling projects. Prerequisites: Junior standing and ISAT 340 or CS 139 or permission of instructor.

ISAT/CSE 344. Intelligent Systems. 3 credits. Offered fall and spring.
In-depth introduction to current and future intelligent systems, including expert systems, neural networks, hybrid intelligent systems, and other intelligent system technologies and their development, uses and limitations. Prerequisites: Junior standing and ISAT 340 or CS 139.

ISAT/CSE 345. The Software Industry. 3 credits. Offered fall and spring.
Study of means for the development and maintenance of high quality software products delivered on time and within budget. Topics include requirements analysis and specification, software design, implementation, testing, maintenance, project management, ethics, and the responsibilities of software engineering professionals. Prerequisites: CS 139 or ISAT 340 and sophomore standing.

ISAT 348. The Multimedia Industry. 3 credits. Offered fall and spring.
Students are introduced to a variety of tools for viewing multimedia and to the issues in designing effective human-computer interactions. This includes an introduction to the many forms of media that occur in computing systems (text, graphics, images, sound, animation) and to the characteristics of well-produced media. Prerequisite: CS 139 or ISAT 340 or permission of the instructor.

ISAT 350. Biotechnology for the New Millennium I. 3 credits. Offered fall.
This course covers the scientific foundations and historical development of biotechnology. Specific topics include living system nanotechnology; cell structure and function; origins of genetic engineering; and recombinant DNA technology. Prerequisite: GISAT 113 or equivalent.

ISAT 351. Biotechnology for the New Millennium II. 3 credits. Offered spring.
This course is a continuation of ISAT 350 and describes applications of biotechnology in agriculture, industry and medical science as well as associated social, ethical and philosophical issues. Topics include study of an emerging infectious disease; energy transduction in living systems; and novel applications of biotechnology. Prerequisite: ISAT 350. Corequisite: ISAT 305.

ISAT 360. Fundamentals of Telecommunication. 3 credits. Offered fall.
An introduction to telecommunications systems, including principles of electromagnetism and electromagnetic waves, transmission media, encoding systems, and information theory; the social impacts of telecommunications systems and an overview of telecommunication policy and regulation; and the telecommunications industry sectors, major corporate players and regulatory agencies. Prerequisite: ISAT 152; PHYS 250 or permission of instructor.

ISAT 399. Instrumentation and Measurement in Telecommunications. 1 credit. Offered fall.
This course is designed to prepare students to safely and intelligently use laboratory and field instrumentation (with associated software) commonly encountered in the telecommunications field. The student will also be required to plan, design, build and present a semester project involving the use of principles learned in the course. Prerequisite: ISAT 152 or PHYS 250.

ISAT 401. Advanced Computer-Based Instrumentation I. 3 credits. Offered fall.
This is largely a laboratory course in which students build and program their own instruments. Topics include programming techniques for real-time instrumentation programming; buffered analog and digital input and output; timing considerations; passive analog filters and active analog filters; digital-filtering techniques; and real-time programming issues. Prerequisites: ISAT 283 and ISAT 262 or permission of instructor.

ISAT 402. Advanced Computer-Based Instrumentation II. 3 credits. Offered spring.
Students design and build their own instruments. Topics include representative sensor techniques as applied to physical, chemical and biological systems as well as basic and advanced circuits for signal manipulation: buffers, amplifiers and active and passive filters. An instrument design project is the capstone of the course. Prerequisites: ISAT 253 and ISAT 252 or the permission of the instructor.

ISAT 406. Transmission Electron Microscopy. 3 credits. Offered fall.
This practical laboratory course provides hands-on experience in the preparation and examination of biological specimens with the transmission electron microscope. Techniques to be mastered include support film preparation for negative staining of bacteria and viruses, fixation, embedding, and thin sectioning of tissues, electron optical alignment and microscope operation. Prerequisite: ISAT 253 or permission of instructor.

ISAT 410. Sustainable Energy Development. 3 credits. Offered spring.
This course is concerned with the science and the applications of solar and other renewable technologies, e.g., solar thermal electric, photovoltaics, wind power, biomass-derived alcohols, solar hydrogen and ocean thermal energy conversion. Energy storage systems and materials, combined renewable-conventional systems for peaking and load management and alternative energy sources for transportation will be studied. Prerequisite: ISAT 310 or permission of instructor.

ISAT 411. Energy Economics and Policy. 3 credits. Offered fall.
This course is concerned with methods for analyzing the economics, environmental and societal benefits of energy technologies. Topics include optimization techniques, utility planning and finance, cost-benefit techniques, discounting for time and risk, econometric models, and input-output analysis. The role of government in determining energy costs supply and markets will be considered. Prerequisite: ISAT 311 or permission of instructor.

ISAT 412. Dynamic Control of Energy Systems. 3 credits. Offered spring.
This course considers methods for developing dynamic models of energy processes and technologies to achieve improved process control and increased efficiency with applications of differential equations and discrete math equations. Dynamic models are used to evaluate load management strategies and to develop computer control algorithms for building energy systems. Prerequisite: ISAT 310 or consent of instructor.

ISAT 413. Options for Energy Efficiency. 3 credits. Offered fall.
This course makes detailed examination of new technologies to increase the efficiency of energy conversion, transportation systems and end-use technologies. Examples include MHD, combined-cycle systems, advanced nuclear reactors, intelligent transportation systems, high-efficiency lighting, energy management and utilization of low-temperature heat. Consideration is made of the socioeconomic and governmental barriers to energy efficiency. Prerequisites: ISAT 310 and ISAT 311 or consent of instructor.

ISAT 414. Energy Fundamentals II. 3 credits. Offered once a year.
Introduction to the sciences of fluid mechanics and heat transfer and the physical laws governing the mechanical behavior of liquids and gases. Conservation of mass, energy and momentum. Discussion of heat transfer by one-dimensional conduction, convection and radiation. Fluid statics, internal and external fluid flow. Pipe networks and heat exchanger analysis. Prerequisite: ISAT 310 or permission of instructor.

Study-abroad course examining international energy problems and providing team-oriented project experiences. Course addresses energy issues associated with economic and social development. Project participation, tours and meetings with local experts illustrate energy-related problems that are compared with those in the United States. Prerequisites: ISAT 212 and ISAT 253.
ISAT 420. Environmental Analysis and Modeling. 3 credits. Offered fall.
This course explores applications of mathematical techniques and computer models to the environmental field. The course introduces the principles underlying environmental analysis and modeling, including limitations and pitfalls. Several environmental models and analytical systems are then discussed and applied, using a variety of computational platforms. Prerequisite: ISAT 321 or permission of instructor.

ISAT 421. Environmental Policy and Regulation. 3 credits. Offered spring.
This course will familiarize students with basic environmental laws and regulations. The course discusses the purpose of environmental policy, the role of environmental economics in policy decisions and the policy instruments available to environmental regulators. Current federal and state statutes affecting waste disposal, air quality and water quality are discussed. Corequisite: ISAT 321 or permission of instructor.

ISAT 422. Environmental Management. 3 credits. Offered fall.
This course addresses environmental issues faced by industry, including such topics as waste management, chemical inventories, pollution prevention and discharge permitting. Industrial ecology is introduced as an approach to the development of a sustainable industrial society, including treatment of life cycle analysis, design for environment, environmentally conscious manufacturing and ISO14000.

ISAT 423. Environmental Remediation. 3 credits. Offered spring.
This course will examine chemical, physical, economic and regulatory aspects of the remediation of contaminated soil and groundwater. Topics include chemical properties of major contaminants, environmental site assessment, remediation design, and current and emerging remediation technologies and their limitations in soil and groundwater restoration. Prerequisites: ISAT 320 and ISAT 321 or permission of instructor.

ISAT 424. Natural Resource Management. 3 credits. Offered fall.
This course focuses on how resource management decisions affect the human and natural communities involved. Topics include definition and importance of natural resources, resource management styles and policies, and planning for resource conservation. Conservation biology is introduced as a tool for developing sustainable resource use policies. Mandatory weekend field trip. Prerequisites: ISAT 320 and ISAT 321 or permission of the instructor.

ISAT 425. Environmental Hydrology. 3 credits. Offered spring.
This course integrates the study of surface water and ground water hydrology and examines current technologies used to assess the behavior and quality of water in the environment. Topics include monitoring and management at the watershed level, the influence of wetlands on water quality, and the impact of current regulations. Prerequisite: ISAT 320 or permission of instructor.

ISAT 426. Environmental Information Systems. 3 credits. Offered summer.
This course provides students with practical experience applying advanced environmental informational systems technologies to environmental problems. Students will employ such technologies as decision support systems, geographic information systems, expert systems, relational databases, multimedia systems, and modeling and simulation. This course is often offered in a study-abroad format. Prerequisite: ISAT 320 or permission of instructor.

ISAT 427. Industrial Hygiene. 3 credits. Offered spring.
This course provides an introductory survey of the field of industrial hygiene. Chemical hazards are addressed first, focusing on respiratory and dermal exposures, followed by a treatment of physical hazards including sound, radiation and temperature. The course includes industrial case studies illustrating administrative and engineering controls in common use.

ISAT 428. Industrial Ecology. 3 credits. Offered summer.
Industrial ecology, the “science of sustainability,” seeks to encourage the development of a sustainable industrial society. This course introduces and examines this relatively new field of inquiry and practice. The course addresses various practical topics which are associated with industrial ecology, including life cycle assessment, design for environment and environmentally conscious manufacturing.

ISAT/GEOG 429. Sustainability: An Ecological Process. 3 credits.
Offered spring.
This course examines present global environmental impacts and efforts made to change production and consumption patterns toward those that reduce impact on ecosystems or promote increased ecosystem health. The focus lies in understanding the basic resources of productivity including soils, agricultural systems, agroforestry, forestry and aquatic environments and applying solutions on a personal and community level. Prerequisite: ISAT 320 or permission of instructor.

ISAT/MATS 430. Materials Science in Manufacturing. 3 credits.
Offered fall.
This course provides students with practical experience applying materials science to the manufacturing processes for metals, plastics and composites. Materials include metals, polymers, ceramics, composites and elastomers. Topics include physical, mechanical and electrical properties of materials, elements of strength of materials, failure criteria and materials selection. Prerequisites: ISAT 211 and ISAT 320 or permission of instructor.

ISAT/MATS 431. Manufacturing Processes. 3 credits. Offered spring.
This course provides an introduction to the processes used for fabricating parts, such as machining, grinding, and casting and sheet-metal fabrication, including both traditional and nontraditional processes. Topics include interaction of materials, processing and design, economics of manufacturing, design for improved processing. Manufacturing processes for metals, plastics and composites are addressed. Prerequisite: ISAT 430 or permission of instructor.

ISAT/MATS 432. Selection and Use of Engineering Materials. 3 credits. Offered fall.
This course deals with the interplay between engineering product specification, design, economics, environment, energy, materials selection, fabrication route, manufacturing cost and product service requirements. Students will be taught how to perform design projects that involve understanding the behavior of materials and selection of materials for a specific function. Prerequisite: ISAT 320 or permission of instructor.

ISAT 433. Selected Problems in Manufacturing. 3 credits. Offered fall.
This course addresses selected problems in manufacturing and their solutions. Materials, processes and systems will be stressed. Solutions may involve laboratory experiments and/or other analytical tools, such as modeling, system selection and evaluation, and process selection and improvement. Case studies and current projects from industry will be used. Prerequisite: ISAT 330 or permission of instructor.

ISAT 435. Integrated Product and Process Development. 3 credits. Offered spring.
This course focuses on the integrated approach for developing products simultaneously with manufacturing processes. Students learn about successful product development techniques and effective organization of product development teams. Topics include design for manufacturing, design for the environment, rapid prototyping, economies of product development and managing of development projects. Prerequisite: ISAT 331 or permission of instructor.

ISAT/MATS 436. Micro-Nanofabrication and Applications. 3 credits. Offered spring.
This course examines processes used in the manufacture of microelectronic devices (VLSI integrated circuits, optoelectronic devices, flat panel displays), microelectromechanical devices (micromotors, microactuators), data storage media (magnetic and optical disks, including CDs), optical fibers, and some sensors and transducers. Principles of operation of semiconductor and other devices are also studied. Prerequisite: ISAT 253, PHYS 150, PHYS 250 or permission of instructor.

ISAT 440. Seminar in Knowledge Management. 3 credits.
Offered fall and spring.
Philosophical, ethical, social and political issues in information and knowledge management, the information and knowledge management industries, and information and knowledge management systems. Prerequisite: Senior standing.
ISAT 450. Biotechnology and the Environment. 3 credits. Offered fall.
This course will examine the impact of biotechnology on the environment, biotechnology solutions to environmental challenges as well as associated regulatory, ethical and legal issues. Topics include bioremediation, biosensors, release of engineered organisms and risk assessment. Prerequisite: ISAT 320 or ISAT 350.

ISAT 451. Biotechnology in Industry and Agriculture. 3 credits. Offered fall and spring.
This course illustrates the applications of biotechnology in agriculture and industry, linking scientific discoveries to business and manufacturing practices. Topics include pharmaceutical product development, genetic engineering in agriculture, biotechnology in food processing and regulatory issues. Prerequisite: ISAT 330 or ISAT 350.

ISAT 452. Medical Biotechnology. 3 credits. Offered fall.
This course will survey the research development and implementation of select biomedical technologies, including genetic-based medical technologies, biomedical diagnostics, bioengineering at the macroscopic and microscopic levels, imaging technologies, lasers in medicine and relevant regulatory and legal issues. Prerequisite: ISAT 351 or permission of instructor.

ISAT 453. Energy and Living Systems. 3 credits. Offered spring.
The potential of living systems as alternative energy sources will be explored by describing energy production and transmission in the context of current and anticipated applications of biotechnology to energy production. Prerequisite: ISAT 310, ISAT 351 or permission of instructor.

ISAT 454. Computer Applications in Biotechnology. 3 credits. Offered fall and spring.
Students learn how complex biological molecules support and regulate processes in living systems through building interactive computer models of protein and nucleic acid structures. Other computer applications include image processing, genome data manipulation and NMR data processing. Written and oral presentations are also required. Prerequisite: ISAT 350 or permission of instructor.

ISAT 455. Regulatory Issues in Biotechnology. 3 credits. Offered fall.
This course examines the policies and guidelines of federal government agencies that regulate the use of recombinant DNA technology, genetically engineered organisms and the manufacturing of biotechnology products. Issues of product safety, product labeling, physical and biological containment, environmental release, and mammalian cloning are presented. Prerequisite: ISAT 350 or permission of instructor.

ISAT 456. Ethical, Legal and Social Implications of Biotechnology. 3 credits. Offered spring.
The ethical, legal and social implications of the field of biotechnology and its applications are explored in this course. Students will analyze at an in-depth level the social impacts and ethical implications of human subjects and biological materials research, cloning, human genetic engineering and transgenic agricultural crops. Prerequisites: ISAT 131 and ISAT 231 or permission of instructor.

ISAT 457. Business of Biotechnology. 3 credits. Offered fall and spring.
This course will discuss the business concepts behind the biotechnology industry. Specifically, students will learn how the industry was born, how product concepts are developed, and what the roles of intellectual property protection and regulatory issues play in the industry. Prerequisite: ISAT 350 or permission of the instructor.

ISAT/CS 460. Local Area Networks. 3 credits. Offered fall and spring.
An overview of LAN hardware, LAN topology and design, and LAN protocols. Installation and management of LAN operating systems and LAN services (address management, name management, file and print sharing, account management). Prerequisite: CS 360, CS 320 or equivalent. Formerly CS 451.

ISAT/CS 461. Internetworking. 3 credits. Offered spring.
Wide Area Network (WAN) and Metropolitan Area Network (MAN) design. Audio, voice, data and video transmission over ATM/B-ISDN networks. The SONET signal hierarchy and Q3 standard interface model. Network security. Performance analysis of a given network. Prerequisite: ISAT/CS 460.

ISAT/CS 462. Network Applications Development. 3 credits. Offered fall and spring.
Design and implementation of network-based applications using languages and architectures such as sockets, JAVA, TL1 and CORBA. Concepts in distributed processing, including synchronization of interprocess communication and management of replicated data. Analysis of performance issues related to distributed applications. Prerequisites: CS 239 or CIS 344 and ISAT/CS 460.

ISAT/CS 463. Network Analysis and Design. 3 credits. Offered spring.
In-depth introduction to the techniques and tools used to design and analyze computer and telecommunications networks. Overview of issues related to network performance, including the impact on cost, reliability and security. Prerequisites: CS 239 or ISAT 460 and ISAT 340 or equivalent.

ISAT/CS 464. Issues in the Telecommunications Business. 3 credits. Offered fall.
Addresses complex business concepts and issues in the telecommunications industry. Explores the interrelation of the economics of the telecommunications industry with ensuing social, ethical and security issues. Discusses topics in product and service creation, marketing, customer service and billing, and electronic commerce. Prerequisites: CIS 320, SMAD 356 and ISAT 340 or equivalent.

ISAT 471. Transportation: Energy, Environment and Society. 3 credits.
This course provides an overview of transportation’s role in energy demand, environmental change and economic development. Domestic and global transportation trends are compared and their impacts on fossil fuel consumption, air pollution, climate, ecosystems and social structure are analyzed. Contemporary technological, policy and behavioral solutions are critically examined with an emphasis on alternative fuels, advanced vehicle architectures and regulatory measures.

ISAT 472. Transportation: Air Quality Modeling and Regulation. 3 credits. Offered once a year.
This course introduces transportation as a CILOS (complex, large-scale, integrated, open system) that has bi-directional interactions with the social, political and economic aspects of society. Fundamental systems operation principles, institutions and regulations are explored with respect to environmental, energy, economic, land use and developmental issues. Building upon this foundation, students develop an understanding of regional planning and regulatory measures. They gain practical experience utilizing transportation and air quality models to quantify transportation impacts and to compare the effectiveness of various transportation control measures. Prerequisite: Junior standing.

ISAT 480. Selected Topics in Integrated Science and Technology. 1-4 credits. Offered fall and spring.
Topics in integrated science and technology which are of interest to the upper-division student but not otherwise covered in the regular course offerings. Offered only with the approval of the program coordinator. May be repeated for credit when course content changes. Students should consult the instructor prior to enrolling for the course. Prerequisite: Junior or senior standing required. Topic selected may dictate prerequisite.

ISAT 491, 492, 493. Senior Thesis. 6 credits. Offered fall and spring.
Three-course sequence. Student performs an independent research project, either alone or within an investigative team, to identify and analyze a technologically based problem, develop alternative solutions, recommend the best solution, and provide a written and oral technical report. ISAT 491 (one credit) is for project identification and proposal. ISAT 492 (two credits) and ISAT 493 (three credits) follow.

ISAT 499. Honors Thesis. 6 credits. Offered fall and spring.
Three-course sequence. Student performs an independent research project that meets the requirements set forth by the Honors program. Student must identify and analyze a technologically based problem, develop alternative solutions, recommend the best solution, and provide a written and oral technical report of the effort. May be taken in lieu of ISAT 491, ISAT 492, ISAT 493 sequence.
Interdisciplinary Liberal Studies

Cross Disciplinary Studies

IDLS 400. Seminar in Liberal Studies. 3 credits.
Capstone seminar for IDLS students in the humanities/social sciences content area. Students will apply different disciplinary perspectives to a single topic. Course requirements will emphasize superior written and oral communication skills and the integration and application of content area knowledge to the teaching environment. Prerequisites: Students must have completed their IDLS core requirements and be within one course of completing the track. Education minors should be in their third semester of their teacher education program.

Interdisciplinary Social Science

Cross Disciplinary Studies

ISS 300. Experiential/Service Applications. 3 credits.
Provides students with practical work experience through an internship, service learning program, etc. This experience culminates in the application of knowledge and skills emerging from previous courses. Prerequisite: Requires junior standing.

ISS 400. Senior Seminar in Social Science. 3 credits.
The course builds upon all previous course listings and serves as the final integrating experience providing closure to the interdisciplinary social sciences. Students are expected to integrate theories, research and/or methods from several social science disciplines to present a senior level research paper. The course will vary each semester according to the interests and specialization of the instructor(s).

ISS 200. Introduction to the Social Sciences. 3 credits.
The course serves as an introduction to the social sciences. It includes a review of the general content of selected social sciences with emphasis on primary foci, methods employed and perspectives guiding each disciplinary approach. The course will vary each semester according to the interests and specialization of the instructor(s).

ISS 331. Materials and Methods I. 3 credits. Offered fall and spring.
A lecture course introducing components and materials used in construction and building systems.

ISS 332. Materials and Methods II. 3 credits. Offered fall and spring.
The second lecture class in a required sequence focused on building systems and materials. Topics introduced in INDE 331 are studied in greater depth with an emphasis on understanding the interrelationships among elements found in a complete construction documents package. Prerequisite: INDE 331.

ISS 370. History of Interior Design. 3 credits. Offered fall and spring.
Survey of the evolution of design in interiors from ancient to modern times with emphasis on period and furniture styles and architectural backgrounds.

ISS/ART/ARTH/GRPH 389. Topics in Art, Art History, Graphic Design and Interior Design. 3 credits. Offering varies.
Study of selected topics in art, art history, graphic design or interior design at the intermediate level. May be repeated when course content changes. See e-campus for current topics. Prerequisite: GRPH 250 for graphic design topics.

Independent activity at the intermediate level, such as research or studio practice, under faculty supervision. Projected studies in any area of the school’s offering must be arranged with the instructors who will direct them. Offered only with the consent of the director. Prerequisite: GRPH 250 for GRPH 390.

ISS 401. Interior Design Studio V. 3 credits. Offered fall and spring.
An upper-level design studio building upon the design rigor and technical craft acquired in the INDE 301-302 sequence. Expansion of the design role into collaborative teams, interdisciplinary teams, actual clients, service projects and competition projects. Prerequisite: INDE 302.

ISS 402. Interior Design Studio VI. 3 credits. Offered fall and spring.
Final upper-level interior design studio culminating in a thesis project. Complete student initiative across every phase of the project. Prerequisite: ISS 401.

ISS/INDU 422. CAD II: Digital Design. 3 credits. Offered fall and spring.
An advanced studio course expanding computer-aided design knowledge. Continued exploration of the digital virtual space from intermediate to advanced concepts of the design process, communication with diverse design programs, animation, sound and digital transformation. Prerequisite: ISS 400.

INDE 201. Interior Design Studio I. 3 credits. Offered fall and spring.
Studio focusing upon the design process and creating interior spaces. Projects involve investigations into syntax and design language, program interpretation, ritual, use and the constructed order of built space. Emphasis is upon experimentation, risk and play. Design studies will incorporate drawing, diagramming, models and writing. Prerequisite: INDE 201.

INDE 202. Interior Design Studio II. 3 credits. Offered fall and spring.
Design studio building on the fundamentals of INDE 201. Projects will address both three-dimensional design of spaces and the objects within the spaces. Projects will include questions of ritual, ergonomics, material properties and full-scale prototypes. Introduction of workshop, digital graphics and photography incorporated in studio work. Prerequisite: INDE 201.

INDE 221. Architectural Graphics. 3 credits. Offered fall and spring.
Introduction to the tools and craft of the constructed drawing. Drawing types include plan, elevation, section, axonometric and perspective with emphasis upon synthesis and understanding of volumetric space. Media explorations used to increase sensitivity to materials, craft and precision of drawing.

INDE/INDU 222. CAD I: Digital Design. 3 credits. Offered fall and spring.
A studio course introducing computer-aided design experiences. Exploration of CAD, including terms, conventions and drawing techniques from beginning to intermediate concepts to two and three-dimensional tools and commands.

INDE 250. Portfolio Review. 0 credits. Offered spring.
Portfolio review required to enroll in interior design courses at 300 level and above. Prerequisite: INDE 201. Corequisite: INDE 202.

INDE 301. Interior Design Studio III. 3 credits. Offered fall and spring.
Intermediate design studio building upon skills of INDE 201-202 sequence. Projects will be of greater complexity, scope and technical requirement. Design studies will incorporate drawing, diagramming, models, digital studies and writing. Legal, industry and engineering requirements will be integrated into the learned poetics of design. Prerequisite: INDE 202.

INDE 302. Interior Design Studio IV. 3 credits. Offered fall and spring.
Intermediate design studio building upon skills of INDE 301. Projects will be an extension of INDE 301 but with greater complexity, scope and technical requirement. Design studies will incorporate drawing, diagramming, models, digital studies and writing. Legal, industry and engineering requirements will be integrated into the learned poetics of design. Prerequisite: INDE 301.

INDE/INDU 322. CAD II: Digital Design. 3 credits. Offered fall and spring.
An intermediate studio course incorporating computer-aided design experience in digital design. Continuation of CAD design processes from the foundation course toward advanced three-dimensional drawing techniques, solid modeling and rendering, lighting theory, plotting, and animation. Prerequisite: INDE 302.

INDE 331. Materials and Methods I. 3 credits. Offered fall and spring.
A lecture course introducing components and materials used in construction and building systems.

INDE 332. Materials and Methods II. 3 credits. Offered fall and spring.
The second lecture class in a required sequence focused on building systems and materials. Topics introduced in INDE 331 are studied in greater depth with an emphasis on understanding the interrelationships among elements found in a complete construction documents package. Prerequisite: INDE 331.

INDE 370. History of Interior Design. 3 credits. Offered fall and spring.
Survey of the evolution of design in interiors from ancient to modern times with emphasis on period and furniture styles and architectural backgrounds.

INDE/ART/ARTH/GRPH 389. Topics in Art, Art History, Graphic Design and Interior Design. 3 credits. Offering varies.
Study of selected topics in art, art history, graphic design or interior design at the intermediate level. May be repeated when course content changes. See e-campus for current topics. Prerequisite: GRPH 250 for graphic design topics.

Independent activity at the intermediate level, such as research or studio practice, under faculty supervision. Projected studies in any area of the school’s offering must be arranged with the instructors who will direct them. Offered only with the consent of the director. Prerequisite: GRPH 250 for GRPH 390.

INDE 401. Interior Design Studio V. 3 credits. Offered fall and spring.
An upper-level design studio building upon the design rigor and technical craft acquired in the INDE 301-302 sequence. Expansion of the design role into collaborative teams, interdisciplinary teams, actual clients, service projects and competition projects. Prerequisite: INDE 302.

INDE 402. Interior Design Studio VI. 3 credits. Offered fall and spring.
Final upper-level interior design studio culminating in a thesis project. Complete student initiative across every phase of the project. Prerequisite: INDE 401.

INDE/INDU 422. CAD II: Digital Design. 3 credits. Offered fall and spring.
An advanced studio course expanding computer-aided design knowledge. Continued exploration of the digital virtual space from intermediate to advanced concepts of the design process, communication with diverse design programs, animation, sound and digital transformation. Prerequisite: INDE 322.
INDE/ART/ARTH/GRPH 489. Topics in Art, Art History, Graphic Design and Interior Design. 3 credits. Offered fall and spring.
Study of selected topics in art, art history, graphic design or interior design at the advanced level. May be repeated when course content changes. See e-campus for current topics.

INDE/ART/ARTH/GRPH 490. Independent Studies in Art, Art History, Graphic Design or Interior Design. 1-3 credits, repeatable. Offered fall and spring.
Independent activity, such as research or studio practice under faculty supervision. Projected studies in any area of the school’s offering must be arranged with the instructors who will direct them. Offered only with consent of the director. Prerequisite: GRPH 250 for GRPH 490.

INDE 492. Professional Practices in Interior Design. 3 credits.
Offered fall and spring.
Procedures and practices involved in the interior design profession. Prerequisite: INDE 302.

INDE 495. Internship (0, 12). 3 credits. Offered fall and spring.
Actual working experience with a professional designer. Prerequisite: Permission of instructor.

International Affairs

College of Arts and Letters
INTA 295. Cross-National Research Skills. 4 credits.
Students learn how to conduct research from theory formulation through data collection and hypothesis testing in the field of international affairs. Special emphasis on research and computer literacy. Prerequisite: MATH 220.

INTA 489. Seminar in International Affairs. 4 credits.
This is the capstone course in the international affairs major. It provides an interdisciplinary overview of the fields within international affairs and an opportunity for students to complete individual research projects on international problems. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Completion of all courses in the core requirement of the major and senior standing.

International Business

College of Business
IBUS 298. Special Topics in International Business. 3 credits.
Offered fall, spring and summer.
The course is designed to allow exploration of current topics in international business. Course content will vary. See the program director for current content. Prerequisite: COB 300 and permission of the instructor.

IBUS 480. International Business Theory and Policy. 3 credits.
Offered fall and spring.
The course is designed to serve as an application of theory for business students to allow them to put the total picture of international business together. Prerequisites: Senior standing and permission of instructor.

IBUS 490. Special Studies in International Business. 1-3 credits.
Offered fall and spring.
Designed to give capable students in international business an opportunity to complete independent study under faculty supervision. Prerequisites: GPA of 2.8, recommendation of the instructor and approval of the director prior to registration.

IBUS 494. International Business Internship. 3 credits. Offered fall, spring and summer.
A course providing students an opportunity to work in and with an organization in order to gain insight into the practical side of modern international business operations. Prerequisites: IBUS major, completion of 65 credit hours and COB 300, GPA of 2.8 and approval of director of international business program prior to registration.

IBUS 498. Special Topics in International Business. 3 credits.
Offered fall and spring.
An advanced course designed to allow exploration of current topics in international business. Course content will vary. See the program director for current content. Prerequisite: COB 300 and permission of the instructor.

IBUS 499. Honors. 6 credits. Year course. Offered fall and spring.
See catalog description entitled “Graduation With Distinction” and “Graduation With Honors.”

International Liberal Studies

Division of Academic Affairs

ILS 290. Selected Topics in International Liberal Studies. 3 credits. Offering varies.
Directed exploration of the literature, history, contemporary life and general culture in London, Paris, Florence, Martinique, Salamanca and other international studies programs sponsored by JMU. Approved topics will vary.

Intercience Research

Departments of Biology, Chemistry, Geographic Science, Mathematics, Physics and Computer Science
ISCI 450 A, B, C. Intercience Research. 1-4 credits, repeatable to 6 credits.
An investigative experience spanning more than one field of science which may require supervision by multiple faculty members from different disciplines. Students must get prior approval for this course from each of the supervising faculty members and the department head of their program. Prerequisites: Junior status and permission of the instructors.

Italian

Department of Foreign Languages and Literatures
ITAL 101-102. Elementary Italian (4, 1). 4 credits each semester. Offered fall and spring.
The fundamentals of Italian through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour’s work a week in the language laboratory.

ITAL 111-212. Intensive Italian. 6 credits each term. Offered May and summer.
The fundamentals of Italian through listening, speaking, reading and writing. The first semester is the equivalent to ITAL 101-102 and the second is the equivalent to ITAL 211-212.

ITAL 231-232. Intermediate Italian. 3 credits each semester. Offered fall and spring.
A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college Italian or equivalent.

ITAL 300. Italian Grammar and Communication. 3 credits.
Offered fall and spring.
Intensive training in grammatical structures and their application to oral and written communication. Instruction is in Italian. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: ITAL 232.

ITAL 307. Italian Civilization. 3 credits. Offered fall and spring.
A study of Italian society, economics, politics and the arts from the Roman Republic to 1814. Prerequisite: ITAL 300.

ITAL/HIST 308. Contemporary Italian Civilization. 3 credits. Offered fall and spring.
A study of Italian society, economics, politics and the arts from 1814 to the present. Instruction in English. (Research papers for Italian majors/ minors in the language.)
ITAL 315. Italian Phonetics. 3 credits. Offered fall. Intensive drill in Italian sounds and intonation patterns. Instruction in Italian. Prerequisite: ITAL 232 or equivalent.

ITAL 320. Italian Oral and Written Communication. 3 credits. Offered fall and spring. Intensive training in the use of modern, everyday Italian with emphasis on conversation and composition. Readings in Italian will provide a context for discussion and writing. Prerequisite: ITAL 300.

ITAL 330. Business Italian. 3 credits. Offered fall and spring. A study of commercial and technical vocabulary and trade customs in conjunction with practice in the art of commercial communication, including interviews, letter writing and simultaneous interpretation. Instruction is in Italian. Prerequisite: ITAL 300.

ITAL 335. Introduction to Italian Literature. 3 credits. Offered fall and spring. A survey of Italian literature from its beginning to the present. Textual analysis of sample writings representative of the most important literary movements. Instruction is in Italian. Prerequisite: ITAL 300.

ITAL 351. Italian-English Technical/Commercial Translation. 3 credits. Offered fall and spring. Italian-English translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: ITAL 330 or permission of the instructor.

ITAL 375. Business and Society in Italy. 3 credits. Offered fall. This course studies Italian business, economy, politics and the influence the Italian society has on them. Prerequisite: ITAL 300.

ITAL 397. Creative Writing in Italian. 3 credits. Offered fall. This course will develop strategies both for writing well and for writing creatively. Another opportunity to practice speaking skills. Prerequisite: ITAL 300.

ITAL 400. Advanced Conversation. 3 credits. Offered fall. Discussions deal with topics of current interest. Prerequisite: ITAL 320.

ITAL 425. Modern Italian Literature. 3 credits. Offered fall and spring. A study of the works of major Italian writers of the 20th century. Instruction is in Italian. Prerequisite: Three years of college Italian or equivalent.

ITAL/ENG 437. Studies in Italian Literature. 3 credits. Offered fall and spring. A study of selected works of Italian literature. Instruction is in English. May be repeated for credit when course content changes. (Research papers for Italian majors/minors in the language).

ITAL 465. Italian Cinema. 3 credits. Offered fall and spring. A study of the evolution of Italian cinema. Emphasis given to the following directors: Rossellini, Visconti, De Sica, Fellini, Antonioni, Bertolucci, Wertmüller, Scola, Taviani, Salvatores. Instruction is in Italian. Prerequisite: Three years of college Italian or the equivalent.

Japanese

Department of Foreign Languages and Literatures

JAPN 101-102. Elementary Japanese. 4 credits each semester. Offered fall and spring. The fundamentals of Japanese through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour of work each week in the language laboratory.

JAPN 231-232. Intermediate Japanese. 3 credits each semester. Offered fall and spring. A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college Japanese or equivalent.

Justice Studies

Department of Justice Studies

JUST 100. Justice Studies Proseminar. 1 credit. Offered fall and spring. This course is designed to introduce students to the justice studies major by focusing on academic and career advisement. Topics will include: how to select a meaningful program of study, defining and pursuing advanced research projects, identifying and arranging internships, finding and using literature in justice related academic fields, and anticipating a career in justice related fields. Prerequisites: JUST 200 and admission to the justice studies major.

JUST 200. Introduction to Justice Studies. 3 credits. Offered fall and spring. This course offers students an introduction to the field of justice studies. It includes an examination of moral, philosophical and political definitions of justice and injustice and a history of their development; the distinctions and commonalities between various “kinds” of justice, e.g., criminal social, environmental; a discussion of classic and contemporary theorists and practitioners of justice and their impact on societal understanding of the concepts of justice and injustice. Prerequisites: Declaration of justice-preparation.

JUST 201. Justice Research Methods. 4 credits. Offered fall and spring. This course provides students with the tools necessary for conducting independent research in the area of justice studies. Both quantitative and qualitative methods are covered. A term project, in which the skills covered in the course are applied, is a significant part of the class. Prerequisites: JUST 200 and MATH 220.

JUST 210. Crime and Criminal Justice. 3 credits. Offered fall and spring. This course provides an introduction to the nature of the crime problem in the United States, including patterns of victimization and offending and the ways in which the criminal justice system responds to these behaviors. Prerequisites: JUST 200 and admission to the major.

JUST 212. Theories of Crime and Criminal Justice. 3 credits. Offered fall and spring. This course provides an in-depth exploration of theocritical perspectives pertaining to the two central realms of criminological inquiry: crime and the response to crime (criminal justice). Both classic and contemporary perspectives are examined. The course will examine why people commit crime, why crime occurs, why it differs across groups and the objective underlying crime control policy. Prerequisite: JUST 200.

JUST/PUAD 215. Introduction to Criminal Justice. 3 credits. Offered fall and spring. An introduction to the development of the American criminal justice system from early English beginnings to the present in its three dimensions: police, courts and corrections.

JUST 221. Social Justice Theories. 3 credits. Offered fall and spring. This course serves as a theoretical introduction to the social justice track of the justice studies major. It includes a review of the general content of selected social sciences with emphasis on primary foci, theoretical concepts and perspectives guiding each disciplinary approach. Special focus will be given to Western civilization and United States-specific understandings of social justice. Prerequisite: JUST 200.

JUST 222. Social Justice Interventions and Policies. 3 credits. Offered fall and spring. This class provides a review of the general structures of American social justice interventions and policies including governmental, corporate and not-for-profit organizations. Emphasis will be placed on macro-structures such as entitlement programs and micro-structures such as neighborhood and grassroots organizations. Prerequisite: JUST 200.

JUST 235. Justice in the Global Community. 3 credits. Offered fall and spring. This course offers an in-depth exploration of theoretical perspectives pertaining to the two central realms of criminological inquiry: crime and the response to crime (criminal justice). Both classic and contemporary perspectives are examined. The course will examine why people commit crime, why crime occurs, why it differs across groups and the objective underlying crime control policy. Prerequisite: JUST 200.

JUST 236. Justice in the Global Community. 3 credits. Offered fall and spring. This course offers an in-depth exploration of theoretical perspectives pertaining to the two central realms of criminological inquiry: crime and the response to crime (criminal justice). Both classic and contemporary perspectives are examined. The course will examine why people commit crime, why crime occurs, why it differs across groups and the objective underlying crime control policy. Prerequisite: JUST 200.

JUST 240. Social Justice Theories. 3 credits. Offered fall and spring. This course serves as a theoretical introduction to the social justice track of the justice studies major. It includes a review of the general content of selected social sciences with emphasis on primary foci, theoretical concepts and perspectives guiding each disciplinary approach. Special focus will be given to Western civilization and United States-specific understandings of social justice. Prerequisite: JUST 200.
JUST/PSYC 255. Abnormal Psychology for Law Enforcement Personnel. 3 credits. Offered fall and spring.
This course for students interested in becoming law enforcement professionals critically examines psychological normality and abnormality. The course focuses on description and causes of abnormal behavior likely to be encountered by law enforcement professionals and on intervention options for police officers. May not be taken by psychology majors or students who have completed PSYC 250 or PSYC 335. Prerequisites: GPSYC 101 and JUST 200.

JUST 300. Perspectives on Comparative Justice. 3 credits. Offered once every other year.
This course provides an overview of the various systems of justice existent in different cultures throughout the globe. The emphasis here is on legal systems and the ways in which they are used to promote – or not promote – justice. The course also includes a discussion of such topics as war, peace, terrorism, political and social oppression, and the ways in which these phenomena are either created by or ameliorated by justice systems. Prerequisites: JUST 200 and admission to the major.

JUST 301. Special Topics in Justice Studies. 3 credits. Offered once a year.
This course provides an examination of topics that are of current interest in the field of justice studies. The class may be repeated for credit when course content changes. Prerequisites: JUST 200 and admission to the major.

JUST/PSYC 314. Police Psychology. 3 credits. Offered once every other year.
This course explores the role of psychology in various aspects of police work and examines how psychological research and methods can assist police departments and police officers in reaching law-enforcement goals. Prerequisites: GPSYC 101 and JUST 200.

JUST/PSYC 316. Human Development and Crime. 3 credits. Offered once a year.
This course examines how psychological research and theory shed light on the development of criminal careers, the factors that protect children and adolescents from becoming criminals, how being a victim of crime influences well being, and the efficacy of rehabilitation. Special attention will be paid to the knowledge base on delinquency and childhood/adolescent victimization. Prerequisite: GPSYC 101.

JUST 322. Understanding Violence. 3 credits. Offered once a year.
This course examines violence in its many forms and provides a theoretical and conceptual foundation for understanding what it is, why it happens, and how it might be prevented or diminished. Structural, institutional and interpersonal forms of violence are examined as are theoretical perspectives focusing on the individual, socio-structural and cultural levels of explanation.

JUST 323. Comparative Criminal Justice. 3 credits.
A comparative study of criminal justice systems derived from the major world legal systems. The relevant background factors, government, laws, law enforcement, courts, corrections, youthful offenders are examined in each representative country studied. Multinational criminal justice organizations and special issues are addressed.

JUST/SOCI 325. Criminology. 3 credits. Offered fall and spring.
Study of the extent, causes and possible deterrents to crime including murder, assault, white-collar offenses and organized crime with attention to the role of the victim and policy implications.

JUST/SOCI 326. Victimology. 3 credits. Offered every two years.
This course provides an overview of various perspectives (social, psychology, legal, etc.) on the experience of victimization. Explanations of the phenomenon are discussed in the context of responses to various types of victimization.

JUST 327. Criminal Law. 3 credits.
Study of substantive criminal law including common law sources and elements of various criminal offenses, justifications and defenses.

JUST/POS C331. 3 credits. Offered once a year.
This course will explore the nature and value of human rights by investigating some major debates over their status and meaning and by examining some of the ways people have tried to secure human rights in practice. Prerequisites: JUST, POSC and INTA majors only. For JUST majors, the completion of JUST 235 is a prerequisite.

JUST/POS C332. Ethics and International Politics. 3 credits.
This course investigates the significance of ethical questions in the theory and practice of contemporary international politics, introducing a variety of normative approaches that shape the issues of peace and conflict, morality and justice in global affairs. Practical case studies will also be used to address issues of policy relevance, with particular attention paid to the American experience. Prerequisites: JUST, POSC and INTA majors only. For JUST majors, the completion of JUST 235 is a prerequisite.

JUST/POS C392. Peace Studies. 3 credits. Offered fall.
A study of the evolution, theory and practice of peace studies. The course focuses on how we wage and resolve conflict, how we affect social change, and how we provide for security through nonviolent means.

JUST 400. Senior Seminar in Justice Studies. 3 credits. Offered fall and spring.
This is the capstone course for the justice studies major. Students are expected to enter JUST 400 with a proposed area of study, and will spend the semester in developing a thesis. Class discussion and review of individual projects along with oral presentation of work are integral parts of the course. Students are expected to produce a piece of original scholarship related to their study in the major. Prerequisites: JUST 200, JUST 201, admission to the major and senior standing.

JUST 401. Internship in Justice Studies. 4 credits. Offered fall and spring.
This course allows students to receive academic credit for work experienced in an agency or organization related to the justice studies major. Students should consult the justice studies director for assistance in arranging approved internships. Prerequisites: JUST 200 and JUST 201. Successful completion of four additional justice studies courses.

JUST 402. Advanced Research in Justice Studies. 3 credits. Offered fall and spring.
This course is designed to give students a context in which to pursue advanced research in a justice studies context. It is especially appropriate for students interested in graduate study in the field. Prerequisites: JUST 200 and JUST 201. Successful completion of four additional justice studies courses.

Kinesiology

Department of Kinesiology

GKin 100. Lifetime Fitness and Wellness (2, 2). 3 credits. Offered fall and spring.
This course is designed to help students adopt and maintain the behaviors associated with an active and healthy lifestyle. Through this course students will learn the importance of maintaining wellness through a physically active lifestyle. Through lectures and labs, students study and develop the behavioral patterns consistent with the current knowledge base in fitness and wellness.

KIN 101. Adapted Activities in Kinesiology (0, 2). 1 credit. Offered fall and spring.
Designed for students with severe medical restrictions and is adapted to individual needs. May be taken credit/no credit only. Prerequisites: Recommendation of university physician and permission of the department head.
KIN 122-180. Basic Instruction Activities (0, 2). 1 credit. Offered fall and spring.
The following courses provide basic instruction in the activities listed: 122, Road Cycling; 123, Mountain Cycling; 124, Basic Rock Climbing and Experiential Activities; 125, Tennis; 126, Golf; 128, Fencing; 129, Badminton; 131, Basic Skiing or Snowboarding; 132, Bowling; 133, Racquetball; 139, Basic Paddle Sports: Canoeing or Kayaking; 140, Basic Swimming; 145, Strength Training and Cardiovascular Conditioning; 148, Jogging; 149, Group Fitness; 151, Swim Conditioning; 152, Lifesaving Life guarding; 156, Sk tutoring, and Cardiovascular Conditioning; 148, Jogging; 149, Group Fitness; 151, Swim Conditioning; 152, Lifesaving Life guarding; 156, Sk
KIN 333. Management in Sport, Recreation and Fitness Settings. 3 credits. Offered fall and spring.
This course is designed as an introduction to sport, fitness and recreation management. Students will examine a variety of management issues and opportunities in these areas.

KIN 334. Ethical and Legal Issues in Sport, Recreation and Leisure. 3 credits. Offered fall and spring.
This course is designed to introduce the students to current ethical and legal issues of concern to professionals in sport, recreation and leisure studies. Students will examine the impact of these issues on organizational and managerial policies and decision making.

KIN 353. Maximizing Sport Performance. 3 credits. Offered fall.
This course explores current sport psychology theories, models and concepts as they relate to sport behavior and performance. Students examine the theoretical basis of cognitive sport skills and apply the information to the sport environment.

KIN 355. Introduction to Driver Education. 3 credits.
An introduction to the task of the motor vehicle operator within the highway transportation system and factors that influence performance ability. Prerequisites: Junior standing and permission of the instructor.

KIN 407/HTH 441. Rehabilitative Biomechanics. 3 credits. Offered fall and spring.
This course will examine a variety of biomechanical concepts and applications as related to the health professions. Specific attention will be given to the biomechanical aspects of the musculoskeletal system. Prerequisite: BIO 290.

KIN 411. Measurement and Evaluation in Kinesiology. 3 credits. Offered fall and spring.
The administration and interpretation of measurement and evaluation procedures in kinesiology and recreation.

KIN 420. Exercise Programming for Special Populations. 3 credits. Offered spring.
This course will include an in-depth study of the recommended procedures for exercise testing and prescription for non-diseased special populations, children and youth, elderly, women and pregnant women. Corequisites: KIN 302 and KIN 302L.

This course will examine the principles of exercise testing and prescription as they apply to fitness, performance and health. The role-played by the health related components of fitness in performance and health of apparently healthy adults and special populations will be examined. This course must be taken concurrently with KIN 421L. Prerequisites: KIN 302 and 302L. Corequisite: KIN 421L.

KIN 421L. Principles of Exercise Testing and Prescriptions Laboratory. 1 credit. Offered fall.
This laboratory course is designed to complement and supplement the lecture course KIN 421. The course will focus on enhancing the student’s exercise testing skills and knowledge with particular attention to preparing the student for the Health/Fitness Instructor certification examination sponsored by the American College of Sports Medicine. The laboratory (KIN 421L) and lecture (KIN 421) portions must be taken concurrently. Prerequisites: KIN 302 and KIN 302L. Corequisite: KIN 421.

KIN 422. Fitness Programming & Leadership. 4 credits. Offered fall.
The course will focus on developing, promoting and leading health, fitness and wellness programs in a variety of settings. Students will apply their knowledge and skills by developing and leading a specific program of their choice. In addition, course content will include theories; principles and procedures involved with leading safe, effective individualized and group fitness activities. Prerequisites: GKin 100 or permission of the instructor, KIN 302 and KIN 302L. Corequisites: KIN 421 and KIN 421L.

KIN 425. Concepts of Strength and Conditioning. 2 credits. Offered fall and spring.
Theory and application of coaching concepts in strength/conditioning training including program design, testing and specific techniques for the physical development of athletes. Designed for students interested in working with athletic populations, this course also prepares students for NSCA certification. Prerequisites: KIN 100 and KIN 202.

KIN 426. Physical Activity Behaviors. 3 credits. Offered spring.
This course will focus on the theoretical and practical applications of behavior change related to healthy lifestyles with an emphasis on physical activity. In addition, course content will include a detailed investigation into the psychological and environmental factors associated with adoption and maintenance of healthy behaviors including a regular physical activity program. Prerequisite: Senior standing.

KIN 427. Fitness Management. 3 credits. Offered spring.
This course will focus on the management of fitness and wellness facilities in commercial, corporate, community, clinical and college settings. Students will design a fitness management portfolio that represents recent trends, theories and best practices. Prerequisites: KIN 302L and KIN 302L.

KIN 428. Advanced Topics in Exercise Science and Leadership. 3 credits. Offered spring.
This course is designed to allow students to study specific topics in exercise science and leadership. Topics will be chosen each semester and reflect current research in exercise science related to clinical exercise physiology, human performance and methodologies or trends in exercise science/leadership. May be repeated once (maximum six credits) for credit when course content changes. Prerequisites: KIN 302 and KIN 302L.

KIN 432. Introduction to Marketing in the Sport Industry. 3 credits. Offered fall and spring.
This course will introduce students to the application of basic principles of marketing and consumer behavior to the managed sport industry (i.e., professional sport, intercollegiate athletics, commercial fitness, sporting goods, etc.). This class will provide a foundation for students to engage in advanced work in marketing, consumer behavior, and related fields. Prerequisites: Kinesiology major, MKTG 280 and permission of instructor.

KIN 435. Sport Sales and Promotion. 3 credits. Offered fall and spring.
This course will examine how promotional activities and sales efforts are closely intertwined and impact upon the success or failure of the sport and leisure industry. Particular emphasis will be places on ticket sales and sport sponsorship. Prerequisite: SCOM 260.

KIN 436. Facilities Planning and Management in Sport and Recreation. 3 credits. Offered fall and spring.
A study of the skills necessary to be part of a facilities planning/management team.

KIN 450. Principles of Coaching. 3 credits. Offered spring.
Concepts, competencies and principles of coaching as they relate to sports in general. Includes the personal and professional responsibilities of a coach.

KIN 455. Methods in Driver Education (2, 2). 3 credits.
Analysis of the rules and regulations governing driver education in the Commonwealth of Virginia with application to program organization and administration, and the development and conduct of learning experiences in the classroom and laboratory. Prerequisites: Valid Virginia operator’s license and KIN 355.
KIN 471. Practicum in Exercise Science and Leadership. 3 credits. A sequence of selected practicum experiences in exercise science and leadership, which provide the student with supervised practicum experience. Formerly KIN 401A. Prerequisite or corequisite: KIN 302.

KIN 472. Practicum in Sport and Recreation Management. 3 credits. A sequence of selected practicum experiences which provides the student with supervised practicum experience in sport and recreation management. Formerly KIN 401B.

KIN 473. Practicum in Coaching. 3 credits. A sequence of selected practicum experiences in coaching, which provides the student with supervised practicum experience. Formerly KIN 401F.

KIN 474. Practicum in Sport Communications. 3 credits. A sequence of selected practicum experiences which provides the student with supervised practicum experience in sport communications. Formerly KIN 402B.

KIN 480. Student Teaching in Physical Education. 8 credits. Offered fall and spring. Enables students to apply skills and attitudes acquired in all teacher education components in a public school setting. Conducted under the guidance of an experienced teacher and university faculty in an elementary setting. Prerequisite: Acceptance to student teaching.

KIN 481. Internship in Exercise Science and Leadership. 8 credits. A full-time professional experience in exercise and leadership, which affords the opportunity to apply theory and methodology under qualified supervision from the cooperating agency and the university. Prerequisite: Successful completion of all professional courses. Formerly KIN 402A.

KIN 482. Internship in Sport and Recreation Management. 12 credits. A full-time professional experience which affords the opportunity to apply theory and methodology under qualified supervision from the cooperating agency and the university. Prerequisite: Successful completion of all professional courses. Formerly KIN 402A.

KIN 490. Special Studies in Kinesiology and Recreation. 1-3 credits each semester. Offered fall and spring. Designed to give superior students in kinesiology and recreation an opportunity to complete independent study and/or research under faculty supervision. Prerequisite: Permission of the department head.

KIN 499. Honors. 6 credits. Year course. Offered fall and spring.

Latin

Department of Foreign Languages and Literatures

LAT 101-102. Elementary Latin. 4 credits each semester. Offered fall and spring. An introductory course for students who intend to acquire only a reading knowledge of classical and medieval Latin. Systematic study of the fundamentals of grammar.

LAT 231-232. Intermediate Latin. 3 credits each semester. Offered fall and spring. An introduction to Latin literature. The further study of Latin grammar and the elements of Latin prosody are also presented. Prerequisite: One year of college Latin or equivalent.

Liberal Studies

Division of Academic Affairs

LS 310. The British Foundations of Modern Science. 3 credits. Fundamental principles from the modern sciences are surveyed by directed exploration of the work of British scientists who were pioneers in their fields. Excursions to historical sites and museums are linked to reading assignments. Prerequisite: Six hours of laboratory natural science credits.

Management

College of Business

MGT 305. Management and Organizational Behavior. 3 credits. Offered fall and spring. A study of management functions, decision processes and human behavior in business organizations. Ethical and political considerations are addressed, as are behavioral science research and its applicability to understanding organizational behavior. Prerequisites: Junior standing (56 hours) and a cumulative 2.0 grade point average in all courses taken at JMU. Open only to non-business majors.

MGT 365. Human Resource Management. 3 credits. Offered fall and spring. A study of employer-employee relationships in business and industry including personnel policies and methods; selection, placement, training and promotion of employees; and recent trends in employment practices. Prerequisite: COB 300 or PUAD major (or minor), having completed PUAD 285.

MGT/MS 370. Quality Management. 3 credits. Offered fall and spring. An introduction to the management of quality in organizations. Topics include statistical quality control, the design of quality management systems, implementation, measurement and management issues in quality programs. Prerequisites: COB 300 and junior standing.

MGT 372. Entrepreneurship. 3 credits. Offered fall and spring. A survey of the field of entrepreneurship and entrepreneurs and their significance in the American free enterprise system. Emphasis will be on exploring the theoretical framework of the entrepreneurship process and the entrepreneurial personality. Prerequisite: COB 300.

MGT 390. Organizational Behavior. 3 credits. Offered fall and spring. This course examines the determinants of work behavior in organizations. Topics to be covered include individual differences, work motivation, leadership, and work values and attitudes. Issues of measurement, survey use and managerial application will be emphasized.

MGT 410. International Management. 3 credits. Offered fall and spring. A comparative analysis of management styles and organizational effectiveness across cultural boundaries and within other political, legal and economic environments. Prerequisite: COB 300.

MGT 420. Management of Technology and Innovation. 3 credits. Offered fall and spring. This course will focus on the management of technology and innovation through an examination of technology transfer across industries, the evolution of technology, technology strategy, the innovation process within an organization, and the management of research and development. The importance of product champions, lead-users and cross-functional teams is emphasized. Prerequisites: COB 300 and senior standing (90 hours).

MGT 425. Project Management. 3 credits. Offered fall and spring. This course focuses on different techniques for managing many types of projects. The course addresses a variety of project management issues such as project prioritization, the use of management tools and techniques to plan and schedule projects, the role of the project manager, maximizing project team performance and management of complex projects. Prerequisites: COB 300 and senior standing (90 hours).

MGT 430. Team Management. 3 credits. Offered once a year. This course focuses on the effective use of teams as vehicles for accomplishing organizational work (e.g., solving complex problems). The course addresses a variety of team management issues such as designing and structuring work teams and reward systems, diagnosing team functioning and process problems, resources utilization planning and interventions for improving team performance. Prerequisite: Senior standing (90 hours).
MGT 450. Management and Creativity. 3 credits. Offered fall and spring. Students will become aware of and develop their own creative potential while addressing the problems associated with building creative organizations and managing creative employees. Prerequisite: Senior standing.

MGT 460. Government Regulations and Human Resource Management. 3 credits. Offered once a year. Course provides student with an overview of federal regulations and court decisions, which affect employment, employee/management relations, compensation, benefits, safety and health. Explores impact of regulations on general business operations. Prerequisite: MGT 365.

MGT 462. Compensation and Benefits. 3 credits. Offered once a year. Compensation and benefit theories, planning and legislation. Topics include job analysis, job evaluation, conducting wage surveys and administration of benefit plans. Prerequisite: MGT 365.

MGT 463. Labor Relations. 3 credits. Offered once a year. An examination of the field of labor relations including the evolution of the labor movement, the structure of unions, public labor policy and the emergence of public sector bargaining. Prerequisite: MGT 365.

MGT 464. Industrial Psychology. 3 credits. Offered every two years. Motivation of workers, leadership, work groups; measurement of job performance and job satisfaction. Prerequisites: COB 300 and COB 191.

MGT 465. Senior Seminar in Human Resource Management. 3 credits. Offered every two years. A study of advanced personnel management theory and techniques. Topics include development and implementation of policy and procedures; new techniques in planning, administration and evaluation of human resources management in organizations; and research problems. Prerequisites: Senior standing, MGT 365 and at least nine hours from MGT 460, MGT 462, MGT 463, MGT 464, MGT 466, MGT 467 or MGT 468, or permission of the instructor.

MGT 466. Employee Training and Development. 3 credits. Offered once a year. A study of training and development of human resources in organizations. Topics include design, development and evaluation of programs; adult learners; adult development; and career development programs in organizations. Prerequisite: MGT 365.

MGT 467. Human Resource Planning and Strategy. 3 credits. Offered once a year. Study of human resource management from a macro organizational perspective. Emphasizes the role of the human resource manager as a strategic partner in organizational planning. Topics include environmental analysis, forecast techniques, human resource strategies and implementation programs. Prerequisite: MGT 365.

MGT 468. Staffing. 3 credits. Offered once a year. A study of the selection of human resources in organizations. Topics include internal and external recruitment, internal and external selection and testing. Prerequisite: MGT 365.

MGT 472. Venture Creation. 3 credits. Offered every three years. The formulation, financing and operation of new ventures by individual entrepreneurs and entrepreneurial teams will be explored. The course will include a group term project designed to give the students clinical experience in the venture creation process. Prerequisites: COB 300 and MGT 372 or permission of the instructor.

MGT 480. Organization Theory. 3 credits. Offered fall and spring. Examines the theory and research underlying the design of complex organizations. Takes a macro approach to the study of organizations, placing particular emphasis upon the interaction between an organization and its environment and the impact that the environment has on organizational design, structure and processes. Prerequisites: COB 300 and senior standing (90 hours).

MGT 481. Negotiation Behavior. 3 credits. Offered every two years. An overview of negotiation as an effective conflict management device. The process of negotiation is examined in terms of how it affects disputants, the associated social structure and the encompassing system as a whole. Prerequisite: Senior standing (90 hours).

MGT 488. Experiences in Organizational Behavior. 3 credits. Offered every three years. This course offers the student the in-depth study of such variables as motivation, leadership, planning, and control and management of conflict and change. These variables will be studied through the use of in-class experiential exercises. Prerequisites: COB 300 and senior standing (90 hours).

MGT 490. Special Studies in Management. 1-3 credits. Offered fall and spring. Designed to give capable students in management an opportunity to complete independent study under faculty supervision. Prerequisites: Management major and senior standing (90 hours); recommendation of the instructor and written permission of the director prior to registration.

MGT 494. Management Internship. 3 credits. Offered fall and spring. A course providing an opportunity to work in and with local industry to gain insight into the real side of modern management. Prerequisites: Management major and senior standing (90 hours); recommendation of the instructor and written permission of the program director prior to registration.

MGT 495. Human Resources Internship. 3 credits. Offered fall and spring. Internship in the area of human resource management as a generalist or in a specific area. Prerequisites: MGT 365, Management major and senior standing (90 hours); recommendation of the instructor and written permission of the program director prior to registration.

MGT 498. Special Topics in Management. 3 credits for each course. Offered according to course availability. This course is designed to allow explorations of areas of current topical concern or to exploit special situations. Course content will vary. For current course content consult your adviser. Prerequisite: Permission of the instructor.

MGT 499. Honors. 6 credits. Offered fall and spring. Year course.

Marketing

College of Business

MKTG/CIS 370. Electronic Commerce. 3 credits. Offered fall and spring. This course examines commercial opportunities created by information technology. It studies the enabling technology infrastructure and its application to fundamental business processes and strategies in pursuing electronic commerce initiatives. Prerequisite: COB 300 or permission of instructor.

MKTG 380. Principles of Marketing. 3 credits. Offered fall and spring. Deals with fundamentals involved in the marketing process; concerned with the functions, institutions and channels used to distribute goods and services from producer to consumer. Prerequisites: Junior standing (56 hours) and a cumulative 2.0 grade point average in all courses taken at JMU.

MKTG 382. Database Marketing. 3 credits. Offered fall and spring. This course focuses on the use of information technology for market segmentation and customer profiling for targeted marketing strategies. Students are introduced to internal database marketing systems, then learn how to create market databases, collect, analyze and report data using database management software. Students also use market databases, statistical application software and hypothesis testing to conduct basic and inferential data analyses and evaluate alternative segmentation and targeting strategies. Prerequisites: COB 300 and admission to the marketing major.
MKTG 385. Buyer Behavior. 3 credits. Offered fall and spring.
Deals with the behavioral science concepts of individual and group behavior of consumers and industrial buyers. Stress the application of buyer behavior research to marketing management. Prerequisite: MKTG 380 or COB 300.

MKTG/HTM 386. Hospitality and Services Marketing. 3 credits.
Offered once a year.
Application of marketing principles to the services sector, including the hospitality industry. The course focuses on review of customer demand for and assessment of services; the employee/customer interface; services operation management; review of the services marketing mix; and development of marketing plans for service organizations. Prerequisite: COB 300.

MKTG 388. Retail Marketing. 3 credits. Offered fall and spring.
Study of the institutions of retailing, retailing research, selection of store location and layout, retail organizational structure, and merchandise planning and management. Retail store image, promotion, retail pricing, retail strategy and retail trends will be evaluated. Prerequisite: COB 300 or MKTG 380.

MKTG 391. Merchandising. 3 credits. Offered fall and spring.
To develop an understanding of the merchandising industry as a major segment of the global economy, including the history and growth of the retail/apparel industry. To understand the marketing of consumer goods, the market centers and global sourcing. Prerequisite: COB 300 or MKTG 380.

MKTG 392. Analysis of Merchandise. 3 credits. Offered fall and spring.
To understand the manufacturing process of consumer goods, to evaluate the quality of consumer products and to have knowledge of material/textile composition of soft and hard retail goods. Prerequisite: COB 300 or MKTG 380.

MKTG 394. Buying Decisions. 3 credits. Offered fall and spring.
Deals with the fundamentals involved with retail buying, including policies, terminology, knowledge of markups, markdowns, inventory and stock turn, vendor negotiation, and pricing for profit. The student will apply mathematical formulas to create useful spreadsheets to understand and make profitable decisions. Prerequisite: COB 300 or MKTG 380.

MKTG 405. Survey Research. 3 credits. Offered fall and spring.
This course covers the techniques and principles, skills and activities that are required to conduct an effective survey project. The course will cover survey planning, survey methods, sampling, survey instrument design, data collection and analysis, and survey reporting. Survey findings are linked to future marketing decision making. Prerequisites: COB 300, MKTG 382 and MKTG 385.

MKTG 420. Data Mining. 3 credits. Offered once a year.
Examines database applications by which marketers can build a long-term, interactive relationship between their product/service and their customers. Study of the information-driven marketing process that enables marketers to develop, test, implement, measure and modify customized marketing programs and strategies. Prerequisites: COB 300 and MKTG 392.

MKTG 430. Professional Selling. 3 credits. Offered fall and spring.
Provides an understanding of many aspects of professional selling including preparing for selling, selling techniques and the role of selling in our society. Prerequisite: MKTG 380 or COB 300.

MKTG 450. Business Marketing. 3 credits. Offered fall and spring.
An analysis of the policies and procedures in marketing to business buyers. The course provides emphasis on special problems connected with the segmentation and target marketing, purchase, distribution, promotion and development of business-to-business goods and services. Prerequisite: COB 300.

MKTG 460. Global Marketing. 3 credits. Offered fall and spring.
Examines marketing in international environments, including foreign entry, local marketing in individual countries and global or standardized marketing across many countries. Emphasis is placed on cultural, economic and strategic variables in deciding how to enter and compete in various markets. Prerequisite: COB 300.

MKTG 470. Strategic Internet Marketing. 3 credits. Offered fall and spring.
Studies the culture and demographics of the Internet and examines online business strategies. Students will learn the hardware and software tools necessary for Internet commerce, identify appropriate target segments, develop product opportunities, pricing structures and distribution channels over the Internet, and execute marketing strategy in computer mediated environments. Prerequisite: COB 300 or permission of instructor.

MKTG 480. Product Development and Management.
3 credits. Offered fall and spring.
The process of developing new products will be developed and explored. The marketing tasks which are unique to this operation will be investigated. An understanding of the marketing management of products throughout their life cycles will complete the course. Prerequisite: COB 300 and MKTG 382.

MKTG 484. Integrated Marketing Communications. 3 credits. Offered fall and spring.
Integrated marketing communications includes advertising, sales promotions, packaging, public relations, publicity, personal selling, direct marketing and event sponsorship. Student will be involved in creating, planning, implementing and evaluating client-oriented projects by developing integrated marketing communication campaign. Prerequisites: COB 300, MKTG 385 and admission to the marketing major.

MKTG 485. Marketing Management. 3 credits. Offered fall and spring.
Case studies are used to develop analytical and decision-making skills. Knowledge gained from previous course work is applied to actual circumstances faced by marketing managers in private, public, profit and not-for-profit organizations. Extensive preparation of case materials outside of class provides the basis for case presentations and discussion of case situations in class. Prerequisites: COB 300, MKTG 382, MKTG 385 and senior standing.

MKTG 490. Special Studies in Marketing. 1-3 credits. Offered fall and spring.
Designed to give capable students in marketing an opportunity to complete independent study under faculty supervision. Prerequisites: GPA of 2.80, recommendation of the instructor and approval by the director prior to registration.

MKTG 494. Marketing Internship. 3-6 credits. Offered fall and spring.
A course providing an opportunity to work in and deal with local industry to gain insight into the real side of modern business. Prerequisites: COB 300 or MKTG 380, senior standing, recommendation of the internship coordinator and approval of the director prior to registration.

MKTG 498. Special Topics in Marketing. 3 credits. Offered fall and spring.
This course is designed to allow explorations of areas of current topical concern or to exploit special situations. Course content will vary. For current course content consult your adviser. Prerequisite: Permission of the instructor.

MKTG 499. Honors. 6 credits. Offered fall and spring.
Year course.

Materials Science

Center for Materials Science

MATS/CHEM/PHYS 275. An Introduction to Materials Science. 3 credits. Offered fall.
An introduction to materials science with emphasis on general properties of materials. Topics will include crystal structure, extended and point defects, and mechanical, electrical, thermal and magnetic properties of metals, ceramics, electronic materials, composites and organic materials. Prerequisite: CHEM 131, PHYS 150, PHYS 250, ISAT 212 or permission of the instructor.
MATS PHYS 337. Solid State Physics. 3 credits. Offered spring every other year.
A study of the forces between atoms, crystal structure, lattice vibrations and thermal properties of solids, free electron theory of metals, band theory of solids, semiconductors, and dielectrics. Prerequisite: PHYS 270 or consent of the instructor.

MATS PHYS 381. Materials Characterization (Lecture/Lab Course). 3 credits. Offered spring.
A review of the common analytical techniques used in materials science related industries today, including the evaluation of electrical, optical, structural and mechanical properties. Typical techniques may include Hall Effect, scanning probe microscopy, scanning electron microscopy, ellipsometry and x-ray diffraction. Prerequisite: MATS/PHYS 275, MATS/ISAT 431 or MATS/GEOL 395.

MATS 382. Materials Microfabrication Laboratory. 3 credits.
Offered on demand.
A materials processing course that examines the design and fabrication of micro- and nano-devices using standard technologies and new lithography techniques. Topics will include laboratory safety and protocol, substrate cleaning, thermal oxidation, photolithography, diffusion, metallization, process integration, and device testing. Prerequisite: MATS 381 or permission of instructor.

MATS GEOL 395. Geologic Perspectives in Materials Science. 3 credits. Offered on demand.
A one-semester course which emphasizes the commonalities between the geological sciences and materials science. Course includes topics from mineralogy, crystallography, petrology and structural geology, which are also important in metallurgy and ceramics. Prerequisites: An introductory course in any physical science or integrated science and technology (i.e., GEOL 110, CHEM 131, PHYS 140 or GEISAT 141) and at least one additional advanced course in the major.

MATS GEOL 396. X-ray Characterization of Solid Materials. 3 credits. Offered spring every other year.
Covers fundamental principles and theory behind two powerful, X-ray based, technologies: X-ray Diffraction and Energy Dispersive Analysis of X-rays (EDS). Students will collect and analyze data from a single crystal Gandolfi X-ray camera, automated powder diffraction system (focusing goniometer), and EDAX system (EDS). Prerequisite: GEOL 280, MATS/CHYM/PHYS 275 or ISAT 300.

MATS ISAT 430. Materials Science in Manufacturing. 3 credits. Offered fall.
This course is the study of engineering materials used in the fabrication of products including metals, polymers, ceramics, composites and elastomers. Topics include physical, mechanical and electrical properties of materials, elements of strength of materials, failure criteria, and materials selection. Prerequisites: ISAT 211 and ISAT 142 or permission of the instructor.

MATS ISAT 431. Manufacturing Processes. 3 credits. Offered spring.
This course provides an introduction to the processes used for fabricating parts, such as machining, grinding, and casting and sheet-metal fabrication, including both traditional and nontraditional processes. Topics include interaction of materials, processing and design, economics of manufacturing, design for improved processing. Manufacturing processes for metals, plastics and composites are addressed. Prerequisite: ISAT 430 or permission of the instructor.

MATS ISAT 432. Selection and Use of Engineering Materials. 3 credits. Offered spring.
This course deals with the interplay between engineering product specification, design, economics, environment, energy, materials selection, fabrication route, manufacturing cost and product service requirements. Students will be taught how to perform design projects that involve understanding of the behavior of materials and selection of materials for a specific function. Prerequisite: ISAT 211 or permission of the instructor.

MATS ISAT 436. Micro-Nanofabrication and Applications. 3 credits. Offered fall.
This course examines processes used in the manufacture of microelectronic devices (VLSI integrated circuits, optoelectronic devices, flat panel displays), microelectromechanical devices (micromotors, microactuators), data storage media (magnetic and optical disks, including CDs), optical fibers and some sensors and transducers. Principles of operation of semi-conductor and other devices are also studied. Prerequisite: Junior standing in ISAT, PHYS 150, PHYS 250 or permission of the instructor.

MATS 498R. Undergraduate Materials Science Research. 1-3 credits, repeatable to 6 credits. Offered on demand.
Research in a selected area of materials science arranged with and approved by a faculty research advisor. Prerequisite: Proposal for study must be approved by research adviser and by the Director of Center for Materials Science prior to registration.

Mathematics

Department of Mathematics

*MATH 103. The Nature of Mathematics. 3 credits. Offered fall and spring.
Topics such as geometry, computing, algebra, number theory, history of mathematics, logic, probability, statistics, modeling and problem solving intended to give students insight into what mathematics is, what it attempts to accomplish and how mathematicians think.

MATH 107--108. Fundamentals of Mathematics I-II. 3 credits each semester. Offered fall and spring.
Sets, logic, numeration systems, number theory, measurement, geometry, probability and statistics are topics covered. These courses will fulfill the requirements for licensure of prospective early childhood, elementary and middle school teachers. Prerequisite for MATH 107: MATH 155, MATH/ISAT 275 or sufficient score on the Mathematics Placement Exam. Prerequisite for MATH 108: MATH 107.

MATH 135. Elementary Functions. 4 credits. Offered on demand.
Algebraic, exponential, logarithmic and trigonometric functions; matrices and matrix solutions to systems of linear equations; vectors. Not open to students who have previously earned credit in MATH 125, 145, 155, 156, 205 or 235, except with the consent of the department head.

MATH 155. College Algebra. 3 credits. Offered fall and spring.
Polynomial, rational, exponential and logarithmic functions and applications, systems of equations and inequalities, sequences. Prerequisite for MATH 155: MATH 156, 205 or 235.

MATH 156. College Algebra. 3 credits. Offered fall and spring.
Polynomial, rational, exponential and logarithmic functions and applications, systems of equations and inequalities, sequences. Prerequisite for MATH 156: MATH 155, 205 or 235.

MATH 167. Topics in Mathematics. 1-3 credits. Offered on demand.
Topics or projects in mathematics which are of interest to the lower-division student. May be repeated for credit when course content changes. Topics or projects selected may dictate prerequisites. Students should consult the instructor prior to enrolling for this course.

*MATH 205. Introductory Calculus I. 3 credits. Offered fall and spring.
Topics from differential calculus with applications to the social, behavioral or life sciences and business or management. Prerequisite: MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam. Not open to mathematics or physics majors or to students who have already earned credit in MATH 235. Not recommended for chemistry majors.
**MATH 205. Introductory Calculus I with Laboratory.** 4 credits. Offered on demand.

Topics from differential calculus, including a laboratory component stressing data collection, data analysis, and applications to environmental issues. Prerequisite: MATH 105, MATH 106 or sufficient score on the Mathematics Placement Exam. Not open to mathematics or physics majors or to students who have already earned credit in MATH 205, MATH 221 or MATH 235. Not recommended for chemistry majors.

**MATH 206. Introductory Calculus II.** 3 credits. Offered on demand.

Topics from integral calculus with applications to the social, behavioral or life sciences and business or management. Prerequisite: MATH 205. Not open to mathematics or physics majors or to students who have already earned credit in MATH 206. Not recommended for chemistry majors.

**MATH 207. Mathematical Problem Solving.** 3 credits. Offered fall and spring.

A continuation of the study of the mathematical content of MATH 107-109 with special emphasis on problem solving strategies, deductive, inductive and inferential reasoning. Use of technology and other appropriate tools. Prerequisite: MATH 108 or permission of the instructor.

**MATH 210. Elementary Statistics.** 3 credits. Offered fall and spring.

Descriptive statistics, frequency distributions, sampling, estimation and testing of hypotheses, regression, correlation and an introduction to statistical analysis using computers. Prerequisite: MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam. Not open to majors in mathematics.

**MATH/CS 227-228. Discrete Structures I-II.** 3 credits each semester. MATH/CS 227 offered spring; MATH/CS 228 offered fall.

An introduction to discrete mathematical structures including functions, relations, sets, logic, matrices, elementary number theory, proof techniques, basics of counting, graphic theory, discrete probability, digital logic, finite state machines, integer and floating point representations. Prerequisite for MATH/CS 228: MATH/CS 227 or MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam. Prerequisite for MATH/CS 227: MATH 155 or MATH/CS 228 offered fall.

**MATH 231. Calculus with Functions I.** 4 credits. Offered fall and spring.

MATH 231 and MATH 232 form a sequence that combines first-semester calculus with algebra and trigonometry. The sequence is designed for students whose pre-calculus skills are not strong enough for MATH 235. Calculus material in MATH 231 includes limits and derivatives of algebraic functions and their applications. Prerequisite: MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam. NOTE: MATH 231-232 together are equivalent to MATH 235 for all prerequisites. Not open to students who have already earned credit in MATH 235.

**MATH 232. Calculus with Functions II.** 4 credits. Offered fall and spring.

A continuation of MATH 231. Calculus topics include limits and derivatives of transcendental functions, the theory of integration and basic integration techniques. Prerequisite: MATH 231 with a grade of "C-" or better. NOTE: MATH 231-232 together are equivalent to MATH 235 for all prerequisites. Not open to students who have already earned credit in MATH 235.

**MATH 235*-236. Calculus I-II.** 4 credits each semester. Offered fall and spring.

Differential and integral calculus of functions of one variable. Sequences and infinite series. Prerequisite for MATH 235: Sufficient score on the Mathematics Placement Exam. Prerequisite for MATH 236: MATH 232 or MATH 235 with grade of "C-" or better. MATH 235 is not open to students who have already earned credit in MATH 232.

**MATH 237. Calculus III.** 4 credits. Offered fall and spring.

Vectors. Multivariate calculus. Prerequisite: MATH 236 with grade of "C-" or better.

**MATH 238. Linear Algebra with Differential Equations.** 4 credits. Offered fall and spring.

Matrices; determinants; vector spaces; linear transformations; eigenvalues and eigenvectors; separable, exact and linear differential equations; and systems of linear differential equations. Prerequisite: MATH 236. Not open to students with credit in MATH 200 or MATH 236 without departmental permission.

**MATH 245. Discrete Mathematics.** 3 credits. Offered fall and spring.

Logic, set theory, relations and functions, mathematical induction and equivalent forms, recurrence relations, counting techniques. Prerequisite or corequisite: MATH 236.


Programming in a high-level computer language. Applications of numerical algorithms to problems basic to areas such as mathematics, the sciences and economics and finance. Prerequisite: MATH 236 or corequisite MATH 238 and consent of instructor. This course is not open to students who have previously earned credit in MATH/CS 448.

**MATH/PHYS 265. Introduction to Fluid Mechanics.** 4 credits. Offered spring of even numbered years.

Introduces the student to the application of vector calculus to the description of fluids. The Euler equation, viscosity and the Navier-Stokes equation will be covered. Prerequisites: MATH 237 and PHYS 260.

**MATH 280. SAS Programming and Data Management.** 3 credits. Offered fall.

Use of statistical software to manage, process and analyze data. Writing of statistical programs to perform simulation experiments. Prerequisite: MATH 220 or MATH 318.

**MATH 285. Data Analysis.** 4 credits. Offered on demand.

Topics include experimental and survey design, distributions, variation, chance, sampling variation, computer simulation, bootstrapping, estimation and hypothesis testing using real data generated from classroom experiments and large databases. Prerequisite: MATH 206, MATH 236 or permission of instructor. Not open to students who have already earned credit in MATH 220 or MATH 318.

**MATH 300. Linear Algebra.** 3 credits. Offered on demand.

Vector spaces, linear transformations, matrices, determinants, systems of linear equations and eigenvalues and eigenvectors. Prerequisite or corequisite: MATH 237 or permission of the instructor.

**MATH 304. Principles of Algebra.** 3 credits. Offered spring.

Algebraic structures, number systems, matrices, groups, rings, factors and solutions to equations, graph theory. Prerequisite: MATH 207 or permission of instructor.

**MATH 305. Principles of Geometry.** 3 credits. Offered fall.

Finite geometries, geometric transformations, constructions, geometry of inversion, projective geometry, non-Euclidean geometry. Prerequisite: MATH 207 or permission of instructor.

**MATH 306. Principles of Analysis.** 3 credits. Offered fall.

Sequences, discrete calculus and difference equations, derivatives and integrals, concepts of differential equations and applications. Prerequisite: MATH 207 or permission of instructor.


Descriptive statistics, measures of central tendency and dispersion, correlation, probability, probability distributions and statistical inference. Prerequisite: MATH 207 or permission of instructor.

**MATH 310. Elementary Theory of Numbers.** 3 credits. Offered every third semester as of fall 2006.

Properties of integers and prime numbers, divisibility, congruence, residues and selected topics. Prerequisite or corequisite: MATH 237 or consent of the instructor.
MATH 315. The Real Number System. 3 credits. Offered every third semester as of fall 2007.
A development of the real number system through a systematic approach to the natural numbers, integers, rationals and irrationals. Prerequisite or corequisite: MATH 237 or consent of the instructor.

MATH 316. Introduction to Probability and Statistics. 4 credits. Offered fall and spring.
Counting, probability axioms, discrete and continuous random variables, method of moments and maximum likelihood estimation, descriptive statistics, central limit theorem, single and two-sample inference, blocking and dependent sample inference, simple linear regression and correlation. Prerequisite: MATH 236.

MATH 321. Analysis of Variance and Experimental Design. 3 credits. Offered fall and spring.
Introduction to basic concepts in statistics with applications of statistical techniques including estimation, test of hypothesis, analysis of variance and topics in experimental design. Prerequisite: MATH 220, MATH 318 or equivalent.

MATH 322. Applied Linear Regression. 3 credits. Offered spring.
Introduction to basic concepts and methods in regression analysis and the application of these models to real-life situations. Prerequisite: MATH 220, MATH 318 or equivalent.

MATH 324. Applied Nonparametric Statistics. 3 credits. Offered spring.
Methods of analyzing data from non-normal populations including binomial tests, contingency tables, use of ranks, Kolmogorov-Smirnov type statistics and selected topics. Prerequisite: MATH 220, MATH 318 or equivalent.

MATH 325. Survey Sampling Methods. 3 credits. Offered fall.
Theory and practice of sampling including stratified random samples, discussion of simple random samples, cluster sampling, estimating sample size, ratio estimates, subsampling, two-stage sampling and analysis of sampling error. Prerequisite: MATH 220 or MATH 318.

MATH 326. Statistical Quality Control. 3 credits. Offered on demand.
Uses and concepts of probability and sampling procedures. Acceptance sampling by attributes and variables, Shewhart concepts of process control, control chart process capability studies, reliability and life testing, Design of sampling plans. Prerequisite: MATH 318.

MATH 327. Categorical Data Analysis. 3 credits. Offered fall.
Exact inference for population proportions, comparison of population proportions for independent and dependent samples, two and three-way contingency tables, Chi-square tests of independence and homogeneity, Chi-square goodness-of-fit tests and Poisson and logistic regression. Prerequisite: MATH 220 or MATH 318.

MATH/FIN 328. Time Series Analysis. 3 credits. Offered fall.
Regression and exponential smoothing methods for forecasting nonseasonal and seasonal time series, stochastic processes, Box-Jenkins' autoregressive and moving average models. Prerequisites: MATH 238 and MATH 318.

MATH 336. Elementary Differential Equations. 3 credits. Offered on demand.
Development of techniques for obtaining, analyzing and graphing solutions to differential equations, with emphasis on first and second order equations. Prerequisite: MATH 237.

MATH 337. Methods of Applied Calculus. 4 credits. Offered every third semester as of fall 2006.
Laplace transforms, power series and their application to differential equations. Vector differential and integral calculus; parametric curves; coordinate systems; line, surface and volume integrals; and gradient, divergence and curl including the theorems of Green, Stokes and Gauss. Prerequisites: MATH 237 and MATH 238.

MATH 340. Mathematical Modeling I – Optimization. 3 credits. Offered fall of even numbered years.
Linear and nonlinear optimization with an emphasis on applications in the sciences, economics and social sciences. Techniques studied include the simplex, Newton and Lagrange methods and Kuhn-Tucker theory. Software packages will be used to implement these methods. Prerequisites: MATH 237 and MATH 238 or consent of instructor.

MATH/PHYS 341. Nonlinear Dynamics and Chaos. 3 credits. Offered spring.
Introductory study of nonlinear dynamics and chaos intended primarily for upper-level undergraduates in science and mathematics. Topics include stability, bifurcations, phase portraits, strange attractors, fractals and selected applications of nonlinear dynamics in pure and applied science. Computers may be utilized for simulations and graphics. Prerequisites: MATH 238 and MATH 248.

MATH 353. Graph Theory. 3 credits. Offered every third semester as of spring 2007.
Graphs and their applications. Possible topics include trees, Euler paths and Hamiltonian circuits, planar graphs, digraphs, adjacency matrices, connectivity and coloring problems. Prerequisite: MATH 245 or consent of instructor.

MATH 360. Complex Variables with Applications. 3 credits. Offered every third semester as of fall 2007.
Introduction to algebraic properties of complex numbers, analytic functions, harmonic functions, mappings of elementary functions, contour integration, series, residues, and poles and conformal mappings. Emphasis on computations and applications to fluid and heat flow. Prerequisite: MATH 237.

MATH/PHYS 365. Computational Fluid Dynamics. 3 credits. Offered on demand.
Applications of computer models to the understanding of both compressible and incompressible fluid flows. Prerequisites: MATH 248, either MATH 238 or MATH 336, MATH/PHYS 265, and PHYS 340.

MATH/FIN 395. Mathematical Finance. 3 credits. Offered spring.
An overview of the role of mathematical concepts in financial applications. Topics include continuous time finance, optimization, numerical analysis and applications in asset pricing. Prerequisites: MATH 237 and FIN 380.

MATH/FIN 405. Securities Pricing. 3 credits. Offered fall.
A quantitative treatment of the theory and method of financial securities pricing to include an examination of closed form pricing models such as the Black-Scholes and its various derivatives as well as numerical solution techniques such as binomial methods. Prerequisite: MATH/FIN 395.

MATH 410-411. Advanced Calculus. 3 credits each semester.
MATH 410 offered fall and spring; MATH 411 offered spring. Limits, continuity, differentiation, sequences, series, integration and selected topics. Prerequisite for MATH 410: MATH 238 or MATH 248 and MATH 245 or consent of the instructor. Prerequisite for MATH 411: MATH 410.

MATH 415. History of Mathematics. 3 credits. Offered every third semester as of fall 2006.
Topics in the history of mathematics spanning ancient times to the present. Prerequisite: MATH 245 or consent of the instructor.

MATH 421. Applied Multivariate Statistical Analysis. 3 credits. Offered fall.
Multivariate statistical methods with applications. Topics include canonical correlation, clustering, discriminant analysis, factor analysis, multivariate analysis of variance, multiple regression, multidimensional scaling and principal component analysis. Prerequisites: MATH 300 or MATH 238, and MATH 321 or MATH 322.
MATH 423. Stochastic Processes. 3 credits. Offered spring of odd numbered years.
Sequences and classes of random variables. Applications to physical, biological, social and management sciences. Topics include Markov chains, branching processes, the Poisson process, queuing systems and renewal processes. Prerequisites: MATH 239 or MATH 300 or equivalent and MATH 318.

MATH 424. Statistical Decision Theory. 3 credits. Offered spring of even numbered years.
Development and use of probability and statistics for strategic decision making with applications. Topics include decision flow diagrams, analysis of risk and risk aversion, utility theory, Bayesian statistical methods, the economics of sampling, sensitivity analysis and collective decision making. Prerequisite: MATH 318.

Offered fall.
Probability spaces, random variables, discrete and continuous probability distributions, mathematical expectation, moment generating functions, moments of linear combinations of random variables and sampling distributions. Prerequisite: MATH 318.

MATH 427. Probability and Mathematical Statistics II. 3 credits.
Offered spring.
Sampling theory and distributions, theory and applications of estimation and hypothesis testing, regression and correlation and analysis of variance. Prerequisite: MATH 426.

Experience in the design, data collection and analysis for a survey or experiment. MATH 429 should be taken concurrently with one of the following statistics courses: MATH 321, 322, 324, 325 and 327. Corequisite: One of MATH 321, MATH 322, MATH 324, MATH 325 or MATH 327. Prerequisite: Six hours of statistics courses at the 300 or 400 level.

MATH 430-431. Abstract Algebra. 3 credits each semester. MATH 430 offered fall and spring; MATH 431 offered spring.
An introduction to groups, rings and fields. Prerequisite for MATH 430: MATH 238 or MATH 300 and MATH 245 or consent of instructor. Prerequisite for MATH 431: MATH 430.

MATH 435. Introduction to Topology. 3 credits. Offered on demand.
Metric spaces, limits, continuous maps and homeomorphisms, connectedness, compact topological spaces and applications. Prerequisites: MATH 238 or MATH 300 and MATH 245 or consent of instructor.

MATH 440. Fourier Analysis and Partial Differential Equations. 3 credits. Offered fall.
Elementary applied partial differential equations, the heat equation, Laplace’s equation, the wave equation; Fourier series and boundary value problems. Both theory and problem-solving will be included. Prerequisite: MATH 238 or MATH 336.

MATH 441. Analysis and Dynamics of Differential Equations. 3 credits. Offered spring.
Analysis of qualitative properties and dynamics of linear and non-linear ordinary differential equations, including topics such as existence, uniqueness, phase portraits, stability and chaos, with applications to the sciences. Prerequisites: MATH 238 and MATH 245 or MATH 440 or consent of instructor.

MATH/CS 448. Numerical Analysis for Differential Equations. 3 credits. Offered every third semester as of fall 2007.
Study and analysis of numerical techniques to solve ordinary and partial differential equations, including Euler, Runge-Kutta, Picard, finite-difference and finite-element methods. Programming using a high-level language and/or software packages. Prerequisites: MATH/CS 448 Formerly MATH 449.

MATH/FIN 465. Seminar in Actuarial Science I. 3 credits. Offered on demand.
Theory and application of contingency mathematics in the areas of life and health insurance and of annuities from both a probabilistic and deterministic approach. This class, together with MATH/FIN 466, helps students prepare for the professional actuarial examinations. Prerequisite: MATH/FIN 395 or consent of the instructor. Prerequisite or corequisite: MATH 426.

MATH/FIN 466. Seminar in Actuarial Science II. 3 credits.
Offered on demand.
A continuation of MATH/FIN 465. Additional coverage of contingency mathematics in the areas of life and health insurance, annuities, pensions and risk theory from both probabilistic and deterministic approaches. The two-course sequence helps to prepare the student for the professional actuarial examinations. Prerequisite: MATH/FIN 465. Prerequisite or corequisite: MATH 427.

MATH 467. Selected Topics in Mathematics. 1-3 credits each semester. Offered on demand.
Topics in advanced mathematics which are of special interest to the student but not covered in the regularly offered courses. Offered only with approval of the department head; may be repeated for credit when course content changes.

MATH 475. Fundamental Concepts of Geometry. 3 credits.
Offered fall.
Origin and development of Euclidean and other geometries including axiomatic systems, mathematical proof and special topics from incidence geometry. Prerequisite: MATH 245 or consent of instructor.

MATH 483. Selected Topics in Applied Mathematics. 3 credits.
Offered on demand.
Topics in applied mathematics not covered in the regularly offered courses. Offered only with the approval of the department head; may be repeated for credit when course content changes. Prerequisites: Junior standing and consent of the instructor.

MATH 485. Selected Topics in Statistics. 1-3 credits. Offered on demand.
Topics in statistics which are of interest but not otherwise covered in the regular statistics offerings of the department. Offered only with approval of the department head; may be repeated for credit when course content changes. Prerequisites: Junior standing and consent of the instructor.

MATH 497-498. Independent Study. 1-3 credits each semester. Offered on demand.
Independent study in mathematics under faculty supervision. Offered only with consent of the department head.

MATH 499. Honors. 6 credits. Offered on demand.
Year course.

Media Arts and Design

School of Media Arts and Design

SMAD 101. Introduction to Media Arts and Design. 3 credits.
Offered fall and spring.
Study of the historical evolution of today’s media industries and career paths. Emphasis on contemporary issues affecting those industries and careers. Consideration given to emerging media, their required skills and social impacts. Prerequisite: Formal declaration for admission to the SMAD major.
SMAD 201. Fundamental Skills in Media Arts and Design I. 3 credits. Offered fall and spring.
Study of basic computer operating systems and the principles and practices of graphic production for digital and interactive media. Focus on tools and techniques used to create graphic content for diverse media delivery systems. Prerequisite: Admission to the SMAD major.

SMAD 202. Fundamentals Skills in Media Arts and Design II. 3 credits. Offered fall and spring.
Study of the aesthetic principles and practices of audio and video production for digital media. Focus on the technological requirements of producing audio and video for different delivery systems such as television, interactive CD/DVD and the Web. Prerequisite: Admission to the SMAD major.

SMAD 210. News Writing. 3 credits. Offered fall and spring.
The study of the fundamentals of news writing, including news gathering techniques and modern news style. Emphasis on day-to-day coverage of meetings, events and breaking news stories. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Admission to the SMAD major or permission of the instructor.

SMAD 220. News Editing. 3 credits. Offered fall and spring.
The study of editorial functions in the modern newsroom. Consideration of problems in news judgment, news style and the laws of libel. Emphasis upon layout and headline writing. Prerequisite: Admission to the SMAD major or permission of the instructor.

SMAD 225. Photojournalism. 3 credits. Offered fall and spring.
The study of visual information gathering for print media including photojournalism. Emphasis on photographic techniques and print media layout. Consideration of new visual technologies including the use of computers for electronic photo editing and design. Students must provide their own cameras. Prerequisite: Admission to the SMAD major and SMAD 201 or permission of the instructor.

SMAD 231. Multimedia Writing. 3 credits. Offered fall and spring.
Study of the principles and practices of writing for multimedia applications. Emphasis on the nature of interactivity and the relationship between text and image, sound and video. Attention to the development of multimedia presentations designed to inform, persuade and entertain. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Admission to the SMAD major or permission of the instructor.

SMAD 241. Corporate Media Writing. 3 credits. Offered fall and spring.
Study and practice of the forms and techniques used in corporate media writing. Emphasis on writing and editing skills necessary for print, broadcast and Web-based media. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Admission to the SMAD major or permission of the instructor.

SMAD 250. Scriptwriting. 3 credits. Offered fall and spring.
The study of the principles and practices of writing scripts for commercial, non-commercial and corporate media applications. Emphasis on preparing dramatic and informational forms for broadcast recording. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Admission to the SMAD major or permission of the instructor.

SMAD 251. Screenwriting. 3 credits. Offered fall and spring.
Introductory study of the principles and practices of screenwriting. Emphasis is placed on the basic narrative structures underlying cinematic story-telling and the development of a short film script. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Admission to the SMAD major or permission of the instructor.

SMAD 256. Principles of Advertising. 3 credits. Offered fall and spring.
Study of the principles and practices of advertising, including the process, planning, production and placement of commercial messages. Students will learn of the social impact, creative strategy, consumer use, message production and media placement strategies of advertising. Students get practical experience applying an integrated communication strategy. Prerequisites: SMAD 201 and SMAD 202 or permission of the instructor.

SMAD 259. Practicum in Media Arts and Design. 1 credit, repeatable to 3 credits. Offered fall and spring.
First year students and sophomores participating in co-curricular media activities may receive one hour of credit for fieldwork at The Breeze, WMRA-FM, the Madison Video Productions or other university-related media outlets. Students are limited to one practicum per semester. Application procedures will be available from the school prior to registration. Prerequisite: Permission of the instructor.

SMAD 301. The Media Arts: Culture by Design. 3 credits. Offered fall and spring.
Study of how mediated communication molds perception and influences cultural change. Emphasis on how language and imagery, sound and music are combined in current media to create meaning. Consideration of emerging media and their implications for cultural design. Prerequisites: SMAD 201 and SMAD 202 or permission of the instructor.

SMAD 302. Videography. 3 credits. Offered fall and spring.
Principles and practices of video field production. Focus on visual composition, lighting and sound, production, planning, and operation of portable video recording equipment. Emphasis on shooting and editing for broadcast, non-broadcast and multimedia applications. Prerequisites: SMAD 201 and SMAD 202 or permission of the instructor. Corequisite: SMAD 303.

SMAD 303. Digital Post-Production. 3 credits. Offered fall and spring.
Principles and practices of digital video post-production. Focus on aesthetic considerations, technologies and strategies used to edit video and audio for a variety of program forms and contexts. Prerequisites: SMAD 201 and SMAD 202 or permission of the instructor. Corequisite: SMAD 302.

SMAD 304. Advanced Digital Audio Production. 3 credits. Offered periodically.
Study of digital sound production, digital music production and digital sound-for-picture production. Emphasis on advanced theories and applications. Prerequisites: SMAD 201 and SMAD 202 or permission of the instructor. Formerly SMAD 334.

SMAD 305. Topics in Media Arts and Design. 3 credits, repeatable to 6 credits. Offered periodically.
The study of current topics and issues in media arts and design. Emphasis on contemporary themes of immediate concern. Prerequisite: Admission to the SMAD major or permission of the instructor.

SMAD 307. Multimedia for the Web. 3 credits. Offered fall and spring.
Study of the principles of creating effective communication for the World Wide Web. Emphasis on the techniques used to design and integrate diverse media elements. Focus on the creation and manipulation of text, graphics, audio and video for the Web. Consideration of interface design and Web delivery issues. Prerequisites: SMAD 201 and SMAD 202 or permission of the instructor.

SMAD 308. Interactive Multimedia Authoring. 3 credits. Offered fall and spring.
Study of the principles and practices for creating effective interactive multimedia and animation. Emphasis on the tools and techniques used to design and integrate diverse media elements. Focus on interactive multimedia authoring, effective user interface design and computer animation for CD-ROM/DVD-ROM delivery. Prerequisite: SMAD 307 or permission of the instructor.
SMAD 310. Advanced News Writing. 3 credits. Offered periodically.
Advanced study and practice of news writing and news gathering techniques. Emphasis on in-depth and investigative stories. Prerequisite: SMAD 210, SMAD 241 or permission of the instructor.

SMAD 311. Feature Writing. 3 credits. Offered fall and spring.
The study and practice of advanced techniques in planning and writing feature stories. Emphasis on individual performance through criticism of student work in conference with the instructor. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: SMAD 210, SMAD 241 or permission of the instructor.

SMAD 322. Newspaper Production. 3 credits. Offered fall.
Advanced study in the knowledge and skills required to produce a newspaper. Areas of study include story generation, writing, editing, picture editing, page design, layout, on-screen pagination, production and management. Consideration given to the journalistic responsibilities and problems of serving a diverse audience. Prerequisite: SMAD 210, SMAD 220, SMAD 241 or permission of the instructor.

SMAD 321. Feature Magazine Production. 3 credits. Offered spring.
A practical course in which students produce a feature magazine published regularly by the journalism area. Each student is assigned a specific staff position. Students learn to use the latest computer pagination technology in the design and production of a magazine. Prerequisite: SMAD 311 or permission of the instructor.

SMAD 330. Multimedia Law. 3 credits. Offered fall and spring.
An in-depth investigation of business and legal aspects of multimedia production, publication and distribution. Examination of legal issues affecting the multimedia industry including: intellectual property laws, torts, contracts and licensing. Discussion of current policies and practices affecting multimedia development and review of pertinent legal reference materials. Prerequisites: Admission to the SMAD major and junior standing or permission of the instructor.

SMAD/GRPH 339. Web Design. 3 credits. Offered fall and spring.
Introduction to Web design through theory and practical application. Assignments will focus on the unique form, content and structures associated with designing for the World Wide Web. Special emphasis on the creative process and the graphic presentation of ideas. Prerequisites: SMAD majors: SMAD 201 and SMAD 202; GRPH emphasis: GRPH 243 and GRPH 250 or permission of the instructor.

SMAD 340. Advanced Screenwriting. 3 credits. Offered fall and spring.
Advanced study of the principles of screenplay writing for feature films and television movies. Emphasis is placed on the structure of the full-length narrative film. Prerequisite: SMAD 251; for non-majors: ENG 381; or permission of the instructor.

SMAD 341. Web Communication. 3 credits. Offered fall and spring.
Study of the design and development of the World Wide Web as a corporate communications tool. Emphasis on project planning and research, Web site design and management. Focus on the lexicon of the Web, the tools and techniques of e-commerce, and Web site promotion. Attention to research and Web communication management principles. Prerequisites: SMAD 201 and SMAD 202 or permission of the instructor.

SMAD 356. Telecommunication Policy and Regulation. 3 credits.
Offered fall and spring.
An overview of the regulatory issues encountered in the telecommunication industry. Emphasizes post 1982-FCC changes deregulating telephone, CATV and broadcast industries. Includes regulation of emerging services and technologies, First Amendment issues, ownership and distribution of new information forms, and limitations and uses of technology. Prerequisite: Junior standing or permission of the instructor.

SMAD 370. Mass Communication Law. 3 credits. Offered fall and spring.
Principles and case studies in communication law, constitutional guarantees, libel, privacy, contempt, copyright and governmental regulatory agencies. Emphasis on recent cases and their effects on mass communication. Prerequisites: Admission to the SMAD major and junior standing or permission of the instructor.

SMAD 371. Narrative Media Theories. 3 credits. Offered spring.
Study of media theories that focus on the functions and effects of storytelling in cinema and television. Emphasis on how such theories explain the cultural impact and personal utility of narrative contents in everyday life. Consideration of critical methods and research techniques underpinning these diverse explanations of media influence. Corequisite: SMAD 301 or permission of the instructor.

SMAD 372. Media History. 3 credits. Offered periodically.
The study of the history of the media in relation to American politics and society. Emphasis on key periods in the development of journalism and the mass media and the role of the journalist in society. Prerequisites: Admission to the SMAD major and junior standing or permission of the instructor.

SMAD 390. Directed Projects in Media Arts and Design. 2 credits, repeatable to 4 credits. Offered fall and spring.
Supervised projects related to the study of any of the communication media. Credit given for original individual or group programs beyond the school’s usual co-curricular activities. A suitable completed project or report is required before credit can be awarded. Prerequisite: Permission of the school director.

SMAD 395. Advanced Practicum in Media Arts and Design. 1 credit, repeatable to 10 credits. Offered fall and spring.
Juniors and seniors participating in co-curricular media activities may receive one hour of credit for fieldwork at The Breeze, Curio, WMRA-FM, the Madison Video Productions or other university-related media outlets. Students are limited to one practicum per semester. Application procedures will be available from the school prior to registration. Prerequisite: Permission of the instructor.

SMAD 400. Senior Assessment in Media Arts and Design. 0 credits. Offered spring.
Students participate in testing, interviews, project reviews and other assessment activities as approved by the School of Media Arts and Design. Grades will be assigned on a credit/no-credit basis. Prerequisites: SMAD 301 and senior standing or permission of the school director.

SMAD 402. Advanced Post-Production. 3 credits. Offered spring.
Study and application of digital compositing with non-linear video editing systems. Focus on creating dynamic media elements for traditional and multimedia video applications. Emphasis on changing nature of video post production and the roles and responsibilities of video editors. Attention to client relations, and project and facilities management. Prerequisites: SMAD 302 and SMAD 303 or permission of the instructor.

SMAD 404. Advanced Multimedia. 3 credits. Offered fall and spring.
This course provides opportunities for students to increase their understanding of advanced multimedia topics and to further develop their interactive media production skills. Students will produce multimedia projects that incorporate various types of digital media and are suitable for publishing on the Web or CD-ROM/DVD-ROM. Prerequisites: SMAD 307 and SMAD 308 or permission of the instructor.

SMAD 405. Video Producing and Directing. 3 credits. Offered spring.
Study of the principles and practices of producing and directing programs for video and television. Emphasis on the creative development and production of programs designed to inform, entertain and persuade. Consideration of the impact of digital technology on program production and distribution. Attention to the collaborative nature of production management. Prerequisites: SMAD 302 and SMAD 303 or permission of the instructor.
SMAD 406. Electronic News Gathering and Producing. 3 credits. Offered fall.
Study of the processes and responsibilities of producing news for electronic distribution. Students will research, write and produce stories for distribution over-the-air, on cable and over the Internet. Emphasis on legal and ethical issues in news coverage. Prerequisites: SMAD 302 and SMAD 303 or permission of the instructor.

SMAD 407. Business and Management of Digital Media. 3 credits. Offered fall and spring.
Study of the principles and practices of managing digital media production. Emphasis on financial and personnel management, client relationships, and the structures and practices of digital media industries. Consideration of new trends in production and distribution. Attention to career preparation and development. Prerequisites: Senior standing and SMAD 302 and SMAD 303, or SMAD 307 and SMAD 308, or permission of the instructor.

SMAD 432. Print Communication Design. 3 credits. Offered spring.
An introduction to the theories and methods of design for print communication. Students will learn various techniques needed to produce the design materials that go into print publications. Prerequisite: SMAD 201, SMAD 225 or permission of the instructor.

SMAD 441. Corporate Communication Management. 3 credits. Offered fall and spring.
Study of principles and practices of managing corporate communication. Emphasis on evaluation and management of messages, channels, and appropriate media. Attention given to critical analysis and strategic planning. Focus on legal, ethical, financial, personnel issues and career development. Analysis of case studies and current issues. Prerequisites: Senior standing, SMAD 241 and SMAD 341, or permission of the instructor.

SMAD 460. Movies and Society. 3 credits. Offered fall.
The study of the cultural impact of the film industry as an institution of mass communication. Emphasis on the interrelationship among social, economic and technological factors influencing the creation and consumption of motion pictures. Consideration of particular films as indicators of cultural change. Prerequisites: SMAD 301; for non-majors: admission to the interdisciplinary minor in film studies; or permission of the instructor.

SMAD 461. Movies as Art. 3 credits. Offered spring.
Advanced study of how movies tell their stories in visual terms. Emphasis on the historical evolution and design of the moving image. Consideration of the latest imaging technologies affecting film narrative. Prerequisites: SMAD 301; for non-majors: ENG 381; or permission of the instructor.

SMAD 462. Documentary in Film and Television. 3 credits. Offered spring.
The study of content, style, technique and effect of representative samples of the documentary form. Consideration given to informational and persuasive elements. Prerequisites: SMAD 301; for non-majors: ENG 381; or permission of the instructor.

SMAD 463. Film Adaptations. 3 credits. Offered fall and spring.
The study of the process of adapting literature into feature films. Consideration is given to the original literary work, as well as to the changes undergone in its adaptation to film. Prerequisite: SMAD 301; for non-majors: ENG 381 or admission to the interdisciplinary minor in creative writing; or permission of the instructor.

SMAD 471. Media Ethics. 3 credits. Offered fall.
The study of ethical principles and how they apply in a variety of media situations, including entertainment programming news and advertising. Emphasis on case studies as examples of ethical decision-making. Prerequisites: Admission to the SMAD major and junior standing or permission of the instructor.

SMAD/SCOMP/PSC 472. Media and Politics. 3 credits. Offered fall and spring.
A study of the media's role in political campaigns, concentrating on past/present election, the media's role in covering political parties and coverage of the governing process. Discussion of electronic and print will occur. Topics to be examined include campaign videos, CSPAN, political ads, editorial cartoons, TV debates, convention coverage and radio talk show commentary.

SMAD 490. Special Studies in Media Arts and Design. 3 credits. Offered fall and spring.
An independent study for students to pursue individual research under the guidance of a faculty adviser. Prerequisites: Senior SMAD majors in good standing and permission of the school director.

SMAD 495. Internship in Media Arts and Design. 2 credits, repeatable to 4 credits. Offered fall and spring.
An off-campus program prepared and monitored on an individual student basis. Internships are designed to provide practical experience in journalism, electronic media, corporate media or visual communication. Prerequisites: Permission of the school director and the media facility involved. Students must meet criteria and application procedures established in each concentration.

SMAD 498. Senior Seminar in Media Arts and Design. 3 credits. Offered fall and spring.
The study and research in the history and philosophy of the function of mass communication in society. Consideration of topics relating to problems of communication systems, technological freedoms, and press freedom and responsibilities. Prerequisites: SMAD 301 and senior standing or permission of the instructor.

SMAD 499. Honors in Media Arts and Design. 6 credits. Offered fall and spring.

Middle and Secondary Education

College of Education

MSSE 101. Orientation to the Profession. 1 credit.
Provides information about preparation programs and careers for teachers of the middle and high school levels. Students participate in reflective activities for making personal and professional decisions about teaching.

MSSE 370. General Teaching Methods and Instructional Technology. 3 credits.
This general teaching methods course presents a wide variety of teaching and planning skills and strategies for middle and secondary education pre-service teachers. The course covers such topics as lesson planning, lesson delivery, assessment designs and a variety of topics related to the use of technology in schools and classrooms.

MSSE 371. Practicum II (O, 2). 2 credits.
Students devote 30 clock hours to classroom activities in grades four and five under university and public school supervision. Satisfactory performance in the course is required for retention in teacher education. Prerequisite: Permission of the instructor.

MSSE 470 (B, D and H-K). Teaching Methods Courses. 3 credits.
Specific techniques and methods for middle and secondary teachers in their respective discipline areas. Competencies to be developed will include discipline-specific planning strategies, instructional models, assessment of student learning, etc. Prerequisites: GPSYC 160, GPSYC 270, EDUC 360, MSSE 370 and passing scores on PRAXIS I. Corequisite: MSSE 471.

MSSE 470B. English/Language Arts Teaching Methods, Grades 6-12. 3 credits.
Specific techniques and methods for English teachers grades 6-12. Competencies to be developed will include discipline-specific planning strategies, instructional models and assessment of student learning related to English education. Prerequisites: GPSYC 160, GPSYC 270, EDUC 360, MSSE 370 and passing scores on PRAXIS I. Corequisite: MSSE 471.

MSSE 470H. Social Studies Teaching Methods, Grades 6-12. 3 credits.
Specific techniques and methods for social studies teachers grades 6-12. Competencies to be developed will include discipline-specific planning strategies, instructional models and assessment of student learning related to social studies education. Prerequisites: GPSYC 160, GPSYC 270, EDUC 360, MSSE 370 and passing scores on PRAXIS I. Corequisite: MSSE 471.
in small tactical units; fundamentals of first aid, land navigation and physical conditioning. \( \text{MSCI 100. Leadership Laboratory (0, 2)} \) 1 credit, repeatable to 8 credits. A laboratory in the development of leadership, stressing the practical application of leadership principles, techniques, styles and responsibilities. Participation as a member of a team or as a leader of the team given responsibility for accomplishment of given tasks.

MSCI 101. Introduction to Leadership and the Army. 1 credit. Introduction to various leadership styles and their effect on organizations; an introduction to the organization of the U.S. Army, its roles and missions, customs and traditions; effective writing and oral presentation techniques; orienteering and the use of lenticular compass; principles of physical conditioning. \( \text{Corequisite: MSCI 100.} \)

MSCI 102. Leadership Development Fundamentals. 1 credit. Introduction to the basic principles of leadership; developing a personal leadership style; effective writing and speaking skills; introduction to leadership in small tactical units; fundamentals of first aid, land navigation and marksmanship; principles of personal conditioning. \( \text{Corequisite: MSCI 100.} \)

MSCI 201. Leadership Styles – Theory and Application. 2 credits. A study of individual leadership styles and techniques, using historical case studies; an introduction to the branches (specialties) of the army. Communication and goal setting in small organizations; effective writing and public speaking; performance and evaluation as the leader of a five-member team required to accomplish tasks in a practical setting. Also serve as a member of a 10-person team responsible for accomplishing tasks in a field setting. \( \text{Corequisite: MSCI 100.} \)

MSCI 202. Developing Leader Skills. 2 credits. Analyzing missions to determine specified and implied tasks; organizing and conducting a briefing, preparing a concise written directive (operations order); detailing how a team will accomplish its tasks; performance and evaluation as the leader of a five-person team during a 24-hour, off-campus leadership practicum; evaluation of physical fitness preparedness for attendance at Cadet Professional Development Training. \( \text{Corequisite: MSCI 100.} \)

MSCI 300. Advanced Leadership Laboratory (0, 2). 2 credits, repeatable to 8 credits. An advanced laboratory in the development of leadership, stressing the practical application of leadership principles, techniques, styles and responsibilities. The advanced leadership laboratory focuses on leadership planning, resourcing and execution. Performance and evaluation as a leader of a 10 to 30 person team given responsibility for accomplishment of given tasks. Responsible for the evaluation, counseling and mentoring of 10 to 30 subordinates and team members. \( \text{Prerequisites: Completion of ROTC Basic Course (MSCI 101, MSCI 102, MSCI 201, MSCI 202 and MSCI 100 lab). Department head approval required.} \)

MSCI 310. Leading Small Organizations. 3 credits. Ethical dilemmas in leadership – when organizational goals conflict with member welfare; the role of policy and standard procedures in organizations; continued practice in effective writing and oral presentations; performance as a leader of a 10 to 30 person team given responsibility for accomplishment of given tasks. Responsible for the evaluation, counseling and mentoring of 10 to 30 subordinates and team members. \( \text{Prerequisites: MSCI 101, MSCI 102, MSCI 201 and MSCI 202 or placement credit as determined by the professor of military science. Corequisite: MSCI 300.} \)

MSCI 320. Developing Advanced Leader Skills. 3 credits. Planning for the unexpected in organizations under stress; developing alternate courses of action which are viable with the given constraints; how to delegate tasks and supervise subordinate leaders; avoiding micro-management – the when and how of providing guidance and direction; time management – the “backward planning process”; evaluation of a 10 to 30 person team within tactical and non-tactical settings; analysis of assigned tasks, preparation of a written directive to accomplish these tasks and oral presentation to others in a concise briefing. \( \text{Corequisite: MSCI 302.} \)

MSCI 410. Seminar on Command Management – Leadership Challenges and Organizational Goal-Setting. 3 credits. Studies in advanced leadership and management; how to assess organizational cohesion and develop strategies to improve it; examine and utilize components of the army's training cycle; methods of instruction, planning and conducting of classes to be taught at leadership lab; conduct of oral After-Action Reviews and preparation of written After-Action Reports; the counseling process for improving individual and group performance of subordinates. \( \text{Corequisite: MSCI 300.} \)

MSCI 420. Seminar on Officership Transition. 3 credits. Introduction to army management systems – personnel and logistics; the military’s legal system and its application at the company level; the officer-NCO relationship; The Officer Efficiency Report and its support form; establishment of project time lines with milestones, goals and In-Progress Reviews; book review on the Civil War Battle of Antietam, along with a field trip to Antietam Battlefield. \( \text{Corequisite: MSCI 300.} \)
Music

School of Music

MUS 100. Keyboard Skills I. 1 credit. Offered fall.
A beginning level keyboard skills class for music majors. Includes basic techniques, sight reading, elementary repertoire and functional theory-related keyboard skills.

MUS 101. Keyboard Skills II. 1 credit. Offered fall and spring.
An intermediate level keyboard skills class for music majors. Includes basic techniques, sight reading, elementary repertoire and functional theory-related keyboard skills. Prerequisite: MUS 100 or placement by audition/interview.

MUS 120. Diction for Singers I. 1 credit. Offered fall.
The study of English and Italian pronunciation using the phonetic alphabet with emphasis on the performance of song literature in each language. Open to music majors and minors or by permission of the instructor. Prerequisite: Music major or permission of the instructor.

MUS 121. Diction for Singers II. 1 credit. Offered fall.
The study of French and German pronunciation using the phonetic alphabet with emphasis on the performance of song literature in each language. Prerequisite: Music major or minor or by permission of the instructor.

MUS 131-132. Fundamentals of Music for Non-music Majors I and II. 3 credits each semester. MUS 131 offered fall; MUS 132 offered spring.
Covers basic information in music theory, basic ear-training and sight-singing skills, and basic keyboard skills designed for the non-music major. Prerequisite: MUS 131 is a prerequisite to MUS 132.

MUS 141-142. Theory I: Writing and Analysis Techniques. 3 credits each semester. MUS 141 offered fall; MUS 142 offered spring.
Music scale construction, rhythm and interval work, melody writing and a study of triads, inversions, primary and secondary chords, embellishments, introduction to chromatic harmony. Prerequisite: MUS 142 requires a grade of "C-" or higher in MUS 141. Corequisite: Should be taken concurrently with MUS 143-144.

MUS 143-144. Theory I: Aural Perception and Analysis. 1 credit each semester. MUS 143 offered fall; MUS 144 offered spring.
A coordinated laboratory course with MUS 141-142 encompassing sight singing and ear training. The course involves music reading and aural perception in unison and parts, dictation, error detection and analytical listening. Computer assisted instruction supplements in-class drill. Prerequisite: MUS 144 requires a grade of "C-" or higher in MUS 143. Corequisite: Should be taken concurrently with MUS 141-142.

MUS 150. Introduction to Technological Applications in Music. 1 credit. Offered fall and spring.
This course is designed to provide students with an overview of multiple applications of technology in music teaching. Topics to be covered include, but are not limited to, notation software, instructional software (including creative, practice and performance), MIDI, productivity applications and digital audio/recording.

MUS 195. Recital Attendance. 0 credit. Offered fall and spring.
Required of all music majors for the first six semesters of their enrollment as a major. The course is repeatable and each section of the course represents a semester. Successful completion of the course requires a minimum of 20 recitals attended each semester, totaling 120 attendances over the six semesters.

GMUS 200. Music in General Culture. 3 credits. Offered fall and spring.
Designed to increase the student’s perceptual ability in listening to music and to encourage an interest in both familiar and unfamiliar music. Primary study will be on music from the classic Western heritage. Folk, jazz, popular and non-Western music may also be considered.

MUS 202. Keyboard Skills III. 1 credit. Offered fall and spring.
An intermediate level course in functional keyboard skills for music majors. Includes sight reading, transposition, harmonization, improvisation, playing by ear and accompanying techniques. Prerequisite: MUS 100 or placement by audition/interview.

GMUS 203. Music in America. 3 credits. Offered fall and spring.
Knowledge and skills to increase the student’s perceptual ability in music listening with a survey of American music; examining relationships between popular and classical music styles.

MUS 204. History of Rock. 3 credits. Offered fall.
History of rock is a music appreciation course designed to develop an understanding of both musical and cultural roots of rock music and the ability to hear a direct relationship between those roots and current popular music. A major component of the course is a survey of the history of 20th century American popular music.

GMUS 206. Introduction to Global Music. 3 credits. Offered fall and spring.
A survey of various world music traditions, including those of Asia, the Pacific, Europe, Africa and the Americas. The course will focus on aesthetics, musical forms and styles, and the relationship between music and other arts. Emphasis will be placed on historical, religious and cultural events and their influence on the creation and development of music.

MUS 240. Jazz Improvisation Laboratory I. 2 credits. Offered spring.
Presents the fundamentals of improvisation in both jazz and popular musical styles. The class emphasis will be on creative work although some theory and chord nomenclature will be taught. Both vocal and instrumental musicians will be permitted to enroll, including both the general student and the music major. Prerequisite: Music major or jazz minor or permission of instructor.

MUS 241-242. Theory II: Writing and Analysis Techniques. 3 credits each semester. MUS 241 offered fall; MUS 242 offered spring.
Continuation of MUS 142. Chromatic harmony, modulation, musical form and analysis, introduction to 20th-century compositional techniques. Prerequisite: MUS 241 requires a grade of "C-" or higher in MUS 142; MUS 242 requires a grade of "C-" or higher in MUS 241. Corequisite: Should be taken concurrently with MUS 243-244.

MUS 243-244. Theory II: Aural Perception and Analysis. 1 credit each semester. MUS 243 offered fall; MUS 244 offered spring.
A coordinated laboratory course with MUS 241-242 encompassing sight singing and ear training and involving music reading and aural perception in unison and parts, dictation, error detection, and analytical listening. Computer assisted instruction supplements in-class drill. Prerequisite: MUS 243 requires a grade of "C-" or higher in MUS 244; MUS 244 requires a grade of "C-" or higher in MUS 243. Corequisite: Should be taken concurrently with MUS 241-242.

MUS 203. Keyboard Skills IV. 1 credit. Offered fall and spring.
A moderately advanced course in functional keyboard skills for music majors. Includes sight reading, transposition, harmonization, improvisation, playing by ear and accompanying techniques. Designed to prepare music major students for required Keyboard Proficiency Examination. Prerequisite: MUS 202 or placement by audition/interview.

MUS 304. Advanced Keyboard Skills. 1 credit. Offered fall and spring.
Designed for music majors who are required to minor in piano and/or organ. The emphasis is on sight reading and other keyboard skills beyond those covered in the class piano MUS 303 course. This is a group class which can be repeated. Prerequisite: MUS 303.

MUS 317. Basic Conducting. 2 credits. Offered fall.
Designed to acquaint the student with the fundamental elements of conducting technique, such as beat patterns, cueing, expression, transposition and score reading, with an emphasis on applying these techniques in practical conducting experiences involving vocal and instrumental forces. Prerequisites: MUS 142 and MUS 144 or junior standing.

MUS 318. Intermediate Choral Conducting. 2 credits. Offered spring.
Consists of the further application of basic conducting skills learned in MUS 317 to the choral situation with emphasis on baton techniques, score reading, and preparation and introduction to choral literature. Prerequisite: MUS 317.
MUS 319. Intermediate Instrumental Conducting. 2 credits. 
Offered spring.
A continuation of basic conducting to develop skills in baton technique with emphasis on advanced literature for public school use. Included are score sight-reading skills and literature selection. Prerequisites: MUS 317.

MUS 352. Music Composition. 2-3 credits. Offered fall and spring.
Individual/seminar instruction in composition using 20th-century styles and techniques. Compositions are performed publicly. Prerequisites: MUS 141 and 142 or permission of the instructor. May be repeated.

MUS 356. History of Jazz in America. 3 credits. Offered fall and spring.
A study of American jazz with particular emphasis on its practices with reference to principal performers and composers of jazz-style periods.

MUS/THEA 357. Music Theatre History. 3 credits. Offered once every other year.
A survey of the history of music theatre in American, both narrative and non-narrative, from 1750 to the present. Consideration of how music theatre developed from and reflected the cultural, social and political landscape of its time.

MUS 371. Private Piano Pedagogy. 3 credits. Offered fall, odd years.
Procedures and materials for the teaching of private piano students, especially elementary and intermediate. Piano solo and ensemble literature for children are emphasized. The problems of the adult beginner are studied.

MUS 372. Supervised Private Piano Teaching. 1 credit. Offered spring, even years.
Supervised practice teaching in private lesson settings involving beginning and intermediate piano students of various ages and abilities. Prerequisite: MUS 371.

MUS 373. Music History. 2 credits. Offered fall.
A history of Western music from the early Christian era through 1600.

MUS 374. Music History. 2 credits. Offered spring.
A history of Western music from 1600 through 1827.

MUS 375. Music History. 2 credits. Offered fall.
A history of Western music from 1827 through 1945.

MUS 376. Music History: Music in Contemporary Culture. 2 credits. Offered spring.
A history of Western music since 1945, including Western art music, music in Latin America and musical systems and literature from non-Western cultures including Islamic, Indian, Native American, Javanese and Chinese music.

MUS 395. Junior or Senior Half Recital. 0 credits. Offered fall and spring.
Presentation of a half recital, representative in quality of passing performance level 6 or 7 as set by the pertinent performance area faculty. Memorization is required in those areas that traditionally expect it. Course to be graded on credit/no credit basis. Prerequisites: Junior standing and approval of the performance faculty of the performer's area.

MUS 420. Piano Technology. 1-2 credits. Offered fall, even years.
The acoustical and mechanical design and history of the piano. This course includes the theory of tuning and temperaments; procedures and techniques of regulating and voicing pianos; and an additional hour for tuning lab.

MUS 440. Jazz Improvisation Laboratory II. 2 credits. Offered fall and spring.
Prerequisite: Intermediate to advanced improvisation skills in the jazz idiom alone. There is an emphasis on the theoretical analysis of chord progressions as well as on creative musical application. The course concludes by introducing some advanced musical improvisation concepts. May be repeated. Prerequisite: MUS 240 or permission of the instructor.

MUS 441. Vocal Arranging. 3 credits. Offered fall.
Arranging for vocal ensembles. Included will be fundamental concepts of orchestration. Prerequisites: MUS 242 and MUS 244.

MUS 442. Instrumental Arranging. 3 credits. Offered fall.
Arranging for various instrumental ensembles, including fundamental concepts for orchestration. Prerequisites: MUS 242 and MUS 244.

MUS 443-444. Counterpoint. 2 credits each semester. MUS 443 offered fall, even years; MUS 444 offered spring, even years.
Prerequisites: MUS 373, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 449-450. Advanced Music Analysis. 2 credits each semester.
Prerequisites: MUS 449 offered fall, odd years; MUS 450 offered spring, even years.
Analytical investigation of musical examples in a variety of styles with emphasis on musical form and harmony. MUS 449: Renaissance and Baroque period. MUS 450: 20th century, including Debussy, Bartok and Stravinsky. (Courses may be taken in sequence or separately.) Prerequisites: MUS 242 and MUS 244.

MUS 456. Choral Literature I. 3 credits. Offered fall, odd years.
A survey of choral literature from the pre-Renaissance through the Classical period, including a cappella and accompanied works. Attention will be given to parallel trends in keyboard and instrumental music where applicable. Prerequisites: MUS 372, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 457. Choral Literature II. 3 credits. Offered spring, even years.
A survey of choral literature from the Romantic period through the present, including a cappella and accompanied works. Attention will be given to parallel trends in keyboard and instrumental music where applicable. Prerequisites: MUS 372, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 460. Piano Literature I. 2 credits. Offered fall, odd years.
A survey of baroque and classical literature for the piano encompassing solo and concerto repertoire. An examination of literature for the clavichord, harpsichord and pianoforte. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major.

MUS 462. Music of the Romantic Period. 3 credits. Offered fall, even years.
A study of the Romantic movement in music with reference to its historical background and parallel movement in literature and art. The music of Berlioz, Brahms, Chopin, Liszt, Schubert, Wagner and their contemporaries will be covered. Prerequisites: MUS 373, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 463. 20th-Century Music. 3 credits. Offered spring, odd years.
A survey of the trends found in 20th-century music. Included will be impressionism; new music from Satie through Schoenberg, Bartok, Xenakis and Penderecki; and the music of contemporary American composers. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major. Prerequisites: MUS 373, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 464. Symphonic Literature. 3 credits. Offered fall, even years.
A historical survey of symphonic literature concentrating primarily on major composers and compositions from Baroque to present.
MUS 465. Opera History and Literature. 3 credits. Offered spring, odd years.
A survey study of the history of opera. Consideration will be given to the chronological development of all forms of music theatre with an emphasis on style characteristics through aural identification. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major. Prerequisites: MUS 373, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 467. Solo Vocal Literature. 3 credits. Offered spring, even years.
A survey of vocal art-song literature in Western culture.

MUS 470. Piano Literature II. 2 credits. Offered spring, even years.
A survey of romantic, impressionistic and 20th-century literature for the piano, including solo and concerto repertoire, with an emphasis on stylistic trends of the 20th century.

MUS 472. Instrumental Pedagogy. 1 credit. Offered fall and spring.
Presentations of instrumental methods, solo and ensemble literature related to the instrumental performer's own major area. Private instruction approaches and techniques are also considered with particular reference to the beginning player.

MUS 477. Vocal Pedagogy. 2 credits. Offered spring.
Designed to acquaint the prospective teacher with techniques of vocal pedagogy, both scientific and empirical. The course involves study, practice and observation. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major.

MUS 478. Music During the Baroque Period. 3 credits. Offered spring, odd years.
A survey of music history and literature from 1590-1750. Prerequisites: MUS 373, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 479. Music During the Classical Period. 3 credits. Offered spring, even years.
A survey of music history and literature from 1750-1827. Prerequisites: MUS 373, MUS 374, MUS 375 and MUS 376 or permission of the instructor.

MUS 480. Special Studies in Music. 1-3 credits each semester. Offered fall and spring.
Designed to give superior music students an opportunity to complete independent study under faculty supervision. Prerequisites: Permission of the instructor and school director.

MUS 495. Senior Graduation Recital. 1 credit. Offered fall and spring.
Presentation of a full recital with the quality of performance to meet standards for admission to graduate school master's degree in music programs. Memorized recital presentations will be required in those areas which traditionally demand them. Prerequisite: Senior standing.

MUS 497. Vocal Pedagogy. 2 credits. Offered spring.
Designed to acquaint the prospective teacher with techniques of vocal pedagogy, both scientific and empirical. The course involves study, practice and observation. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major.

MUS 498. Selected Topics in Music. 1-3 credits. Offered fall and spring.
Courses in music or music education which are of a topical nature. This may be repeated.

MUS 499. Honors. 6 credits. Offered fall and spring.
This is a year long course.

Music Education

School of Music

MUED 206. Instrument Familiarization. 1 credit. Offered fall.
Provides non-instrumental music education majors a functional knowledge of tone production and basic characteristics of woodwind, brass, percussion and string instruments.

MUED 271. Introduction to Music Education. 2 credits. Offered spring.
Overview of music teaching careers in general, the music education curriculum and Virginia's Standards of Learning. Field trips to observe school music programs will be taken. Fulfills the College of Visual and Performing Arts writing-intensive requirement for the major.

MUED 301-302. Woodwind Techniques. 1 credit each semester. Offered fall and spring.
Instruction in the basic skills of playing and teaching standard woodwind instruments in a heterogeneous class situation. Various methods for woodwind teaching will be studied and materials used in public school teaching will be examined and performed. MUED 301 each fall; MUED 302 each spring. Prerequisites: Sophomore standing; MUED 301 is a prerequisite to MUED 302.

MUED 303-304. Brass Techniques. 1 credit each semester.
Offered fall and spring.
Instruction in the basic skills of playing and teaching standard brass instruments in a heterogeneous class situation. Various methods for brass teaching will be studied and materials used in public school teaching will be examined and performed. MUED 303 each fall; MUED 304 each spring. Prerequisites: Sophomore standing; MUED 303 is a prerequisite to MUED 304.

MUED 305-306. Percussion Techniques. 1 credit each semester. Offered fall and spring.
Instruction in the basic skills of playing and teaching standard percussion instruments in a heterogeneous class situation. Various methods of percussion teaching will be studied and materials used in public school teaching will be examined and performed. MUED 305 each fall; MUED 306 each spring. Prerequisites: Sophomore standing; MUED 305 is a prerequisite to MUED 306.

MUED 307-308. String Techniques. 1 credit each semester. MUED 307 offered fall; MUED 308 offered spring.
Instruction in the basic skills of playing and teaching string instruments. Instruction will be on violin, viola, cello and bass in a heterogeneous class situation. Various methods for string teaching will be studied and materials used in public school teaching will be examined and performed. Prerequisites: Sophomore standing; MUED 307 is a prerequisite to MUED 308.

MUED 310. Vocal Techniques. 1 credit. Offered fall.
Class instruction designed to acquaint the instrumental (non-voice) major with fundamentals of vocal and choral techniques including posture, breath support, basic vocal production, physiological functions of the vocal mechanism, singer's diction, vocal exercises and individual as well as ensemble performances.

MUED 371. Beginning Methods and Materials for Instrumental Music. 2 credits. Offered fall.
Methods and materials for beginning through intermediate instrumental music students. Administrative concerns are included. Prerequisite: MUED 271, full admission to teacher education in Level 3 in major applied area.

MUED 372. General Music Practices. 2 credits. Offered fall.
Focuses on broad preparation for teaching the general music courses now found at both middle and high school levels. Prerequisite: MUED 271, full admission to teacher education and Level 3 in major applied area.

MUED 373. Advanced Methods and Materials for Instrumental Music. 2 credits. Offered spring.
Learning experiences related to the career needs of school instrumental music teachers are analyzed, discussed and practiced. Planning and teaching skills are presented for beginning, intermediate and advanced level students. Prerequisites: MUED 271 and MUED 317, full admission to teacher education and Level 4 in major applied area.
MUED 376. Choral Music Materials and Techniques. 2 credits. 
Offered spring.
Learning experiences of a useful and practical nature related to the career needs of school choral music teachers will be analyzed, discussed and practiced. Skills will be presented such as planning and teaching vocal technique, choosing appropriate music, and administering choral music programs. Prerequisites: MUS 317 and MUED 271, full admission to teacher education and Level 4 in major applied area.

MUED 380. Music in the Elementary School. 2 credits. Offered fall.
The general music program in the elementary school presented for future music specialists, K-6. Focus is on the synthesis of current philosophy, learning theories and educational practices for teaching elementary school music. Preparation for organizing music curricula and daily lesson plans is included. Prerequisite: MUED 271, full admission to teacher education and Level 3 in major applied area.

MUED 470. Marching Band Procedures. 2 credits. Offered spring.
Skills and knowledge needed to organize, administer, plan and teach marching band shows including shows for various competitions, parades, football, basketball and festival events; and techniques for developing both marching and playing style through a functional method of fundamental drills. Prerequisite: MUED 271 or permission of the instructor.

MUED 471. School Musical, Jazz and Show Choir Procedures. 2 credits. Offered spring, odd years.
Covers skills and concepts needed to organize, administer, plan, teach and perform in musicals, jazz choirs and show choirs. Highlights techniques of commercial and theatrical vocal style, fundamentals of producing a musical and choreography for the show choir. Prerequisites: MUS 317 and MUED 271 or permission of the instructor.

MUED 472. Survey of String Orchestra Repertoire. 2 credits. 
Offered as needed.
An examination of concert repertoire for string and full orchestra appropriate for performance by students in grades seven through 12. The course will include a study of evaluation and selection of music appropriate for a specific ensemble. Prerequisite: MUED 271 or permission of the instructor.

MUED 473. Jazz Ensemble Procedures and Techniques. 2 credits. 
Offered spring.
This course addresses all aspects of instrumental jazz instruction (big band and small group) in the public schools. Teaching philosophies, rehearsal techniques and resource materials will be examined; the syllabus includes opportunities to observe and rehearse jazz groups. Enrollment is not limited to traditional jazz instrumentation. Prerequisite: MUED 271 or permission of the instructor.

MUED 482. Orff and Kodály: Literature, Principles and Practices. 1 credit. Offered as needed.
Students will study the repertoire employed in the Orff and Kodály approaches to music education. They will develop skills and understanding of the principles related to these approaches. Work with peers and school children will provide the opportunity to develop teaching skills. May be repeated for credit.

Music Industry

School of Music

MUI 221. Survey of the Music Industry. 3 credits. Offered fall and spring.
An overview of the recording, entertainment and performing arts industries including an examination of the historical, aesthetic and commercial developments of the music industry in the United States.

MUI 231. Legal Aspects of the Music Industry. 3 credits. Offered fall and spring.
An examination of the legal issues affecting the performing arts, recording and music publishing fields. Topics include music rights and licensing, performing arts unions and guilds, artist representation, and contractual relationships. Prerequisite: MUI 221, music major or permission of music industry coordinator.

MUI 250. Portfolio Review. 0 credits. Offered fall and spring.
Portfolio review required to enroll in 300- and 400-level music industry courses. May be repeated once. Prerequisite: MUI 221. Corequisite: MUI 231.

MUI 324. Introduction to Audio Devices. 3 credits. Offered fall and spring.
Introduction to electronic devices utilized in the sound recording industry. Prerequisite: GSCI 121, MUI 250 or permission of instructor.

MUI 330. Music Publishing. 3 credits. Offered fall.
This course will offer a comprehensive overview of the music publication industry. The focus will be upon, but not limited to, mainstream popular music. It will also consider songwriter/publisher relations, self-publication, as well as an examination of art, religious and educational music publishing. Prerequisite: MUI 250 or permission of instructor.

MUI 392. Practicum in Music Industry. 1 credit, repeatable to 4 credits. Offered fall and spring.
Supervised co-curricular music industry activities. Students may receive one credit hour per semester. Prerequisites: MUI 250 and Practicum Approval Form.

MUI 400. Multi-Track Recording Techniques I. 3 credits. Offered fall.
An introduction to contemporary multi-track recording studio techniques. Students will be introduced to recording studio design, psycho-acoustics, mixing techniques, musical instrument digital interface and the mixing console. Prerequisite: MUI 250, MUI 324 or permission of instructor.

MUI 401. Multi-Track Recording Techniques II. 3 credits. Offered spring.
Advanced multi-track recording studio techniques. Students will examine signal processing, musical instrument digital interface, mixdown and editing procedures. Prerequisite: MUI 250, MUI 400 or permission of instructor.

MUI 410. Songwriting. 3 credits. Offered fall.
An introduction to form, lyric development and melodic structure of contemporary songwriting for commercial entertainment applications. The course will include examination of lead sheet writing, demo production, copyright protection and publishing of commercial songs. Prerequisites: MUS 250, MUS 142 or permission of the instructor.

MUI 411. Music and Sound in the Entertainment and Broadcast Media. 3 credits. Offered spring.
An examination of music and sound used in the broadcast and entertainment media from artistic, cultural, technological and business viewpoints. The course will feature field trips to post-production studios, as well as post-production assignments to be completed in our on-campus studio for the following media applications: radio and television/film. Prerequisites: MUI 250 and MUS 324 or permission of the instructor.

MUI 415. Songwriting II. 3 credits. Offered spring.
This course is a continuation in the study of form, lyric development and melodic structure of contemporary songwriting for commercial entertainment applications. This course will also take into account some basic music business aspects important in the music industry directly related to song writers. Prerequisites: MUI 250 or permission of the instructor.

MUI 422. Concert Production and Promotion. 3 credits. Offered fall and spring.
Study of the presentation of cultural and commercial entertainment in the form of concert events from artistic, technical and business viewpoints. The roles of the cultural impresario and concert promoter in contemporary society are examined. Prerequisites: MUI 250 or permission of instructor.

MUI 430. Artist Management. 3 credits. Offered fall.
This course will evaluate the function of musician/recording artist representatives in the music industry. Focus of discussions will include artist development from early career stages to concert tours, unions, recording companies, personal appearances, contractual agreements, etc. Prerequisites: MUI 250 or permission of instructor.
MUAP 435. Marketing of Recorded Music. 3 credits. Offered fall.
Examination of the process of studio production, manufacturing, promotion and distribution of contemporary recordings. Record release programs for independent and major label-controlled products are analyzed. Prerequisite: MUAP 250 or permission of instructor.

MUAP 440. Entrepreneurship in the Music Industry. 3 credits. Offered spring.
The study of business aspects of the music industry including managing, marketing, finance and sales. Students develop a comprehensive music business plan. Completes the College of Visual and Performing Arts writing-intensive requirement for the major. Prerequisites: MUAP 250 or permission of instructor.

MUAP 492. Internship in Music Industry. 3-6 credits. Offered fall and spring.
A supervised off-campus co-curricular learning activity designed to provide practical experience in the music industry. Prerequisites: MUAP 221 and MUAP 232, MUAP 250 or permission of instructor.

Music Instruction, Applied

School of Music
Private and/or group applied lessons are basic areas of study for all music majors and approved minors. All other students, including first year students and transfer students entering in an undeclared major status, who desire applied instruction will be accommodated after declared majors and minors have been scheduled and if time permits. Permission to register must be obtained from the coordinator of the respective applied area.

Small Group Lessons
MUAP 113. 1 credit. Offered spring.
Two hours per week. May be repeated.

MUAP 115. Group Voice for Theatre/Dance Majors. 1 credit. Offered fall and spring.
May be repeated for up to four credits.

Applied Lessons
MUAP 200 level. 1 credit. Offered fall and spring.
One half-hour lesson per week. Five hours minimum practice per week. May be repeated.

MUAP 205. Small Group Voice for Keyboard Majors. 2 credits. Offered fall.
A practical introduction to singing technique and musicianship designed for future choral music teachers and accompanists. Concludes with Vocal Proficiency Examination. Limited to a maximum of eight students. May be repeated for credit. Prerequisite: Sophomore standing in music or permission of the instructor.

MUAP 300 level. (See below for credits.)
One hour lesson per week. Ten hours minimum practice per week for two credits; 14 hours for three credits. May be repeated.

Music Ensembles
Student performing ensembles sponsored by the School of Music provide unique musical experiences for music majors and any other university students who wish to continue developing their performing skills. The numerous large and small choral and instrumental ensembles encompass a wide range of musical styles and repertoire. Although participation in most ensembles requires an audition, several only require the permission of the director. All ensembles must be taken for credit and may be repeated. Students new to JMU should contact the music office during the registration periods for additional information.

Instrumental
MUAP 237. Marching Band (Fall Semester). 2 credits. Offered fall.
The marching band will perform music and drill which is artistically structured. The repertoire will be representative of all styles of music. The marching band is required for two years of wind and percussion majors in the music education degree program.

MUAP 238. Concert Band. 1 credit. Offered fall and spring.
Open to all interested participants. A wide variety of music is utilized to acquaint the student with different types of band literature.

MUAP 239. Symphonic Band. 1 credit. Offered fall and spring.
The JMU Symphonic Band is a select group of brass, woodwind and percussion students who are dedicated to the performance of both traditional and contemporary band literature. The ensemble performs music of all periods and is open to any university student by audition.

MUAP 344. Chamber Orchestra. 1 credit. Offered fall and spring.
Open to all university students. Membership is determined by audition. Music written for chamber orchestra from all periods is studied and performed.

MUAP 345. Symphony Orchestra. 2 credits. Offered fall and spring.
The JMU Symphony Orchestra is a participating member of the American Symphony Orchestra League. Membership is determined by audition and is open to all university students. Literature performed is from the standard symphonic repertoire.

MUAP 346. Wind Symphony. 2 credits. Offered fall and spring.
The JMU Wind Symphony is a highly select group of brass, woodwind and percussion students who are dedicated to the performance of wind orchestra music and chamber music for winds. The ensemble performs music from all periods and is open to any university student by audition in the fall of each academic year.

MUAP 347. Jazz Ensemble. 2 credits. Offered fall and spring.
Instrumental music performance ensemble of the standard “big band” instrumentation whose repertoire reflects jazz styles from the swing era to contemporary jazz. Admission is by audition.

MUAP 348. Jazz Band. 1 credit. Offered fall and spring.
Instrumental ensemble, performing the standard and contemporary repertoire of American music with emphasis on the jazz idiom. Jazz band is open to all JMU students by audition.

MUAP 350. String Ensemble. 1 credit. Offered fall and spring.
A rehearsal and performance ensemble where students of similar technical and musical ability are grouped in traditional string or piano trios, quartets and quintets and present public performances of important compositions from the chamber music literature of all historical periods.

MUAP 351. Woodwind Ensemble. 1 credit. Offered fall and spring.
Woodwind ensembles consisting of quintets or other smaller and larger combinations, limited to specially selected personnel through auditions. Concerts and other performances are prepared from a variety of literature from the classical period to the present.

MUAP 352. Brass Band. 1 credit. Offered fall and spring.
Open to all university students by audition. A select brass and percussion ensemble limited to the standard instrumentation of the “British-style” brass band. The ensemble performs literature of all styles from the extensive brass band tradition. The band typically participates in the annual NABBA Championships.

MUAP 353. Guitar Ensemble. 1 credit. Offered fall and spring.
The performance of guitar music from Renaissance to 20th century for duos, trios and quartets.

MUAP 354. Percussion Ensemble. 1 credit. Offered fall and spring.
The study and preparation for public performance of percussion ensemble literature. The ensemble is open to all university students by audition.
NPS 400. Internship/Practicum in Nonprofit Studies. 4 credits.
(225 hours in agency), 6 credits (400 hours in agency).
Supervised internship/practicum experience in a nonprofit organization setting that allows experimental learning and practice experiences. A research or applied paper, learning journal and presentation based on the experience are required. Prerequisites: NPS 300 and discipline specific elective.

NPS 450. Nonprofit Studies Capstone Seminar. 3 credits.
The capstone seminar is designed to integrate and apply knowledge from the student’s major and the nonprofit studies minor. A substantial, individualized project will strengthen the student’s capabilities in research and/or applied knowledge, information access, and self-directed learning. Prerequisites: NPS 300, NSG 320, NSG 400 and discipline elective. Related elective may be taken concurrently.

Nursing Department of Nursing
NSG 271. Nursing Practicum I. 3 credits. Offered fall, spring and summer.
This first course in the nursing curriculum focuses on the foundation of nursing practice. Through didactic learning, students are introduced to basic nursing theory and knowledge that will be applied throughout the student’s nursing education. In the laboratory, students learn the cognitive and affective processes and the psychomotor skills necessary for basic clinical practice. The clinical component of the course is a culmination of didactic and hands-on learning where students apply and practice what they have learned through the course.

NSG 310. Helping Persons in Pain. 2 credits. Offered spring.
This course, open to students from all majors, is an examination of pain, its impact on people, causes, treatments and the role of health professionals. Emphasis is placed on understanding how people experience pain and its effect on quality of life.

NSG 311. End of Life Care. 1 credit. Offered spring.
Classroom-based exploration of the care of people at the end of life from a multi-disciplinary, holistic perspective. Learning activities include guest speakers, critique of assigned readings, essay and case studies. Students from any related health care major, first year students through seniors are welcome.

NSG 312. Understanding Cancer. 1 credit. Offered fall.
This elective course, open to students from all majors, is a non-technical and practical examination for cancer and its causes, prevention, treatments and impact on people. Emphasis is placed on understanding how people experience and survive cancer. This course is tailored to include cancer-related topics that are of interest to students.

NSG 313. Issues and Applications of Family Caregiving. 1-2 credits. Offered fall, spring and summer.
Students from any major engage in service learning with clients and staff of Caregivers’ Community Network, a program of information, companion care and support for family caregivers. Hours are flexible and activities are tailored to student interests.

NSG 320. The Profession and the Professional I. 2 credits.
This first course in the profession and professional sequence provides an overview of the concepts, definitions and character of professional nursing practice within the context of different economic and reimbursement factors relative to the health care delivery system. The course explores the historical development of nursing as a profession. It promotes socialization as a professional nurse, an understanding of the role and processes for professional nursing practice.

NSG 331. Adult Health I. 6 credits.
This course focuses on the integration of pathophysiological and pharmacologic concepts and principles of nursing process, health promotion, risk reduction, clinical decision making and collaborative management of care for adults across the life span experiencing moderate to severe health alterations. Prerequisite: NSG 271.
NSG 332. Psychiatric Mental Health Nursing. 3 credits.
 solubility and psychosocial manifestations and the psychopharmacological and psychiatric health nursing treatment of selected mental illness. Analysis of the role and practice of psychiatric mental health nursing both as a nursing specialty and as an integral facet of general nursing are emphasized.

NSG 333. Health Assessment. 3 credits.
The health assessment course is designed to develop knowledge and skills necessary to gather, organize and present relevant health data. Emphasis is placed on systematic strategies, frameworks and skills used to conduct both comprehensive and need-specific health assessments for individuals in the context of their family and community.

NSG 340. The Profession and the Professional II. 2 credits.
This second course in the profession and professional sequence examines the beginning phases of the research process and investigates the ethical and legal realities of the current health care delivery system and of professional nursing practice. It explores the role of nursing in health care policy development. The beginning phases of career management are examined.

NSG 341. Nursing Care of Children and Their Families. 3 credits.
This course applies the nursing process to the care of well, acutely and chronically ill, and special needs children and their families within the context of their environment. Emphasis is on anatomical, physiological and developmental differences among neonates, infants, children and adolescents that influence care. Theory, research, evidenced-based practice and critical thinking are foundations.

NSG 348. Advanced Skills Lab. 2 credits.
In this laboratory course, students learn additional psychomotor, cognitive and affective skills that are foundational to nursing practice. Focuses of the course include acute care skills, strategies to manage stress, alternative health techniques and therapeutic group processes.

NSG 380. Advanced Skills Lab. 2 credits.
Students apply concepts, principles, theories and skills in the nursing care of adults experiencing moderate to severe challenges to health. In hospital settings, students are exposed to a wide variety of clinical skills gaining beginning practice in planning and facilitating nursing care for clients and their families.

NSG 382. NSG Practicum: Nursing Care of Children and Their Families. 2 credits.
Students apply concepts, principles, theories and skills in the nursing care of children experiencing moderate to severe challenges to health. In hospital settings, students are exposed to a wide variety of clinical skills gaining beginning practice in planning and facilitating nursing care for children and their families.

NSG 383. NSG Practicum: Psychiatric Mental Health Nursing. 1 credit.
This practicum the pathophysiology and psychosocial manifestations, and the psychopharmacological and psychiatric mental health nursing treatment of selected mental illnesses. Analysis of the role and practice of psychiatric mental health nursing both as a nursing specialty and as an integral facet of general nursing are emphasized.

NSG 430. The Profession and the Professional III. 3 credits.
The third course in the profession and professional sequence explores the research process and utilization of research and theory in professional practice. The course also covers leadership and management theory, group dynamics and the group process, Organizational Theory, and “Change Theory” related to health systems change. Career management work continues in this course through a resume, portfolio and interviewing skills workshop.

NSG 431. Adult Health II. 6 credits.
This course is a continuation of Adult Health I and focuses on the integration of pathophysiologic and pharmacologic concepts and principles of nursing process, health promotion, risk reduction, clinical decision making and collaborative management of care for adults across the life span experiencing moderate to severe and complex health alterations.

NSG 432. Women’s Health. 3 credits.
This course focuses on synthesis of concepts and principles utilized in health promotion, risk reduction, clinical decision-making, and management of women’s health care. Focuses include women’s health issues, perinatal care of mothers and infants and gynecological health.

NSG 433. Community Health: Health Assessment of Vulnerable Populations in the Community. 2 credits.
In Part I of this course, students develop the knowledge, skills and ability to conduct and interpret systematic assessments of vulnerable aggregates in community settings. The impact of increasing societal changes and cultural diversity on vulnerability across the life span will be emphasized. Theoretical concepts of health promotion and disease prevention of vulnerable populations will be presented emphasizing Health People 2010 objectives. Part II of the course will develop the knowledge and skills necessary to gather, organize and present relevant data on target populations and entire community assessments. The influence of political, socioeconomic and ecological issues on the health of populations is examined.

NSG 440. Transition to Practice. 3 credits.
This course explores current factors having impact on the transition to the professional practice of nursing. The course explores the dissemination and utilization of research in nursing practice. Its focus on career planning and preparation for NCLEX Testing and professional practice includes module based case studies and NCLEX practice testing. Consideration of future directions, trends and opportunities in health care delivery and professional nursing practice are also examined.

NSG 460. Pathophysiology and Pharmacology. 3 credits.
This course, offered for RN-MSN program students, provides an examination of complex physiologic responses and clinical sequel in major body systems in relation to pathologic processes. Emphasis is placed upon physiologic compensation and defense responses. Pharmacologic management of pathology is investigated. Prerequisite: Admission to RN-MSN program.

NSG 461. Issues in Contemporary Nursing Practice. 3 credits.
This course, offered for RN-MSN program students, examines issues and trends of greatest concern to professional nursing practice today. Historical, societal, political, and economic influence and future trends will be explored. Legal and ethical dimensions of nursing will be discussed. A seminar format will be used emphasizing professional presentation of issues. Prerequisite: Admission to RN-MSN program.

NSG 463. Professional Role Transition. 3 credits.
This course, offered for RN-MSN program students, provides an expansion of concepts/theories from student’s initial historical review, nursing theory, leadership and management roles as well as coping strategies for role stress will be explored. Seminar format will be used. Prerequisite: Admission to RN-MSN program.

NSG 464. Introduction to Nursing Research. 3 credits.
This course, designed for RN-MSN students, will focus on the study of research methods that generate quantitative and qualitative data. Students will examine the research process with an emphasis on critique of research methodologies and application of research findings to nursing practice. Prerequisite: Admission to RN-MSN program.

NSG 465. Clinical Practicum Elective. 1-5 variable credits.
This course facilitates the RN student’s transition into a professional nursing role through a BSN/faculty mentored clinical practicum experience in a student selected clinical specialty area. The student will articulate individual objectives. An individual plan to meet the course and student’s objectives will be developed by the student and approved by the faculty. Prerequisites: Completion of NSG 321 and NSG 463.
NSG 466. Community Clinical Practicum. 3 credits.
This practicum, for RN-MSN students, transitions practice into the BSN role through mentored clinical experiences at selected community sites. Emphasis is on collaborative nursing care with individuals, families, and groups within the community. Experiences include concepts of health promotion and disease prevention and management of acute or chronic illness. Prerequisite: Admission to RN-MSN program.

NSG 467. School Nursing Practice: Addressing the Health Needs of Vulnerable Populations within the Context of Schools. 3 credits.
This course focuses on school health services for students with low-incidence disabilities. Content emphasizes the guiding principles of collaborative, comprehensive, coordinated, culturally competent, developmentally appropriate, family-centered and inclusive health and educational service provision. This is a Blackboard course that will be available for students enrolled in the SNAPP program.

NSG 468. Caring for the Public’s Health: Community Health Nursing. 3 credits.
This course provides RN to BSN students a perspective of professional nursing at the community level of practice. Course content will provide an overview of specific issues and societal concerns that affect community health nursing practice including historical impact of public health, epidemiology, health promotion and disease prevention; vulnerable populations; communicable disease risk and prevention; and diversity of the role of the community health nurse. Prerequisite: Admission to RN-MSN program.

NSG 469. Collaborative Teaming: Working Together to Improve Outcomes for Students with Low-Incidence Disabilities. 3 credits.
This course focuses on collaborative teaming as an approach to delivering inclusive services to students with low-incidence disabilities. Information on models of teamwork, group decision making, team process, leadership and effective communication will be included. Discussion will focus on the roles of various disciplines and parents and team members. This course is part of the SNAPP Scholars program. Prerequisite: NSG 467.

NSG 470. NSG Practicum: Community as Client. 2 credits.
This practicum provides a framework for identifying, analyzing and planning for health care needs of vulnerable populations based on the objectives of Health People 2010. The concepts of community as client and population-focused practice are presented with an emphasis on understanding the relationship between individual, family and community needs. Students will use the nursing process to perform community-focused assessment and service learning interventions while applying concepts of health promotion, disease prevention and health education to the care of vulnerable groups.

NSG 480. NSG Practicum: Capstone. 6 credits.
An in-depth focused practicum experience for JMU senior nursing students. The purpose of the capstone experience is to help students gain confidence in time management, critical thinking, diagnostic reasoning, documentation and psychomotor skills under the direct supervision of clinical preceptors.

NSG 481. NSG Practicum: Acute Adult Health II. 1 credit.
In this course, students synthesize and apply concepts, principles, theories and skills in the nursing care of adults experiencing moderate to multi-system challenges in health. On acute and critical care nursing units, students will work in small groups to plan and facilitate care for multiple clients.

NSG 482. NSG Practicum: Home Health Case Management. 1 credit.
In this setting, students are provided an opportunity to learn and apply case management concepts. Students provide nursing care in the home for persons and families experiencing chronic illness. Using a case management theoretical framework, students coordinate and deliver services through visits with agency nurse case managers with direct care giving responsibilities. Issues of chronic illness, coping and extended care are explored.

NSG 483. NSG Practicum: Women’s Health. 1 credit.
Working in teams, students coordinate and provide nursing care for women and their families experiencing childbirth or gynecological treatment. Students observe and experience a variety of nursing roles, engage in peer performance appraisal, and promote staff and peer professional development. The application of research findings to practice is emphasized.

Nutrition

Department of Health Sciences

NUTR 140. Contemporary Foods (2, 2). 3 credits. Offered fall and spring.
Basic principles of contemporary food selection, purchasing, planning, preparation and service. Laboratory activities acquaint the student with the preparation and evaluation of quality products in the various food groups.

NUTR 280. Nutrition for Wellness. 3 credits. Offered fall and spring.
Students will study the impact of nutrition on wellness by learning nutrients, their functions in the human body, food sources and appropriate intake levels. Controversies surrounding use of various nutrients for improvement of health and well-being will be discussed.

NUTR 295. Foundations of Nutrition Practice. 2 credits. Offered spring.
An introduction to the profession of dietetics, credentialing processes in nutrition/dietetics, careers available in the field and some basic skills needed for the profession.

NUTR 360. Management in Dietetics. 3 credits. Offered fall.
Application of management concepts, theories and principles to dietetics with a focus on the work environments (clinical and foodservive) in which registered dietitians must effectively practice. Prerequisites: Dietetics majors only. NUTR 280, NUTR 295 or permission of instructor.

NUTR 362. Food Service Systems. 3 credits. Offered spring.
An integration of menu planning, food procurement, equipment selection and layout to provide quality food service in a variety of food systems. Prerequisite: NUTR 280 or equivalent.

NUTR 363. Quantity Food Production (1, 6). 3 credits. Offered fall and spring.
The principles of quantity food production and service are studied. Prerequisites: NUTR 143, NUTR 280 and prior arrangement with the instructor.

NUTR 380. Global Nutrition. 3 credits. Offered fall and spring.
A study of food habits from around the world and their contributions to nutritional adequacy. Factors affecting global food consumption behaviors including sociocultural practices, religion, health beliefs, agricultural practices, economics, politics and education are explored.

NUTR 382. Sports Nutrition. 3 credits. Offered fall.
A study of the relationship of nutrition and athletic performance. Identification of the effects of age, sex, body build, environment and state of health on energy needs and energy sources during physical activity. Prerequisite: NUTR 280.

This course introduces nutrition as a disease therapy and the role of the clinical dietitian as a member of the health care team. Topics covered include nutrition screening and assessment, medical records documentation, basic dietary modifications and patient/family counseling. Prerequisites: NUTR 140, NUTR 280 and NUTR 295.

NUTR 385. Nutrition Throughout the Life Cycle. 3 credits. Offered fall.
A study of the nutritional needs throughout the life cycle and the development of food habits. Nutrition assessment and nutrition education from prenatal health through infancy, childhood, adolescence, adulthood and old age are emphasized. Prerequisite: NUTR 280.

NUTR 386. Community Nutrition. 3 credits. Offered spring.
A study of human nutrition and health problems from a community perspective, programs and policies related to nutrition at local, state and federal levels including preventive nutrition or wellness and approaches and techniques for effective application and dissemination of nutrition knowledge in the community. Prerequisite: NUTR 280.
NUTR 395. Introduction to Patient Care in Dietetics. 2 credits. Offered fall.
A study of the concepts of patient care in dietetics, skills needed for
medical nutrition therapy and the diettian's role on the health care team.
Prerequisite: Must be dietetics major.

NUTR 448. Experimental Foods [1, 4]. 3 credits. Offered fall.
An introduction to research in foods. Different techniques of food
preparation are studied and evaluated for the most acceptable methods
to obtain standard food products. Prerequisites: NUTR 140, organic
chemistry and statistics.

NUTR 455/ KIN 424. Theories and Practices of Weight
Management. 3 credits. Offered spring.
An examination of the physiological, psychological and environmental
theories of obesity. Current trends in obesity research are emphasized.
A case study and laboratories are used to provide students with practical
experience in constructing a weight management program. Prerequisite:
BIO 270, BIO 290, NUTR 280 or permission of the instructor.

NUTR 460. Computer Systems for Foods and Nutrition. 3 credits.
Offered spring.
Introduction to food and nutrition computer systems. Emphasis is placed
on the role of computers in nutritional assessment, food service
administration, nutrition education and food technology. Prerequisites:
NUTR 360, NUTR 482 and successful completion of the Tech Level I test.

NUTR 482. Nutrition and Metabolism (2, 2). 3 credits. Offered fall.
A study of the nutrients, their roles in intermediary metabolism, the effects
of genetic errors in metabolism, nutritional deficiencies and means of
assessing nutritional status. Agencies and programs concerned with
nutrition and current trends in nutrition research are emphasized.
Prerequisites: NUTR 280, physiology, biochemistry, statistics, and previous or concurrent anatomy.

NUTR 484. Clinical Nutrition II (2, 2). 3 credits. Offered spring.
A study of the use of diet in preventing illness and as a means of treating
disease. Emphasis is given to patient education. Prerequisites: NUTR
384 and NUTR 482.

NUTR 490. Field Experience in Dietetics. 3 credits. Offered summer.
Students participate in field experience relating to their major area of
dietetics and their career goals under the coordination of a dietetics faculty
member. On-the-job supervision will be provided by the participating hospital
dietitians. Prerequisites: NUTR 384, NUTR 385. Application for enrollment
must be completed through the course instructor in the fall semester prior
to the summer in which it will be taken. Cumulative GPA of 2.0 required.

NUTR 495. Senior Seminar in Dietetics. 2 credits. Offered fall.
Students will be introduced to research in dietetics and conduct a senior
research project. The Code of Ethics and Standards of Practice of the
American Dietetic Association will be investigated, and students will
prepare for their postgraduate dietetic internship.

NUTR 496. Special Studies in Nutrition/Dietetics. 1-3 credits.
Offered fall and spring.
This course is designed to give the student in dietetics an opportunity to
complete independent study, professional conference participation and/
or research under faculty supervision. Prerequisite: Permission of the
coordinator of the dietetics program.

NUTR 499. Honors. 6 credits. Offered fall and spring.
Year course.

Philo

Department of Philosophy and Religion

PHIL 101. Introduction to Philosophy. 3 credits. Offered fall and spring.
An introduction to the basic problems and concepts of philosophy—the
nature of man and the self, ethics, theories of knowledge, philosophy of
religion, etc. as revealed in the writings of major philosophers.

PHIL 120. Critical Thinking. 3 credits. Offered fall and spring.
An introduction to the techniques for analyzing and evaluating
information in everyday experience. The functions of language will be
discussed. Techniques for judging the strengths of arguments and the
probable truth of the arguments’ premises will be examined.

PHIL 210. Philosophy Through Film. 3 credits. Offered summer.
This course combines feature length films and classic philosophical
writings as points of departure for considering perennial philosophical
questions such as: What is real? (Metaphysics) How can I know?
(Epistemology) What is of value? (Morality).

PHIL/REL 218. Philosophy of Religion. 3 credits. Offered fall.
An intensive examination of religion from the standpoint of philosophical
thinking with particular emphasis on the way philosophers view such
problems as the existence of God, evil, immortality, religious language, etc.

PHIL 250. Introduction to Symbolic Logic. 3 credits. Offered fall and spring.
An introduction to the languages and techniques of propositional logic
and first-order quantification theory.

PHIL 282. Problems in Applied Ethics. 3 credits.
Ethical theories are used to analyze contemporary moral issues in areas
such as business and health care. Course content varies.

PHIL 270. Introduction to Ethics. 3 credits. Offered fall and spring.
An introductory study of the basic ethical theories past and present with
some application to moral problems.

PHIL 285. Philosophy, Art and Literature. 3 credits.
This course will study artistic works (literary or otherwise) for their
philosophical content. Related issues in the philosophy of art for example,
the nature of tragedy, theories of interpretation may also be considered.

PHIL 300. Knowledge and Belief. 3 credits.
An extensive examination of theories of knowledge and philosophical
problems concerning knowledge and belief. Prerequisite: PHIL 101 or
permission of the instructor.

PHIL 310. Symbolic Logic. 3 credits. Offered spring 2007.
The study and application of the principles and techniques of modern
deductive logic to natural language. Also, examination of the properties
of formal systems and of the logical implications and paradoxes of language.

PHIL 311. Metaphysics. 3 credits.
Examination of central questions regarding the fundamental nature of reality.
Possible topics: universals and particulars, possibility and necessity, mind
and body, identity over time, free will causality, time and God. Prerequisite:
At least one other philosophy course or approval of the instructor.

PHIL 312. Causal and Explanatory Thinking. 3 credits.
Considers key strategies for inferring the cause (or explanation) of real-
world events. The course examines both the conceptual and logical
foundations of causation and explanation, as well as their application
to a broad range of significantly important cases (such as from
intelligence, information analysis, business or politics). Prerequisite: Prior
philosophy course or instructor consent.

PHIL 313. Counterfactual Reasoning. 3 credits.
Examines major work on the conceptual and logical analysis of
counterfactuals (statements about what would occur in particular
circumstances) to improve reasoning about alternatives and their
consequences. Skills will be developed by considering cases relevant to
future leaders in fields such as intelligence, information analysis,
business or politics. Prerequisite: PHIL 120 or instructor consent.

PHIL 314. Rational Decision Theory. 3 credits. Offered fall 2006.
Explores the fundamental principles of making reasonable choices. The
course considers both the conceptual, epistemological and logical insights
of these principles, as well as applies them to numerous real-world cases
faced by recent decision-makers in areas such as intelligence, information
analysis, business or politics. Prerequisite: PHIL 120 or instructor consent.
PHIL 315. Logic and Legal Reasoning. 3 credits. Not offered 2006-2007. Application of symbolic logic (first-order logic with identity) to legal language and deductive legal argument. Will include close logical analysis of at least one of the following: Supreme Court brief, Supreme Court decision, Supreme Court oral argument. Prerequisite: PHIL 250 or instructor consent.

PHIL 320. Inductive Logic. 3 credits. Introduction to inductive logic and philosophical problems it raises. Topics discussed: the traditional problem of induction, the Goodman paradox and the new riddle of induction, the probability calculus and kinds of probability, Mill's methods of experimental inquiry and the nature of causality, abduction (inference to the best explanation) and confirmation theory.

PHIL 325. Crime, Punishment and Justice. 3 credits. Offered fall 2006. Theories of criminal punishment are examined in the context of philosophical theories of justice and in conjunction with material from the social sciences on crime, criminal offenders and the effects of penal sanctions.

PHIL 330. Moral Theory. 3 credits. Offered fall and spring. An examination, at the intermediate level, of both classical and contemporary moral theories. Critical analysis of the normative and meta-ethical issues these theories raise.

PHIL 335. The Individual, the State and Justice. 3 credits. Offered fall 2006. Mid-level class in political philosophy. Will read classic and/or contemporary texts in philosophy influential on political thought. Focus may be on views of the justification for and role of the state. Consideration may also be given to the proper relationship of individuals and the state, political freedom autonomy. Prerequisite: PHIL 101 or approval of the instructor.

PHIL 340. Ancient Greek Philosophy. 3 credits. Offered fall and spring. This course traces philosophical problems raised by the pre-Socratics, Parmenides, Heraclitus, Pythagoras and the Sophists through their treatment by Plato and Aristotle. Emphasis is placed on selected writings of Plato and Aristotle. Prerequisites: PHIL 101 and junior standing or permission of the instructor.

PHIL 341. Modern Philosophy. 3 credits. Offered fall and spring. A selective survey of major issues and thinkers in Western philosophy from Descartes to Kant.

PHIL 342. Medieval Philosophy. 3 credits. Offered spring 2007. A survey of the major issues and thinkers of medieval philosophical world with emphasis on the philosophical writings of those within the Western tradition, such as Augustine, Anselm, Aquinas and Scotus. Prerequisite: One other philosophy course or approval of the instructor.

PHIL 344. Existentialism. 3 credits. Offered fall 2006. An examination of existentialism and its major spokesmen including such authors as Kierkegaard, Nietzsche, Sartre, Camus, Marcel and Heidegger. Prerequisite: PHIL 101 or permission of the instructor.

PHIL 367. Topics in Philosophy of Law. 3 credits. Offered spring 2007. Examination of the philosophical issues raised by the law, including the nature, foundations and limits of the law, theories of its interpretation and the fundamental interest it aims to protect. Prerequisite: PHIL 270, PHIL 262, PHIL 330 or PHIL 335.

PHIL 370. American Philosophy. 3 credits. Offered fall 2008. A study of the main philosophical ideas in America, especially pragmatism, with particular emphasis being given to Pierce, James, Royce, Dewey and Whitehead. Prerequisite: PHIL 101 or permission of the instructor.

PHIL/REL 375. Nineteenth Century Philosophy and Theology. 3 credits. A selected study of 19th-century thought, with emphasis on controversies concerning the nature and limits of reason, the ultimate meaning of history, and the inner meaning and social significance of religion. Pertinent thinkers include Hegel, Marx, Schleiermacher, Kierkegaard, Nietzsche and others.

PHIL/ART 380. Seminar in Aesthetics. 3 credits. Offered fall and spring. Readings and discussions in the persistent philosophical problems of the arts, centering on consideration of the work of art, the artist and the audience. Prerequisite: GART 200, GARTH 205, GARTH 208 or GPHIL 101.

PHIL/REL 385. Buddhist Thought. 3 credits. Offered fall 2006. Buddhist thought from its origins to the contemporary world in South Asia and East Asia. Emphasis on the understanding of the human condition, analysis of the mind and of the nature of the cosmos, and the expression of Buddhist thought in the fine arts and social activism.

PHIL 390. Special Topics in Philosophy. 3 credits. Offered fall and spring. Topics for this intermediate-level course may be drawn from any area or period of philosophy chosen by the instructor. The course is designed primarily for Philosophy majors and minors, but any suitably prepared student may take the course with the permission of the instructor. Prerequisite: GPHIL 101 or instructor consent.

PHIL 392. Philosophy of Mind. 3 credits. Offered fall 2006. An examination of competing theories of the intrinsic nature of mental states and mental processes, including careful consideration of questions concerning the relation between the mind and the physical world. Prerequisite: GPHIL 101 or approval of the instructor.

PHIL 395. Philosophy and Scientific Inquiry. 3 credits. An analysis of philosophical problems in science, such as the nature of scientific explanation, theory formation and confirmation of scientific hypotheses. Issues discussed include the role of models in theory formation, the relationships between experience and reasoning in theory construction and confirmation and the roles of paradigms in scientific thought. Prerequisite: GPHIL 101 or permission of the instructor.

PHIL 430. Analytic Philosophy. 3 credits. An examination of the origins and development of contemporary philosophical analysis with special attention given to the nature and uses of language as well as logical structures of confirmation and explanation. Prerequisite: PHIL 101, GPHIL 250 or permission of the instructor.

PHIL 440. Advanced Moral Philosophy. 3 credits. Class will closely examine recent or historical work in (largely normative) moral philosophy, including at least two of the following: teleology (e.g., virtue theory), deontology, (e.g., Kantianism) and consequentialism (e.g., utilitarianism). Prerequisite: PHIL 101, PHIL 330 or approval of the instructor.

PHIL 445. Advanced Political Philosophy. 3 credits. In a seminar format we will examine, in depth, questions of political philosophy. These may include: autonomy, democracy, freedom, impartiality, universalism, toleration and the normative priority of individuals and communities. Prerequisite: PHIL 101, PHIL 335 or approval of the instructor.

PHIL 460. Topics in Classical Philosophy. 3 credits. Plato offered fall 2006. An advanced study of major issues in or the writings of one or more thinkers in ancient Greece through the Western medieval period. May be repeated for credit with change of topics. Prerequisite: PHIL 340 or permission of instructor.

PHIL 485. Topics in Modern Philosophy. 3 credits.

PHIL 470. Topics in Contemporary Continental Philosophy. 3 credits. Intensive study of one or two major thinkers or themes in 20th-century European philosophy. Possible topics include figures such as Heidegger, Habermas, Foucault or Derrida; or themes such as phenomenology, critical theory, post-structuralism or the critique of Enlightenment ideals. May be repeated for credit when topics vary.

PHIL 470. Topics in Contemporary Continental Philosophy. 3 credits.
PHIL 475. Philosophy Seminar. 3 credits. Offered fall and spring.
Seminar topics may be drawn from any area or period of philosophy chosen by the instructor. The course is designed primarily for seniors majoring in Philosophy, but any suitably prepared student may take this course with the permission of the instructor. Prerequisite: Senior philosophy major or permission of instructor. May be repeated for credit.

PHIL 478. Advanced Seminar in Critical Reasoning. 3 credits.
Offers intensive investigation of a more specialized or newer topic in critical thinking. Studies might provide an extended consideration of a particularly significant real-life example, apply analytic reasoning tools to a new problem not typically considered or further develop those tools themselves. Prerequisite: PHIL 120 or instructor consent.

PHIL 490. Special Studies in Philosophy. 3 credits. Offered fall and spring.
Designed to give capable students an opportunity to complete independent study in philosophy under faculty supervision.

PHIL 491. Special Studies in Critical Reasoning. 3 credits.
Provides students with an opportunity to individually initiate and undertake, under faculty supervision and direction, an advanced research project in the application or theory of critical reasoning. Prerequisite: Instructor consent required for all students.

PHIL 499. Honors. 6 credits. Offered fall and spring.
Year course.

Physics

Department of Physics

PHYS 105. Foundations of Physics. 1 credit. Offered once a year.
An introduction to the study of physics and the physics department. Presentations are given by faculty and students to acquaint students with current research opportunities in the department and the application of physics to broad spectrum of topics.

PHYS 120. The Solar System. 3 credits. Offered once a year.
An introductory course in astronomy, which includes the following topics: motions of celestial objects, eclipses, historical development, the nature of light, telescopes, properties and evolution of the solar system.

PHYS 121. Stars, Galaxies and Cosmology. 3 credits. Offered once a year.
An introductory course in astronomy which includes the following topics: the Sun, stellar properties, stellar evolution, black holes, the Milky Way, galactic evolution, quasars, cosmology.

PHYS 122. Observational Astronomy for Beginners (0, 2).
1 credit. Offered on demand.
An introduction to naked-eye and telescopic astronomical observations. Wells Planetarium will be used when weather conditions prohibit outdoor observations.

PHYS 125. Principles of Physics With Biological Applications I (3, 2). 4 credits. Offered once a year.
A study of fundamental physical principles covering areas of mechanics, thermal energy and fluids, emphasizing topics pertinent to life processes. Realistic biological examples are used to illustrate the relationship between physics and the life sciences. Laboratory exercises explore the application of physics to living systems. Prerequisite: MATH 125 or equivalent.

PHYS 126. Principles of Physics With Biological Applications II (3, 2). 4 credits. Offered once a year.
The second course is a study of physical principles. Topics include elasticity, wave motion, sound, electricity and magnetism, geometrical and physical optics, and electromagnetic radiation and radioactivity. Prerequisite: PHYS 125.

*PHYS 140. College Physics I. 3 credits. Offered fall and spring.
The first semester of a non calculus sequence in general physics. Topics include principles of mechanics, thermal properties of matter, wave motion and sound. Prerequisite: Algebra and trigonometry.

PHYS 150. College Physics II. 3 credits. Offered fall and spring.
The second semester of a non calculus sequence in general physics. Topics include electric charges, circuits, magnetism, optics, atomic and nuclear physics. Prerequisite: PHYS 140.

PHYS 140L*-150L. General Physics Laboratories. 1 credit each semester. Each course offered once a year.
These laboratory courses are designed to complement and supplement the PHYS 140-150L and PHYS 240-250L lecture courses. The laboratory and lecture portions must be taken concurrently. Corequisite for PHYS 104L: PHYS 140 or PHYS 240. Prerequisite for PHYS 150L: PHYS 140L and either PHYS 140 or PHYS 240. Corequisite for PHYS 150L: PHYS 150L or PHYS 250.

PHYS 215. Energy and the Environment. 3 credits. Offered once a year.
Energy use, sources and trends; fossil fuels, heat-work conversions, thermodynamic restrictions and electric power production; nuclear fission reactors and fusion energy; solar energy and technologies; alternative energy sources; energy storage; energy conservation; issues of waste and safety. Environmental, social and economic aspects will be discussed. Not open to ISAT majors scheduled to take ISAT 212 as part of their degree requirements. Prerequisites: One college course in science and one in mathematics.

PHYS 220. General Astronomy I: The Night Sky, the Solar System and Stars. 3 credits. Offered once a year.
PHYS 220 is the first in a two-course sequence in general astronomy intended for students with a background in physics. Topics covered include: appearance and movements of the night sky; astronomical coordinate systems and timekeeping; seasons, eclipses and planetary configurations; planetary motions and gravitation; fundamental forces; electromagnetic radiation and its detection; content, structure, formation and evolution of solar system; observations and models of the Sun, stellar interior models; stellar magnitudes and spectra, classifications; Hertzsprung-Russell diagram. Prerequisite: PHYS 140 or PHYS 240.

PHYS 221. General Astronomy II: Star Systems, the Interstellar Medium and Cosmology. 4 credits. Offered once a year.
PHYS 221 is the second in a two-course sequence in general astronomy intended for students interested in science. Topics covered include: stellar evolution; variability and high-energy phenomena in stars and multiple-star systems; content, structure, and dynamics of the Milky Way, external galaxies, quasars and AGN; large-scale structure and the distance scale of the universe; the Big Bang model and alternative cosmologies, possible geometries and eventual fates of the universe. An observational astronomy laboratory component is part of this course. The lab component will cover basics of telescope set up and operation as well as astronomical coordinate systems. Prerequisite: PHYS 220.

PHYS 240. University Physics I. 3 credits. Offered fall and spring.
Kinematics, dynamics, energy and momentum conservation, oscillatory motion, fluid mechanics and waves. Corequisite: MATH 232 or MATH 225.

PHYS 247. Data Acquisition and Analysis Techniques in Physics. 2 credits.
This laboratory supplements the PHYS 240/250 lecture courses. Topics covered include: conception, design and performance of experiments in physics, as well as the analysis of data and handling of experimental uncertainties. Corequisite: PHYS 250.

PHYS 250. University Physics II. 3 credits. Offered fall and spring.
Electric forces, fields and potentials; capacitance, dielectrics, resistance and DC circuits; magnetic fields, induced electric fields, inductance and AC circuits; geometrical optics, interference, diffraction and polarization. Prerequisite: PHYS 240. Corequisite: MATH 236.

PHYS 260. University Physics III. 4 credits. Offered once a year.
Rotational kinematics and rotational dynamics; static equilibrium and elasticity; universal gravitation and orbital mechanics; temperature, heat, heat engines, entropy and kinetic theory; Gauss’ law, electric potential and capacitance; magnetic fields, induced electric fields and inductance; displacement current and electromagnetic waves; and the special theory of relativity. Prerequisite: "C" or better in PHYS 250 or PHYS 150. Corequisites: MATH 237 and PHYS 247 or PHYS 150.
PHYS/MATH 265. Introduction to Fluid Mechanics. 4 credits.
Offered fall and spring.
Introduces the student to the application of vector calculus to the
description of fluids. The Euler equation, viscosity and the Navier-Stokes
equation will be covered. Prerequisites: MATH 237 and MATH 260.

PHYS 270. Modern Physics. 4 credits. Offered once a year.
A course in modern physics, consisting of a discussion of the experimental
basis for and fundamental principles of quantum physics, with
applications to atomic structure and nuclear physics. Prerequisite: PHYS 280 or consent of instructor.

PHYS/CHEM/MATS 275. An Introduction to Materials
Science. 3 credits. Offered once a year.
An introduction to materials science with emphasis on general properties
of materials. Topics will include crystal structure, extended and point defects and
mechanical, electrical, thermal and magnetic properties of metals, ceramics,
electronic materials, composites and organic materials. Prerequisite:
CHEM 131, PHYS 150, PHYS 250, ISAT 212 or permission of the instructor.

PHYS 295. Laboratory Apparatus Design and Construction.
1 credit. Offered on demand.
An introduction to the design and fabrication of laboratory apparatus using
machine tools. Prerequisites: PHYS 250 and permission of the instructor.

PHYS 297. Topics in Physics. 1-4 credits each semester. Offered on demand.
Topics in physics at the second year level. May be repeated for credit
when course content changes. Topics selected may dictate prerequisites.
Students should consult instructor prior to enrolling for course. 
Prerequisite: Permission of the instructor.

PHYS 320. Astronomical Techniques. 3 credits. Offered on demand.
An overview of modern astronomical techniques with an emphasis on
quantitative data collection and analysis. The design and use of various
astronomical devices will be covered. Topics will include visible light
telescopes and radio telescopes as well as CCD data collection in addition
An overview of modern astronomical techniques with an emphasis on
quantitative data collection and analysis. The design and use of various
astronomical devices will be covered. Topics will include visible light
telescopes and radio telescopes as well as CCD data collection in addition
to other current astronomical techniques. Data reduction software will
also be addressed. Prerequisites: PHYS 220 and PHYS 221.

PHYS 335. Modern Physics II. 4 credits. Offered on demand.
A continuation of PHYS 270, with applications to molecules, the physics
of condensed matter and nuclear physics. Prerequisite: PHYS 270.

PHYS/MATS 337. Solid State Physics. 3 credits. Offered once a year.
A study of the forces between atoms, crystal structure, lattice vibrations
and thermal properties of solids, free electron theory of metals, band
theory of solids, semiconductors and dielectrics. Prerequisite: PHYS 270
or consent of instructor.

PHYS 340. Mechanics. 3 credits. Offered once a year.
Application of fundamental laws of mechanics to particles and rigid
bodies. Topics include statics, dynamics, central forces, oscillatory motion
and generalized coordinates. Prerequisites: PHYS 260 and MATH 238.

PHYS/MATH 341. Nonlinear Dynamics and Chaos. 3 credits.
Offered spring.
Introductory study of nonlinear dynamics and chaos intended primarily
for upper-level undergraduates in science or mathematics. Topics include
stability, bifurcations, phase portraits, strange attractors, fractals and
selected applications of nonlinear dynamics in pure and applied science.
Computers may be utilized for simulations and graphics. Prerequisites:
MATH 238 and MATH 248.

PHYS 342. Mechanics II. 3 credits. Offered on demand.
A continuation of PHYS 340 including Lagrangian dynamics, rigid body
motion and the theory of small oscillations. Prerequisite: PHYS 340.

PHYS 347. Advanced Physics Laboratory (0, 0, 0). 3 credits. Offered
once a year.
An advanced laboratory in which students are introduced to
experimentation in several areas of physics while gaining experience in
experiment design, data analysis, formal report writing and
presentations. Prerequisite: PHYS 270.

PHYS 350. Electricity and Magnetism. 3 credits. Offered once a year.
A study of the electrostatic field, the magnetic field, direct and alternating
currents and electromagnetic waves. Prerequisites: PHYS 280 and
MATH 238.

PHYS 355. Analog Electronics (2, 4). 4 credits. Offered once a year.
DC and AC circuits, spectral and pulse circuit response, semiconductor
physics and simple amplifier and oscillator circuits. Prerequisite PHYS
250 or permission of the instructor.

PHYS/MATH 365. Computational Fluid Mechanics. 3 credits.
Offered once a year.
Applications of computer models to the understanding of both
compressible and incompressible fluid flows. Prerequisites: MATH 249,
either MATH 238 or MATH 336, MATH/PHYS 265, and PHYS 340.

PHYS/MATH 366E. Computational Solid Mechanics. 3 credits.
Offered once a year.
Study of statics, dynamics, central forces, oscillatory motion
and thermal properties of solids, free electron theory of metals, band
theory of solids, semiconductors and dielectrics. Prerequisite: PHYS 270.

PHYS 371. Introductory Digital Electronics (2, 4). 2 credits.
Offered once a year.
Transistors, integrated circuits, logic families, gates, latches, decoders,
multiplexers, multivibrators, counters and displays. Prerequisite: A grade
of "C" in PHYS 150 or PHYS 250 or permission of instructor.

PHYS 372. Microcontrollers and Their Applications (2, 4).
2 credits. Offered once a year.
Microcontrollers, their instructions, architecture and applications.
Prerequisite: PHYS 371 or consent of instructor.

PHYS 373. Interfacing Microcomputers (2, 4). 2 credits. Offered
once a year.
An overview of computer technology and the development of
simple electronic circuits and their applications. Prerequisite: PHYS 210.

PHYS 380. Thermodynamics and Statistical Mechanics.
3 credits. Offered once a year.
A treatment of the thermal properties of matter from both macroscopic
and microscopic viewpoints. Topics include the laws of thermodynamics,
heat, work, internal energy, entropy, elementary statistical concepts,
ensembles, classical and quantum statistics and kinetic theory.
Approximately equal attention will be given to thermodynamics and
statistical mechanics. Prerequisites: PHYS 270.

PHYS/MATS 381. Materials Characterization (Lecture/Lab
course). 3 credits. Offered once a year.
A review of the common analytical techniques used in materials science
related industries today, including the evaluation of electrical, optical,
structural and mechanical properties. Typical techniques may include
Hall Effect, scanning probe microscopy, scanning electron microscopy,
elliptometry and x-ray diffraction. Prerequisite: PHYS/MATS 275, ISAT/
MATS 431 or GEOL/MATS 395.

PHYS 390. Computer Applications in Physics. 3 credits. Offered
fall and spring.
Applications of automatic computation in the study of various physical
systems. Problems are taken from mechanics of particles and continua,
electromagnetism, optics, quantum physics, thermodynamics and
transport physics. Prerequisites: MATH/CS 248, PHYS 240, PHYS 250
and six additional credit hours in major courses in physics, excluding
PHYS 380, PHYS 371 and PHYS 372.

PHYS 391-392. Seminar. 1 credit per year. Offered once a year.
Participation in the department seminar program. Prerequisites: Junior
or senior standing and permission of the instructor.
Phys 397. Topics in Physics. 1-4 credits each semester. Offered on demand. Topics in physics at intermediate level. May be repeated for credit when course content changes. Topics selected may dictate prerequisites. Students should consult instructor prior to enrolling for course. Prerequisite: Permission of the instructor.

Phys 398. Problems in Physics. 1-3 credits, repeatable to 4 credits. Offered on demand. An individual project related to some aspect of physics. Must be under the guidance of a faculty adviser.

Phys 420. Modern Optics. 3 credits. Offered on demand. A study of the kinematic properties and physical nature of light including reflection, refraction, interference, diffraction, polarization, coherence and holography. Prerequisites: Phys 260, Phys 270 and Math 237.


Phys/Chem 455. Lasers and Their Applications to Physical Sciences (2, 3). 3 credits. Offered once a year. An introduction to both the theoretical and practical aspects of lasers and their applications in the physical sciences. Prerequisite: Phys 270, Chem 331 or permission of the instructor.

Phys 460. Quantum Mechanics. 3 credits. Offered once a year. Principles and applications of quantum mechanics. Topics include wave packets and the uncertainty principle, the Schrödinger equation, one-dimensional potentials, operators and eigenvectors, three-dimensional motion and angular momentum and the hydrogen atom. Prerequisite: Phys 340.

Phys 480. Astrophysics. 3 credits. Offered on demand. An introduction to the problems of modern astronomy and the quantitative application of physical principles to these problems. Topics of study include stellar structure and evolution, the interstellar medium and star formation, cosmic rays, pulsars, galactic structure, extragalactic astronomy and cosmology. Prerequisites: Phys 340 and one of either Phys 270 or Phys 430.

Phys 491-492. Physics Assessment and Seminar. 1 credit per year. Offered once a year. Principal course activities are participation in the departmental assessment program and attendance at departmental seminars. Prerequisite: Phys 392.

Phys 494. Internship in Physics. 1-6 credits. Offered on demand. Students participate in research or applied physics outside of the university. A proposal must be approved prior to registration, and a final paper will be completed. Prerequisites: Physics major with a minimum of 12 physics credit hours and permission of the department head and the instructor.

Phys 497. Topics in Physics. 1-4 credits each semester. Offered on demand. Topics in physics at the advanced level. May be repeated for credit when course content changes. Topics selected may determine prerequisites. Students should consult instructor prior to enrolling for course. Prerequisite: Permission of the instructor.

Phys 498R. Undergraduate Physics Research. 2-4 credits, repeatable to 6 credits. Offered on demand. Research in a selected area of physics as arranged with a faculty research adviser. Prerequisite: Proposal for study must be approved prior to registration.

Phys 499. Honors. 6 credits. Offered on demand. Participation in this course must be approved during the second semester of the junior year. For details, see catalog section entitled "Graduation with Distinction."

Political Science

Department of Political Science

Posc 101. Advisory in Public Affairs. 1 credit. Offered occasionally. An introduction to graduate study and career opportunities in political science, public administration, international affairs and criminal justice.

Posc 200. Global Politics. 3 credits. Offered fall and spring. An exploration of political, social and economic issues and structures existing within and between states in the contemporary global community. Students are introduced to alternative approaches to analyzing these issues in diverse cultures and political settings.

Posc 201. Introduction to Western Political Theory. 3 credits. Offered fall and spring. A general survey of Western political theory from Plato to Marx, order and freedom.

Posc 210. Introduction to Law and Jurisprudence. 3 credits. Offered occasionally. Examination of the origin and sources of the law as the product of the values of a society and the interaction of complex interests. Comparison of the common law, civil law and socialist legal systems and development of the American legal system.

Posc 225. U.S. Government. 4 credits. Offered fall and spring. An examination of institutions, processes and intellectual concepts which structure American political activity. The interaction of the political system with the changing American society and America's changing role in world affairs are also treated. The course provides an introduction to quantitative methodology.

Posc 230. International Relations. 3 credits. Offered fall and spring. A survey of the field of international relations including consideration of the elements of national power, foreign policy, diplomacy, propaganda, foreign aid, war, international law and international organization.

Posc 240. Comparative Politics. 3 credits. Offered fall and spring. A comparative study of selected political systems. Emphasis is on the structure of government, the political process and the conditions which either promote or constrain political change and stability.

Posc 255. Research Methods. 4 credits. Offered fall and spring. Students learn how to conduct original research from theory formulation through data collection and hypothesis testing. Special emphasis on research and computer literacy. Prerequisite: Math 220.

Posc 300W. The Washington Semester Experience. 3 credits. Offered fall and spring. A study of the manner in which the policy making process is conducted on the federal level. The function of political and governmental institutions in establishing public policy is examined through readings and observation. Prerequisite: Enrollment in the Washington Semester program.

Posc 302. State and Local Government. 3 credits. Offered fall and spring. A study of state and local government in the United States with particular focus on Virginia. Emphasis is placed on an understanding of the framework, functions and problems of state and local governments.

Posc 310. Political Theory: Ancient to Early Modern. 3 credits. A study of political theory from Plato and Aristotle through Machiavelli with analysis of such political concepts as the nature of the state, political obligation, natural law and Utopian societies.

Posc 315. Political Theory: Early Modern to the 19th Century. 3 credits. A study of political theory from Hobbes and Locke to Hegel, Green and other 19th-century thinkers. The course will examine such ideas as freedom, political obligation, justice, progress, ethics, and politics and the relationship between the individual and the human polity.
POSC 316. Contemporary Political Theory. 3 credits.
An examination of political thinkers and their ideas from the end of the 19th century to the present. Special emphasis will be placed on the writings of Hannah Arendt, Jurgen Habermas, John Rawls and other contemporary thinkers who continue to engage in the pursuit of political inquiry.

POSC 321. Political Theory and Ideology. 3 credits.
A study of the relationship between normative political theory and ideology, emphasizing the philosophic foundations of modern political thought and its relationship to the emergence of various ideological positions in the 19th and 20th centuries. Includes a study of liberalism, conservatism, socialism, anarchism, nationalism, fascism, feminism, environmentalism and others.

POSC 325. Constitutional Law. 3 credits.
A study of the legal aspects of the American democratic system. The development of the Constitution will be explored and case studies used to portray important events and changes. Prerequisite: GPOSC 225 and one additional political science course.

POSC 326. Civil Rights. 3 credits.
An examination of the judicial interpretation of civil rights in America with emphasis on freedom of speech, due process of law and equal protection under the 14th Amendment. Prerequisite: GPOSC 225.

POSC 330. American Political Thought. 3 credits. Offered fall and spring.
A study of the development and significance of political ideas that have influenced American society and government.

POSC/JUST 331. 3 credits. Offered once a year.
This course will explore the nature and value of human rights by investigating some major debates over their status and meaning and by examining some of the ways people have tried to secure human rights in practice. Prerequisites: JUST, POSC and INTA majors only. For JUST majors, completion of JUST 200 is a prerequisite.

POSC 337. Russian Political System. 3 credits.
A study of the former Soviet Union emphasizing the transition to a post-Communist order and the nature of post-Communist politics in the central Eurasian region. Also included are aspects of historical background that have an impact on contemporary political developments.

POSC 338. Russian Foreign Policy. 3 credits.
An analysis of the historical, ideological, internal and strategic factors which influence the formation of the foreign policies of Russia and the other members of the Commonwealth of Independent States. Emphasis is placed both on relations between the independent states, which make up the CIS and relations between the CIS and foreign states.

POSC 339. Politics of Communist and Post-Communist Systems. 3 credits.
A comparative study, which examines the former Communist Party states of eastern Europe and the remaining communist states of the Third World. The course stresses the dynamics of political transition in this region and the factors which have enabled some communist parties to retain power.

POSC 340. Political Development in the Third World. 3 credits.
A comparative study of the processes of political development in the developing nations of the Middle East, Africa, Asia and Latin America. Attention is given to the special problems confronting these nations and their implications for the global systems.

POSC 345. European Governments. 3 credits.
Comparative analysis of European constitutions, political systems and governmental processes with major emphasis on the United Kingdom, France and Germany.

POSC 347. Comparative Public Policy. 3 credits.
A study of public policy formation and implementation in selected advanced industrial and Third World nations.

POSC 350. Latin American Politics. 3 credits.
A comparative study of the political institutions, processes and current issues in the Latin American states and an analysis of their importance in regional and global relations.

POSC 351. Topics in American Politics. 3 credits.
In-depth exploration of specialized topics in the area of American politics. The topic for each semester will be announced on e-campus.

POSC 353. African Politics. 3 credits.
A comparative study of the institutions and social, economic, and global processes that affect contemporary African states. Political developments explored include the construction and transformation of post-colonial states, ethnic conflict, economic crisis and reform, and regime change.

POSC 355. East Asian Politics. 3 credits.
A study of the political systems of the major countries of East Asia, including Japan, China and Korea. Issues discussed include political development and democratization movements in the People's Republic of China, the Republic of China and the Republic of Korea.

POSC 358. Public Policy. 3 credits.
Study of the political process of the conversion of public needs through policy into benefits. Also deals with the capacity of officials to make policy on the basis of a rational selection of the best options and the constraints under which policy-makers must operate.

POSC 360. Urban Politics. 3 credits.
A study of the functions and role of local government in urban America with emphasis on the social, economic and governmental problems of cities and metropolitan areas. Prerequisite: GPOSC 225 or permission of the instructor.

POSC 361. Topics in International Relations. 3 credits.
In-depth exploration of specialized topics in the area of international relations. The topic for each semester will be announced on e-campus.

POSC 362. Political Behavior. 3 credits.
A study of how citizens acquire politically relevant attitudes and how these attitudes influence their political behavior. The effects of the mass media on voting behavior are also considered. Emphasis is placed on U.S. voting behavior, but behavior in other nations is also covered. Prerequisites: GPOSC 225 and one other POSC course.

POSC 365. American Political Campaigning. 3 credits.
Study of modern day political campaigning with emphasis on campaign structure, strategy and the relationship between candidates and political consultants. The course assesses the consequences of the changing nature of political campaigns for democracy in the United States. Prerequisite: GPOSC 225.

POSC 366. Interest Groups and Public Policy. 3 credits.
An analysis of the activities of interest groups in the American system of government with emphasis on their goals and effectiveness in shaping public policy. Prerequisite: GPOSC 225.

POSC 369. Political Parties and Elections. 3 credits.
A study of national political parties and elections. Attention is given to the origin and evolution of the major and important minor parties, nomination and election process, presidential campaign, role and practical working of political parties, influence of public opinion and pressure groups and responsibilities of the individual voter. Prerequisites: GPOSC 225 and one other political science course.

POSC 370. U.S. Foreign Policy. 3 credits.
An investigation of the processes for making foreign policy, underlying premises influencing specific policies and substance of American foreign policy. Prerequisite: POSC 230.

POSC 371. Topics in Comparative Politics. 3 credits.
In-depth exploration of specialized topics in the area of comparative politics. The topic for each semester will be announced on e-campus.
POSC/JUST 372. Ethics and International Politics. 3 credits.
Offered fall.
This course investigates the significance of ethical questions in the theory and practice of contemporary international politics, introducing a variety of normative approaches that shape the issues of peace and conflict, morality and justice in global affairs. Practical case studies will also be used to address issues of policy relevance, with particular attention paid to the American experience. Prerequisites: JUST, POSC and INTA majors only. For JUST majors, the completion of JUST 235 is a prerequisite.

POSC 380. The U.S. Presidency. 3 credits.
A study of the institution of the American presidency focusing on the sources, bases and character of the power required by the president for effective executive action. Relationships of the presidency to foreign affairs, Congress, the public, party structure and the administrative establishment will also be considered. Prerequisite: GPOSC 225 or honors standing.

POSC 381. Topics in Political Theory. 3 credits.
In-depth exploration of specialized topics in the area of political theory. The topic for each semester will be announced on e-campus.

POSC 383. Women and Politics. 3 credits.
A study of the role and impact of women in United States politics and society, with emphasis on political movements, electoral politics and public policy.

POSC 385. The U.S. Congress. 3 credits.
Study of the legislative process will concentrate on the operation of Congress with regard to such matters as its rules and procedure; relationships to the presidency, the bureaucracy, pressure groups and the courts; and a discussion of its current problems. Prerequisite: GPOSC 225.

POSC 391. Topics in Public Policy. 3 credits.
In-depth exploration of specialized topics in the area of public policy. The topic for each semester will be announced on e-campus.

POSC/JUST 392. Peace Studies. 3 credits.
A study of the evolution, theory and practice of peace studies. The course focuses on how we wage and resolve conflict, affect social change, and provide security through nonviolent means.

POSC 395. International Law. 3 credits.
Examination of the role of international law in world politics. Particular attention will be given to the effects of international law on patterns of international exchange and interaction. Case study and other forms of political analysis will be used.

POSC 396. International Organizations. 3 credits.
Study of the evolution and role of contemporary international organizations in the larger context of world politics. Emphasis on the ways in which the changing patterns of political power influence the processes and effectiveness of such organizations. Prerequisite: POSC 230.

POSC 397. The Politics of International Economic Relations. 3 credits.
A study of the political dynamics and implications of international economic relations.

POSC 435. Seminar in International Terrorism. 3 credits.
Systematic study of political terrorism with emphasis upon the destabilizing effect that it has upon the international community. Prerequisite: POSC 295.

POSC/SCOM/SMAD 472. Media and Politics. 3 credits.
A study of the media's role in political campaigns, concentrating on past/present election, the media's role in covering political parties and coverage of the governing process. Discussion of electronic and print will occur. Topics to be examined include campaign videos, CSPAN, political ads, editorial cartoons, TV debates, convention coverage and radio talk show commentary.

POSC 490. Senior Tutorial in Political Science. 4 credits each semester.
A research-oriented tutorial designed to integrate student's prior knowledge and strengthen lifelong learning skills. Course may be offered in multiple sessions (POSC 490A, POSC 490B, etc.). Prerequisites: Senior standing and permission of the instructor.

POSC 492. Senior Seminar in Political Science. 4 credits. Offered fall and spring.
This research-oriented senior seminar provides an overview of the discipline of political science and the different approaches to research in the field. A major research project will strengthen the research, information access and lifelong learning capacities of the student. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: Senior standing and POSC 295.

POSC 493. Simulations. 4 credits.
Application of concepts and insights learned in the classroom to contemporary policy problems and practical activities. The topic of this course will vary from offering to offering. The exact courses required will vary with the subject matter of the simulation. Prerequisites: Junior or senior standing and permission of the instructor.

POSC 495.* Internship in Political Science. 4 credits. Offered fall and spring.
Provides students with opportunities for experiential learning in a legislative, policy-making, campaign, constituency, interest group or criminal justice organization. A research paper related to the internship and a presentation based on the experience are required. Prerequisites: Junior or senior standing. 15 credits of political science, public administration or political communication and permission of the instructor.

POSC 495W.* Washington Semester Internship in Political Science. 6 credits. Offered fall and spring.
Provides Washington Semester participants with opportunities for experiential learning in a Washington, D.C., based legislative, policy-making, campaign, constituency, interest group or criminal justice organization. Requirements include 360 work hours, a research paper related to the internship, a career report, a daily log and regular meetings with faculty-in-residence. Prerequisites: Junior or senior standing. 15 credits of political science, public administration or political communication and permission of the instructor.

POSC 499. Honors. 6 credits. Offered fall and spring.
Year course.
*No more than four credit hours can be counted toward the political science major.

Psychology

Department of Psychology

PSYC 100. Interpersonal Skills for Resident Advisers. 1 credit.
Designed to give resident adviser trainees understanding of interpersonal relations. Cannot be used as a psychology major elective. Prerequisite: Limited to students selected as resident advisers.

GPSYC 101. General Psychology. 3 credits. Offered fall and spring.
A study of the nervous system, sensation, perception, consciousness, learning, memory, language, intelligence, motivation, emotion, life span development, personality, psychopathology, psychotherapy, social psychology and the scientific method.

GPSYC 122. The Science of Vision and Audition. 3 credits.
A study of the role of light and sound waves. Topics include basic neuroanatomy, anatomy of the auditory and visual systems; visual perception (color vision, object perception, perceptual illusions); auditory perception (pitch, loudness, sound localization), visual deficiencies. The course will include outside-of-class experiential activities. Prerequisites: Either MATH 103, MATH 205, MATH 220, MATH 231 or MATH 235. Formerly GSCI 122. Students may not receive credit for both GSCI 122 and GPSYC 122.
GPSYC 160. Life Span Human Development. 3 credits. Offered fall and spring.
An introduction to human development. Emphasis is on life span processes within physical, emotional, cognitive, psychosexual, social, personality and moral development.

PSYC 180. Introduction to Behavior Analysis. 3 credits.
Students will learn the fundamental principles, procedures and concepts of behavior analysis, how they can be used to explain behavior and how interventions based on these principles can be used to improve their own lives and the lives of others. This course cannot be taken by students who have already completed either PSYC 390 or PSYC 480.

PSYC 200. Topics in Psychology. 3 credits.
Exploration of an important psychological topic. The topics for each semester will be announced on e-campus and the departmental Web site. Prerequisite: GPSYC 101.

Offered fall and spring.
This course provides an introduction to statistical techniques used by psychologists in measuring behavior. Fundamental measures and theory of descriptive and inferential statistics will be discussed. The use of computers for data analysis will be introduced. Prerequisites: GPSYC 101 and MATH 205, MATH 220, MATH 231, or MATH 235 with a grade of "C-" or better.

PSYC 211. Psychological Research Methods (3,2). 4 credits.
Offered fall and spring.
This course provides an introduction to the application of scientific methodology to investigate psychological phenomenon. Through lecture and laboratory, attention is given to choosing research questions, developing hypotheses, designing and conducting research, describing, analyzing and evaluating data and effectively communicating research findings. Prerequisites: GPSYC 101 and PSYC 210.

PSYC 212-213. Psychological Research Design and Data Analysis I-II. 4 credits each semester.
The PSYC 212-213 course sequence introduces the logic of pursuing a scientific approach in psychology and covers descriptive, correlational, experimental and quasi-experimental approaches. It also covers the statistical tools associated with these methods (namely, descriptive statistics, correlation, regression, t-tests and ANOVA), and it introduces the basics of inferential statistics and hypothesis testing. Prerequisite for PSYC 212: GPSYC 101 and MATH 205, MATH 220, MATH 231, or MATH 235 with a grade of "C-" or better. Prerequisite for PSYC 213: PSYC 212 with a grade of "C-" or better.

PSYC 220. Psychology and Culture. 3 credits.
The study of human psychology is incomplete without taking into account the cultural, historical and social factors involved in human functioning. This course considers the ethnic and cultural variations that exist in human behavior, thought and action. Prerequisite: GPSYC 101.

PSYC 235. Psychology of Adjustment. 3 credits.
A study of the process and dynamics of the well-integrated personality and the practical application of adjustment theories and behavior change techniques to enhance personal awareness and self-development.

PSYC 250. Introduction to Abnormal Psychology. 3 credits.
Offered fall and spring.
An introduction to the field of abnormal psychology for the non-psychology major. This course will examine methods of defining psychological normality and abnormality and the classification, causes and treatment of abnormal behavior. This course cannot be used for psychology major credit. Students may not earn credit for both PSYC 250 and 335. Prerequisite: GPSYC 101 or GPSYC 160.

PSYC/JUST 255. Abnormal Psychology for Law Enforcement Personnel. 3 credits.
This course for students interested in becoming law enforcement professionals critically examines psychological normality and abnormality. The course focuses on description and causes of abnormal behavior likely to be encountered by law enforcement professionals, and on intervention options for police officers. May not be taken by psychology majors or students who have completed PSYC 250 or PSYC 335. Prerequisites: GPSYC 101 and JUST 200.

PSYC 275. Psychology of Human Intimacy. 3 credits.
Theoretical and applied study of human relationships through case analysis and role play.

PSYC 285. Drugs and Behavior. 3 credits.
An introduction to the pharmacological effects of psychoactive drugs. This course will examine the neural mechanisms and behavioral effects of common substances such as caffeine and nicotine, drugs of abuse, and pharmaceuticals that are used to treat mental disorders. Prerequisite: GPSYC 101.

PSYC 290. Directed Studies in Psychology. 1-3 credits. Offered fall and spring.
Designed to give capable students an opportunity to complete directed study in an area of psychology under faculty guidance. Not to be used for psychology major credit. Prerequisites: GPSYC 101 and a written plan for the directed study must be submitted to the department head for approval one week prior to registration.

PSYC 301. Peer Advising Training I. 2 credits. Offered fall.
Introductory training in academic advising, career development and counseling techniques. Not to be used for psychology major credit. Prerequisites: GPSYC 101, junior-level status, and approval from adviser and course coordinator one month prior to registration.

PSYC 302. Peer Advising Training II. 2 credits. Offered spring.
Continued training and supervised experiences in academic advising, career development and counseling techniques. Not to be used for psychology major credit. Prerequisites: PSYC 301, PSYC 211 or PSYC 213, and permission of the course coordinator.

PSYC 304. Death and Dying: Thanatology. 3 credits.
Psychological theories about death including ways in which individuals and society deal with death. Prerequisites: GPSYC 101 and junior status.

PSYC 308. Health Psychology. 3 credits.
This course deals with personality and its relation to health and illness behaviors. Topics include psychological factors involved in control and helplessness, conflict management, cardiovascular disorders, cancer, pain, substance abuse and other psychophysologically related factors. Prerequisites: GPSYC 101 and junior status.

PSYC 310. The Psychology of Women and Gender. 3 credits.
An examination of research and theory regarding the abilities and behaviors of women and the changing roles of women. Consideration is given to biological, developmental and societal determinants of sex and gender. Prerequisites: GPSYC 101 and junior status.

PSYC 312. Forensic Psychology. 3 credits.
The application of psychological principles and techniques to the law, the criminal justice system, law enforcement and criminal behavior. Prerequisite: GPSYC 101 or GPSYC 180.

PSYC/JUST 314. Police Psychology. 3 credits.
This course explores the role of psychology in various aspects of police work and examines how psychological research and methods can assist police departments and police officers in reaching law-enforcement goals. Prerequisites: GPSYC 101 and JUST 200.
PSYC 328. The Psychology of Leadership. 3 credits. This course focuses on psychological components of leadership behavior and its importance to various situations in culture and society. Students will explore the potential impact of leaders and their influence on individuals and society. Various existential, behavioral and motivational topics related to leadership studies will be explored. Service learning will also be a core component of the course. Prerequisites: PSYC 101 and junior standing.


PSYC 330. Psychology of Personality. 3 credits. Essential elements of leading theories of personality with an emphasis on implications of these theories for human behavior. Prerequisite: PSYC 211 or PSYC 213.

PSYC 335. Abnormal Psychology. 3 credits. This course for the psychology major critically examines psychological normality and abnormality and the classification, causes and treatment of abnormal behavior. Students learn classification and diagnosis, explore social and multicultural issues relating to diagnosis and discuss research in the field. Students may not earn credit for both PSYC 250 and PSYC 335. Prerequisite: PSYC 211 or PSYC 213.

PSYC 345. Social Psychology. 3 credits. The study of how an individual's behavior, feelings and thoughts are influenced by other people. Topics include attitude formation and change, social perception, attraction, altruistic and antisocial behavior, conformity, leadership and group dynamics, and applications of social psychology to other fields. Prerequisite: PSYC 211 or PSYC 213.

PSYC 365. Developmental Psychology. 3 credits. Psychological aspects of growth, development and behavior from birth through adolescence. Prerequisite: PSYC 211 or PSYC 213.

PSYC 375. Sensation and Perception. 3 credits. Explores the nature and development of human sensory capabilities, processing and storing of sensory information and how these affect perception of the environment. Students may not earn credit for both PSYC 122 and PSYC 375. Prerequisite: PSYC 211 or PSYC 213.

PSYC 380. Cognitive Psychology. 3 credits. This course explores the nature and development of human attention, memory, language and thinking processes. An information processing approach to the study of human cognition is emphasized. Prerequisite: PSYC 211 or PSYC 213.

PSYC 385. Biopsychology. 3 credits. A survey of the neurological and chemical mechanisms which control behavior. This course examines the brain and how it processes sensation, perception, cognition, movement, motivation, learning, memory and other behavioral processes of interest to psychologists. Prerequisite: PSYC 211 or PSYC 213.

PSYC 390. Psychology of Learning. 3 credits. Basic principles of learning and conditioning with a consideration of extinction, reinforcement, generalization, discrimination, transfer, concept formation and verbal learning. Prerequisite: PSYC 211 or PSYC 213.

PSYC 395. Comparative Animal Behavior. 3 credits. This course covers aspects of the development, function and evolution of the behavior of nonhuman animals. Topics include intraspecies communication, feeding, aggression, territoriality, reproductive behavior and social behavior. Prerequisite: PSYC 211 or PSYC 213.

PSYC 400. Advanced Topics in Psychology. 1-3 credits. Exploration of a significant psychological topic in depth. The topics for each semester will be announced on e-campus and on the departmental Web site. Prerequisites: At least one SS content course and one NS content course.

PSYC 401. Peer Advising. 2 credits. Offered fall and spring. Supervised practicum in academic and career development and peer counseling. May be taken twice for up to four credit hours toward the psychology major. Prerequisites: PSYC 302, at least one SS content course and one NS content course, and permission of the course coordinator.

PSYC 402. Independent Study in Psychology. 1-4 credits. Offered fall and spring. An opportunity to apply classroom learning to practical problems and to expand the scope of knowledge in psychology to areas not emphasized in the course work we offer. May include research, service learning, internship, directed readings, serving as a teaching assistant or a combination of these activities. Prerequisites: At least one SS content course and one NS content course.

PSYC 410. Industrial/Organizational Psychology. 3 credits. This course is a survey of the applications of psychological principles in business and industry. Emphasis is on topics such as research and methods, personnel decisions and training, satisfaction, motivation, leadership, communication and organizational influences on behavior. Other topics of current interest will also be covered. Prerequisites: At least one SS content course and one NS content course.

PSYC 412. Psychology of Motivation. 3 credits. This course is an advanced study of the motives that underlie behavior. Students explore pertinent theories representative of the biological, behavioral, cognitive and social perspectives on motivation. Includes an examination of historical context as well as a study of applied motivational approaches. Prerequisites: At least one SS content course and one NS content course.

PSYC 420. Advanced Psychological Statistics. 3 credits. This course presents advanced univariate and multivariate statistical techniques that psychology students need for reading research articles and conducting psychological research. Prerequisites: At least one SS content course and one NS content course.

PSYC 425. School Psychology. 3 credits. Applications of psychological principles in school settings, including roles and activities of school psychologists, standards, trends and issues of treatment and evaluation. Prerequisites: At least one SS content course and one NS content course.

PSYC 427. Tests and Measurements. 3 credits. Standardized psychological tests of mental ability, achievement, aptitude and personality with a review of statistical procedures necessary for interpretation of test results. Prerequisites: At least one SS content course and one NS content course.

PSYC 428. Educational Psychology. 3 credits. The application of the basic psychological principles of development, learning, cognition, measurement and social interactions to education settings. This course examines how psychological theory and research impacts the teaching of reading, writing, science and mathematics. Students may not count both PSYC 270 and PSYC 428 for psychology major credit. Prerequisites: At least one SS content course and one NS content course.
PSYC 430. Clinical Psychology. 3 credits.
An introduction to the field of clinical psychology including a review of the major theoretical models, psychometrics, psychiatric diagnosis and treatment strategies. Prerequisites: PSYC 335 and one NS content course.

PSYC 433. Community Psychology. 3 credits.
Focus on emerging trends and models in the application of psychology to community, stress prevention programs, human resources and change. Prerequisites: At least one SS content course and one NS content course.

PSYC 440. Counseling Psychology. 3 credits.
A basic counseling skills course designed for students interested in human service and mental health fields and for students from related disciplines who want to acquire counseling skills. Prerequisites: At least one SS content course and one NS content course.

PSYC 442. Introduction to Small Group Process. 3 credits.
This course is designed to acquaint students with the theories, ethics, skills and processes of small groups. A major requirement will be participation in a group experience. Prerequisites: At least one SS content course and one NS content course.

PSYC 450. Psychology of Child Abuse and Neglect. 3 credits.
Offered fall and spring.
Review of current psychological literature on child abuse and neglect including identification, etiology, treatment, prevention and legal aspects. Family violence issues are also discussed. Prerequisites: At least one SS content course and one NS content course.

PSYC 452. Child Psychopathology. 3 credits.
The causes, symptoms and classification of childhood psychological disorders. Prerequisite: PSYC 335 or PSYC 365 (both recommended).

PSYC 460. Community Psychology within Developing Societies. 3 credits.
This course will apply psychology to a critical examination of developing societies around the world. Topics include sociocultural and international contexts, privilege, power, oppression, skin, terrorism, population growth and diversity. Consideration is given to developmental and societal determinants of prejudice, discrimination and inequity. Prerequisites: At least one SS content course and one NS content course.

PSYC 465. Black/African Psychology. 3 credits.
This course will help students view psychology and psychological research from a different viewpoint. Students will study Afrocenric theories of development and pathology as well as methodologies emerging from these theories and philosophies. This course will facilitate student understanding of the psychology of Americans of African descent. Prerequisites: At least one SS content course and one NS content course.

PSYC 475. Psychology of Adulthood. 3 credits.
The physical, social and psychological factors faced by adults and their progression through the life span. Prerequisites: At least one SS content course and one NS content course.

PSYC 480. Applied Behavior Analysis. 3 credits.
This course focuses on how environmental events influence behavior, and behavior analytic strategies by which behavior may be changed. The emphasis of the course is on the knowledge and skills necessary to plan, develop and implement interventions for behavior problems in a variety of settings including, but not limited to, business and industry, education, and health and human services. Prerequisite: PSYC 390.

PSYC 492. History of Psychology. 3 credits. Offered fall and spring.
The history of psychology as reflected through the individuals, theories and experimental investigation of the discipline. Special emphasis is placed upon relating the current state of psychology to its historical development. Prerequisites: At least two SS content courses and two NS content courses. May be taken as a capstone course or psychology elective.

PSYC 493. Laboratory in Psychology. 3 credits.
A research course designed by a faculty member that studies a particular topic. Topic may be changed from semester to semester. Students will be guided in a group through a research experience that will include library research of the topic, design of an experiment, gathering and analyzing the data, and writing the results. The course meets the requirement as a capstone course or as a psychology elective. Only three credit hours of the course can be used for the psychology major. Prerequisites: At least two SS content courses and two NS content courses.

PSYC 495. Field Placement in Psychology. 4 credits. Offered fall and spring.
Supervised practicum in a counseling, industrial or human service agency. Orientation to agency’s service, policies, personnel and professional ethics is provided. The course meets the requirement as a capstone course or as a psychology elective. Prerequisites: At least two SS content courses and two NS content courses. Guidelines available in the department office.

PSYC 497. Senior Seminar in Psychology. 3 credits. Offered fall and spring.
A seminar course that will require students to integrate theories, research and/or methods from several areas of psychology and/or related disciplines. Topics will vary from semester to semester. May be taken as a capstone course or psychology elective. Up to six credit hours can be used in the psychology major. Prerequisites: At least two SS content courses and two NS content courses.

PSYC 499. Honors. 6 credits. Year course. Offered fall and spring.
See catalog description entitled “Graduation with Distinction” and “Graduation with Honors.” Prerequisites: At least two SS content courses and two NS content courses.

Public Policy and Administration

Department of Political Science

PUAD 215. Introduction to Criminal Justice. 3 credits.
An introduction to the development of the American criminal justice system from early English beginnings to the present in its three dimensions: police, courts and corrections.

PUAD 265. Public Administration. 3 credits.
An introductory survey of the principles, functions and processes of public administration with specific emphasis on the political aspects and environment of bureaucracies and the how and why of policy-making within an administrative system. Organizational structure, personnel, budgeting, public relations and government values, traditions and objectives are analyzed. Prerequisite: GPSOC 325.

PUAD 325. Regional Planning and Organization. 3 credits.
Study of trends and issues in the public planning process with focus on regional planning and organization, the relationship of planners and the planning board to their committees.

PUAD 381. Budgetary Process. 3 credits.
An examination of the political planning and strategies of Congress and federal agencies in the budgetary process; politics of budgetary reform; state and local budgetary politics; and intergovernmental impacts on budgeting. Prerequisite: Junior standing.

PUAD 410. Administration in Criminal Justice. 3 credits.
A study of the major concepts of management in criminal justice and public safety agencies emphasizing functional and structural approaches and the concepts of leadership, decision making and the effects of social environment in the administration of the criminal justice systems. Fulfills the College of Arts and Letters writing-intensive requirement for the major.

PUAD 412. Seminar in Intergovernmental Relations. 3 credits.
Study of the relations between the several levels of government in the United States. Political, fiscal, legal, regulatory and administrative relations as they have evolved within federal and state constitutional frameworks will be examined. Prerequisite: Junior standing.
PUAD 415. Legal Environment of Public Administration. 3 credits.
Examination of the basic constitutional framework of American public administration. Examines legal constraints imposed on public administrators by law and judicial oversight. Emphasis placed on legal issues affecting public employees. Also examines the basics of public procurement law.

PUAD 420. Public Management. 3 credits.
Study of the management of public agencies from the executive viewpoint. Management control of public agencies will be explored including establishment of goals, policies, organizational structure and output of services. Case studies illustrate administrative behavior and managerial operations in local, regional, state and federal agencies. Does not count as part of the political science major. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: Junior standing.

PUAD 482. Senior Seminar in Criminal Justice. 4 credits.
A research-oriented senior seminar providing an overview of the discipline of criminal justice and various approaches to research. The student will complete a major research project. Prerequisites: Senior standing and permission of the instructor.

PUAD 483. Emerging Issues in Public Administration. 3 credits.
A detailed study of an emerging issue in public administration. The course will examine an area of new or emerging interest in the profession of public administration. The course may be repeated for credit with a change in the subject matter. Prerequisite: Permission of the instructor.

PUAD 490. Special Studies in Public Administration. 3 credits.
Designed to give capable students in public administration an opportunity to complete independent study under faculty supervision. Prerequisites: Permission of the instructor and department head.

PUAD 496.* Internship in Public Administration. 4 credits.
Provides students with opportunities for experiential learning in a governmental or nonprofit organization. Prerequisites: Junior or senior standing, 15 hours of public administration and permission of the instructor. No more than four semester hours (in any combination of internships) can be counted toward the major.

Reading Education

College of Education

READ 240. Children's Literature. 3 credits.
The study of a variety of children's literature and the practices, principles and procedures for selecting and evaluating works for children, giving consideration to their motivational and developmental effects. Prerequisite: Completion of Cluster One.

READ 254. Literature for Adolescents. 3 credits.
A study of literature which has been written for or appeals to young adults and adolescents, including practices, principles and procedures for evaluating and making literary materials appealing to adolescents. Prerequisite: Completion of Cluster One.

READ 312. Reading and Writing Across the Curriculum in the Middle Grades. 3 credits.
An introduction for preservice teachers to the foundations of reading and writing development and the elements of balanced literacy instruction in the middle grades. Through reading, writing and field applications across content areas, preservice teachers explore literacy engagement, diversity and special needs. Corequisites: EDUC 310, EDUC 311 and Practicum.

READ 366. Early Literacy Development and Acquisition. 3 credits.
This course provides preservice teachers an understanding of the foundations of early literacy development and instructional strategies and assessment techniques that support the acquisition of literacy.

READ 414. Reading and Writing in the Content Areas. 1 credit.
Study of how to use print and media resources to support the acquisition of knowledge and the development of reading and writing skills in all content areas. This course may not be used for credit in minor programs in early and middle education.

READ 420. Content Area Literacy, K-12. 2 credits.
This course is designed for preservice teachers and will provide an introduction to the foundations of reading and balanced literacy instruction for students in kindergarten through grade 12. Through reading and writing across content areas, preservice teachers will explore literacy engagement, diversity and special needs.

READ 430. Development, Assessment and Instruction of Literacy, K-12. 3 credits.
This course is designed to provide preservice teachers with a foundation of literacy development. Instructional strategies and assessment techniques which support the acquisition and development of literacy in diverse classrooms across the curriculum in grades K-12. Prerequisite: CSD 300. Corequisite: SPED 410.

READ 436. Literacy Learning in the Elementary Grades. 3 credits.
This course will provide preservice teachers with an understanding developmentally appropriate instructional strategies and assessment techniques to help all students in elementary grades become literate using reading, writing, listening and speaking in strategic and authentic ways. Prerequisite: Grade of “C” or better in READ 366.

READ 472. Literacy Assessment and Instruction in the Content Areas for the Middle Grades. 3 credits.
The course will introduce preservice teachers to the relationship between literacy assessment practices and instructional design for teaching reading and writing in content area classrooms. Using case study methodology, preservice teachers will explore individual students’ literacy strengths, areas that need development and specific instructional strategies. Prerequisite: READ 312. Corequisites: MSSE 370, MSSE 371 and Practicum.

READ 490. Special Studies in Reading Education. 1-3 credits.
Designed to give capable students, under faculty guidance, an opportunity to engage in the independent study of educational problems. Prerequisite: Plan for the study must be approved by the faculty adviser and the coordinator of the program in which the student is enrolled.

Recreation

Department of Kinesiology

REC/KIN 199. New Directions in Kinesiology and Recreation. 1-3 credits. Offered fall and spring.
In-depth exploration of topics significant in kinesiology. The topic for each semester will be announced on e-campus.

REC/KIN 201. Introduction to Kinesiology and Recreation. 2 credits. Offered fall and spring.
Students are introduced to the discipline of kinesiology and recreation. They will study the effects of physical activity on human beings; survey the subdisciplines, including exercise physiology, biomechanics, motor behavior and sociological, historical and philosophical perspectives; and discuss how the discipline can be applied professionally.

REC/KIN 202. Biological Foundations of Kinesiology and Recreation. 3 credits. Offered fall and spring.
Introduction to the biological scientific foundations within the discipline of kinesiology and recreation. Includes applied anatomy and physiology, biomechanics and exercise physiology. Prerequisite: KIN 201.

REC/KIN 203. Social/Psychological Foundations of Kinesiology and Recreation. 3 credits. Offered fall and spring.
The focus of this course is on exploring the socio/psychological perspectives of participation in activity through the lifespan. Prerequisite: KIN 201.
RECA 241. Introduction to Recreation and Leisure Services. 3 credits. Offered fall.
Introduces the recreation/leisure professions in governmental, voluntary and commercial settings. Outlines development of recreation and evolution of leisure services. Overviews professional preparation in leisure management and therapeutic recreation.

RECA 330. Programming and Leadership in Recreation. 3 credits. Offered fall.
Fundamentals of program planning exploring the purpose and function of programs, planning principles, goals and objectives, organizational behavior, and evaluation. Class includes a study of the theory, principles and processes of leadership in the delivery of recreation programs for a variety of populations. Lab and field observations required. Prerequisite: RECA 241, RECA 242 or permission of instructor.

RECA/KIN 333. Management in Sport, Recreation and Fitness Settings. 3 credits.
This course is designed as an introduction to sport, fitness and recreation management. Students will examine a variety of management issues and opportunities in these areas. Prerequisite: RECA/KIN 436.

RECA 401. Practicum in Recreation and Leisure Studies. 3 credits. Offered fall and spring.
This course provides students with an opportunity to practice the professional skills and competencies associated with specializations in recreation and leisure in a real-world setting. It is supervised by a highly qualified and experienced professional.

RECA 402. Internship in Recreation and Leisure Studies. 12 credits. Offered fall and spring.
This course provides students with 480 hours of full-time professional experience in the student's chosen area of recreation emphasis. The professional experience must be at an approved recreation agency and must be supervised by a highly qualified, experienced professional in the field of recreation. All course work must be completed prior to registration for the internship experience.

RECA/KIN 411. Measurement and Evaluation in Kinesiology and Recreation. 3 credits. Offered fall and spring.
The administration and interpretation of measurement and evaluation procedures in kinesiology and recreation.

RECA/KIN 436. Facilities Planning and Management in Sport and Recreation. 3 credits. Offered fall.
The purpose of this course is to enhance the understanding and skills necessary to be part of a facilities planning team and assume an entry-level facilities management position. Prerequisite: RECA 241, RECA 333, RECA 420, RECA 430 or permission of instructor.

REL 101. Religions of the World. 3 credits. Offered fall and spring.
An investigation of the world’s major religions which will give attention to their origin, history, mythology and doctrines.

REL/HEBR 131-132. Elementary Biblical Hebrew. 4 credits each semester.
An introductory course for students who intend to acquire the ability to read the Massoretic text of the Bible. Systematic study of the fundamentals of grammar with emphasis on reading, pronunciation and translation.

REL/HEBR 231-232. Intermediate Biblical Hebrew. 3 credits each semester.
An intensive reading course. Selections from the Massoretic text of the Bible. An introduction to the critical apparatus used within the Massoretic text as well as the variant reading apparatus printed in the Biblia Hebraica Stuttgartensia. Prerequisite: One year of college biblical Hebrew or equivalent.

REL 200. Exploring Religion. 3 credits.
An examination of the various components in the study of religion including myths, rituals, mystical experiences, theologies, ethics and current issues. Examples will be taken from the sacred texts, rituals and the lives of religious personalities in traditions around the world.

REL 201. Introduction to Hebrew Bible/Old Testament. 3 credits. Offered fall and spring.
A study of selected texts from the books of Genesis-Malachi that will examine their literary, historical and theological dimensions from the perspective of their ancient Israelite and Judaic contexts.

This course discusses the literature of the New Testament in light of the historical, social and religious conditions from which it emerged. Particular attention is given to historical issues related to Jesus and the origins of Christianity.

REL/PHIL 218. Philosophy of Religion. 3 credits. Offered fall 2006.
An intensive examination of religion from the standpoint of philosophical thinking with particular emphasis on the way philosophers view such problems as the existence of God, evil, immortality, religious language, etc.

REL/HEBR 231-232. Intermediate Biblical Hebrew. 3 credits each semester.
An intensive reading course. Selections from the Massoretic text of the Bible. An introduction to the critical apparatus used within the Massoretic text as well as the variant reading apparatus printed in the Biblia Hebraica Stuttgartensia. Prerequisite: One year of college biblical Hebrew or equivalent.

REL 240. Jesus and the Moral Life. 3 credits.
This is an introductory course that focuses on the ways in which the moral teachings of Jesus of Nazareth, explored from both historical and multi-cultural perspectives, informed and continues to inform personal ideals and moral visions of society.

An investigation of the historical development of religious values and moral concepts in the Western religious traditions of Judaism, Roman Catholicism and Protestantism.

REL 280. Religion and Science. 3 credits. Offered once every three years.
This course will provide a historical survey of the relationship between religion and the sciences; offer overviews of scientistic and theological theory; examine the development of theory formation; focus on issues in astronomy, physics and biology; explore the ethical implications of scientific and religious theories; and trace developments.
REL 300. Selected Topics in Religion. 3 credits.
Selected topics in religion are studied in depth. See e-campus for current topic. Course may be repeated for credit when content changes.

REL 305. Islamic Religious Tradition. 3 credits. Offered fall 2006.
This course introduces the Islamic religious tradition from its inception to the present. Topics covered include the message and style of the Qur'an, the life and experience of Muhammad, the major beliefs and practices of Islam, and the theological, philosophical and mystical movements in the Islamic empire. Attention is also given to modern Islamic movements and their relation to the modern world inside and outside the Middle East.

REL 310. Hindu Traditions. 3 credits. Offered fall 2008.
This course examines the notions of world, community and self as experienced and interpreted by Hindus; the basic assumptions underlying their world view; how these assumptions interrelate with the various dimensions of Hindu physical, psychological and cultural experience; how they are expressed in myth, ritual and social structures; and the tensions we find between the ideal and the real.

REL 312. Religions of East Asia. 3 credits.
An introduction to the religions of China and Japan, including Confucianism, Taoism, Buddhism, Shinto, folk religions and the "New Religions" of Japan. Attention to the role of religion in the family and the state, classic texts, the importance of nature and expressions of spirituality in the fine arts.

REL 313. Hindu Ethics. 3 credits. Offered once every three years.
This course is an introduction to Hindu modes of moral reasoning. It gives special attention to the concept of moral order and its relationship to the pursuit of pleasure and of wealth, on the one hand, and the quest for liberation, on the other hand. Attention is paid to common moral obligations as well as to specified, and sometimes gendered, vocational duties incumbent upon Hindus.

REL 314. Gandhi, Nonviolence and Global Transformation. 3 credits.
Gandhi is unique as a social theorist, a philosopher and an activist. He challenged the dominant world structure of his time and struggled with some of the most significant issues of our time: violence, racism, oppression of women, role of religion, nature of capitalism and conflict between ethnic and religious communities. This course examines his theory and praxis on these and other issues.

Study of women and world religions, historically and today, emphasizing Buddhism, religions of China and Japan, Judaism and Christianity. The variety of women's religious roles and practices are studied in a comparative context. Feminist scholarship's proposals for revising our understanding of religious history and reforming religious traditions.

REL 316. Topics in Hinduism. 3 credits. Offered once every three years.
Study of selected topics in Hinduism. May be repeated for credit when course content changes.

REL 317. Exploring Gandhian Philosophy of Nonviolence. 3 or 6 credits. Offered alternate summers.
The JMU in India Summer program is a travel-study course. The program provides an interdisciplinary study to the history and contemporary application of the Gandhian philosophy of nonviolence through course work, field studies and direct experience.

REL 318. Exploring Contemporary India. 3 or 6 credits. Offered alternate summers.
The JMU in India Summer program is a travel-study course. The program provides an interdisciplinary introduction to contemporary India from the point of view of religion, mythology, literature, music, art and architecture through course work, field studies and direct experience.

REL 320. Judaism. 3 credits.
An examination of the beliefs, practices and historical development of the various forms of Judaism represented in America today: Orthodox, Reform, Conservative and Reconstructionist.

REL 325. Catholicism in the Modern World. 3 credits.
Study of the variety of responses by contemporary Catholic theologians and philosophers to key elements in Christian doctrine and practice. Topics include Vatican II, scripture, tradition and modern scholarship; Jesus and Christology; contemporary Catholic spirituality; moral issues in the church; and ecumenism.

An examination of the character and nature of religious traditions and liturgical practices of African and African-American communities through history.

REL 342. The Historical Jesus and the Roman Imperial World. 3 credits.
A study of the historical Jesus and the Jesus-movement as a response to Roman power, domination and violence. Includes discussion of historiographical problems raised in past and present scholarly "quests" for the historical Jesus.

This course examines the rise of Christianity in the social and religious context of the Roman Empire. It focuses on crucial struggles and conflicts in the volatile period from Jesus to the fourth century A.D.

REL 346. Religions in Greece and Rome. 3 credits.
This course explores the religious traditions of ancient Greece and Rome. Through study of the diverse gods and goddesses and the divine honors paid to them, the course covers central aspects of Greco-Roman culture and society. Attention is also given to new religious traditions, in particular the Mystery religions, that gained prominence in the world of the Roman Empire.

REL 360. History of Western Religious Thought. 3 credits. Offered fall 2006.
A survey of the development of Western religious thought from the classical period through the modern period. The primary emphasis will be on the person, ideas, beliefs and critical turning points in the development of Christianity and Judaism with some reference to Islam and to contemporary religious developments.

REL 370. Mysticism. 3 credits.
An examination of the nature of mysticism and its forms of practice in selected religious communities throughout the world.

REL/PHIL 375. The 19th Century: Age of Ideology. 3 credits.
A study of selected 19th-century philosophers and theologians with special attention to rationalism, romanticism and idealism. Views of Hegel, Schleiermacher, Ritschl, Marx and others are considered.

REL 380. Contemporary Theologies. 3 credits.
A survey of one or more of the following contemporary theological movements: continental, North American, African and South American, including Roman Catholic, Orthodox and Protestant approaches, and covering themes such as the conflict between history and faith, Christology, fundamentalism and liberalism, and the emergence of liberation, feminist, black, neo-conservative, secular, pluralist and ecological theologies.

REL/PHIL 385. Buddhist Thought. 3 credits. Offered fall 2006.
Buddhist thought from its origins to the contemporary world in South Asia and East Asia. Emphasis on the understanding of the human condition; analysis of the mind and nature of the cosmos; and the expression of Buddhist thought in the fine arts and in social activism.

REL 420. Cross-Cultural Philosophy of Religion. 3 credits. Offered fall 2006.
Philosophy of religion questions examined from the perspectives of multiple religious world views using a philosophical approach. Readings drawn upon multiple conceptions of the divine; faith, knowledge and religious experience; justice and karma; exclusivity and religious pluralism. Does not repeat REL/PHIL 218. Prerequisites: GREL 101 and junior standing or permission of instructor.
RUS 320. Russian Oral and Written Communication. 3 credits. Offered fall and spring. Intensive training in the use of modern, everyday Russian with emphasis on conversation and composition. Readings in Russian will provide a context for discussion and writing. Prerequisite: RUS 300.

RUS 400. Advanced Conversation. 3 credits. Offered fall and spring. Discussions deal with topics of current interest. Instruction is in Russian. Prerequisite: RUS 300 or equivalent.

RUS 405. Russian Literature of the 19th Century. 3 credits. Offered fall and spring. Readings and analyses of poetry, prose and drama by such writers as Pushkin, Lermontov, Gogol, Turgenev, Tolstoy, Dostoevsky and Chekhov. Instruction is in Russian. Prerequisite: Three years of college Russian or equivalent.

RUS 426. Russian Literature of the 20th Century. 3 credits. Offered fall and spring. A study of the works of major Russian writers of the 20th century. Instruction is in Russian. Prerequisite: Three years of college Russian or equivalent.

RUS/ENG 438. Studies in Russian Literature. 3 credits. Offered fall and spring. A study of selected works of Russian literature. Instruction is in English. May be repeated for credit when course content changes.

Social Work

Department of Social Work

SOWK 287. Introduction to Social Work. 3 credits. Offered fall and spring. An overview of the development of social work as a profession with emphasis upon various settings in which social work is practiced. The focus is on practical experiences designed to enable the student to gain familiarity with the dynamics of the profession. Prerequisite: 20 hours community service learning.

SOWK 288. Social Welfare. 3 credits. Offered fall and spring. The analysis of basic human needs, problems and resources in society (America and other selected countries). The study of the development of social welfare as an institution in society. The examination of current issues in social welfare services.

SOWK 301. Workshops in Social Work. 1-3 credits. Offered on a rotating basis. Detailed study of a topic of interest in social work. May be repeated for credit.

SOWK 305. Social Work Research Methods. 3 credits. Offered fall and spring. Study of qualitative and quantitative methods in social work. Explanation of the analysis of social work research, including observation, questionnaires, interviews, use of existing sources, experiments, indirect techniques, evaluation research, analysis and interpretation of data. Publication and dissemination of results of social work research. Prerequisite: MATH 220 or SOWK 331.

SOWK 317. Skills for Generalist Social Work. 3 credits. Offered fall and spring. Self-awareness, analysis of worker and client value systems, and an understanding of intervention are applied practically to aid students in developing skills in communication and interviewing within a strengths-based generalist framework with individuals, families, groups and communities.

SOWK 320. Human Behavior in the Social Environment. 3 credits. Offered fall and spring. Integration and expansion of prerequisite knowledge foundation in the biological, psychological and socio-cultural sciences as they apply to individuals, groups, families, organizations and communities. Particular attention is paid to minorities of color, women, sexual orientation and cultural diversity in a pluralistic society. Prerequisites: SOWK 101/PSYC 210, SOWK 214, PSYC 101, PSYC 160, and SOWK 336/SOCI 354.
SOWK 330. Corrections. 3 credits. 
Offered fall and spring.
The history, philosophy, policies and problems of the treatment of violators by the police, courts and correctional institutions.

SOWK 332. Community Mental Health Practice. 3 credits.
Offered on a rotating basis.
Provides a basis for understanding mental health policy and services. Focus is on the needs of the deinstitutionalized mentally ill patient including psychosocial treatment and case management services. Outpatient services for the general public are also covered. Course contains a community service-learning component.

SOWK 335. Social Policy. 3 credits. 
Offered fall and spring.
The formulation and consequences of social policy in the context of contemporary social, political and economic conditions. Skill development in policy analysis, critique and change. Prerequisites: SOWK 288 and GPOSC 225 or POSC 302.

SOWK 338. Issues and Policies in Family Services. 3 credits.
Offered on a rotating basis.
Examination of historical and philosophical approaches to family policy. Evolution of family-related social policies in the United States is contrasted with those of selected foreign countries with the view toward a national family policy.

SOWK 340. Violence in Families. 3 credits. 
Offered every other fall.
Examination of violence in the family, including spouse, sibling, elder and child abuse. Studies the social and cultural patterns and etiology of family violence. Examines programs and services for the abused and the abuser including shelters, support systems and counseling.

Offered on a rotating basis.
Study of the basic child welfare services—day care, homemakers, services to unwed parents, protective, foster care and adoption services —and the principle income maintenance programs as they affect children and their families. Analysis of legal framework and court services and such current issues as guardianship, educational and protective services.

SOWK/SCSI 348. Introduction to Developing Societies. 3 credits.
Offered on a rotating basis.
This course will provide a critical examination of Third World societies within the global system. The course will address theoretical frameworks used to analyze Third World problems. Special attention will be given to persistent problems in the areas of population, poverty, health care, housing and social welfare.

Offered summer.
The study of the formulation and consequences of social policy and methods of social work practices in a selected European country within the context of contemporary social, political, cultural and economic conditions. Comparisons and linkages will be made with current U.S. social policies and social work practices. Students will work with both U.S. and European social work faculty. Prerequisite: SOWK 288 or permission of the instructor.

SOWK 372. Social Work Practice with the Aged. 3 credits.
Offered fall.
An examination of America’s response to aged Americans from a historical and current perspective. Social problems and social work skills will be examined in light of individual, group and community needs and those affected by social policies.

SOWK/FAM/GERN 375. Grant Writing for Agencies. 3 credits.
Offered on a rotating basis.
A collaborative course, which emphasizes active learning, teaches basic skills on proposal writing. Students and agency representatives learn the importance of grant writing for agencies/organizations and research projects often needed to complete graduate education. There is a potential for a grant submission by the end of the semester.

SOWK 385. Acting Out Teen Theatre. 3 credits. 
Offered fall and spring.
Students are trained to facilitate a semester-long, weekly theatre program with 12-18 year old middle and high school students. Students analyze group dynamics, apply theory and provide program structure. The semester ends with the teen production of an original script.

SOWK/FAM 386. Acting OutREACH. 3 credits. 
Offered fall and spring.
Students learn about issues currently facing teens, parents and schools. Students are trained to apply theory and function as staff for the Acting OutREACH Program. Students take issue-centered programs to alternative education and after-school programs at middle and high schools in the community.

SOWK 387. Working with Teenagers. 3 credits. 
Offered every other fall.
Survey of physical, psychological and social theories of adolescent development. Examination of service delivery issues in working with teenagers. Investigation of topical areas of particular relevance to work with adolescents including sexuality, abuse and neglect, runaways, depression and suicide, and substance abuse.

SOWK 442. Social Work in Health Care. 3 credits. 
Offered on a rotating basis.
The impact of illness and disability on the person, family and community is studied. The social responses currently provided and those being developed are emphasized. Explores psychosocial assessment methods; prevention, crisis intervention and rehabilitation strategies; and interdisciplinary teamwork in health care.

Offered fall and spring.
Application of social work values, knowledge and methods with families and small groups is emphasized. Assessment, planning intervention strategies, resource utilization and evaluation are examined. Role play and group processing are utilized. Prerequisites: SOWK 305, SOWK 317, SOWK 320, SOWK 335 and admission to the social work program. Senior standing. Corequisites: SOWK 486 and SOWK 487.

SOWK 466. Social Work Practice in Micro Systems. 3 credits. 
Offered fall and spring.
Application of social work values, knowledge and methods with individuals within the family context is emphasized. Case assessment, planning intervention strategies, resource utilization and evaluation are examined. Role play and videotaping are utilized. Prerequisites: SOWK 305, SOWK 317, SOWK 320, SOWK 335 and admission to the social work program. Senior standing. Corequisites: SOWK 486 and SOWK 487.

SOWK 467. Social Work Practice in Macro Systems. 3 credits. 
Offered fall and spring.
Social work skill development and practice in the application of knowledge, skills and methods to the macro systems of professional practice including neighborhoods, communities and organizations. Prerequisites: SOWK 305, SOWK 317, SOWK 320, SOWK 335 and admission to the social work program. Senior standing. Corequisites: SOWK 486 and SOWK 487.

SOWK 481. Social Work Field Practicum I (Block Plan). 
6 credits. 
Offered fall and spring.
Offers students an opportunity to gain a broad knowledge of the basic functions, services and roles of the agency as related to actual social work practice, as well as a specific knowledge of practical intervention skills necessary to effective social work practice. The field experience is the application of knowledge and skill components drawn from previous courses. Prerequisites: Admission to the field practicum. Social work majors only. Senior standing.

SOWK 482. Social Work Field Practicum II (Block Plan). 
6 credits. 
Offered fall and spring.
Offers students an opportunity to build upon previous field experience by having more responsibility and tasks designed to expand their practice skills in social work. Prerequisites: SOWK 481. Social work majors only.
SDWK 487. Special Topics in Social Work. 3 credits. Offered on a rotating basis.
Examination of selected topics of social work practice that are of current importance in the social work profession. Course may be repeated for credit.

SDWK 490. Special Studies in Social Work. 3 credits. Offered fall and spring.
This course is restricted to majors in social work. The course provides capable students an opportunity to complete independent studies under faculty supervision. Course may be repeated for credit. Prerequisite: Recommendation of the instructor and permission of the department head.

SDWK 494. Senior Seminar in Social Work. 3 credits. Offered fall and spring.
The integration of the classroom and field practicum experience that the student has had during the undergraduate years into a synthesis, which will provide a firm foundation upon which to begin professional social work practice. Senior outcome assessment is integral to this course. Prerequisite: Social work majors only. Corequisite: Field practicum.

SDWK 499. Honors. 6 credits. Year course. Offered fall and spring.
Independent research topic initiated and completed by qualified second semester junior social work majors.

Sociology

Sociology of Religion

SOCI 322. Sociology of Religion. 3 credits.
The relationship between society and politics, the nature of distribution of social power, political participation, political thought, and politics as a vehicle for social change are explored.

SOCI 301. Introductory Sociology. 3 credits. Offered once a year.
Provides students with an understanding of the structure and processes of modern societies and their historical antecedents. Explores the universality of the social experience by addressing such topics as culture, socialization, social interaction, bureaucracy, norms and diversity, social inequality, social institutions, modernization, technology and social change, world views, values and behavior.

SOCI 200. Development of Sociological Thought and Methods. 4 credits. Offered fall and spring.
This course is a foundation course for sociology majors. Topics will include the historical development of the discipline with an emphasis on the social and philosophical forces that influenced the development of sociology. Main sociological traditions will be introduced including the critical, naturalistic and interpretive paradigms, and sociological analysis from these perspectives. Prerequisites: SOCI 101, GSOCI 210, GSOCI 240 or permission of instructor.

GSOCI 210. Social Issues in a Global Context. 3 credits. Offered fall and spring.
An examination of current global social issues, such as industrialization, economy, work, inequality, social movements and socio-political change. Addresses questions of definition, nature, history, patterns and consequences of various issues, using sociological perspectives to examine and critique proposed social policies.

SOCI 214. Social Deviance. 3 credits. Offered once a year.
Course offers students a wide range of explanations of deviance. Topics considered are the functions, social definitions, societal reactions and political aspects of deviance as characteristic of all societies. Deviant attributes as well as acts are considered.

GSOCI 240. Individual in Society. 3 credits. Offered fall and spring.
This course explores the importance of social structure, agency and symbolic interaction in the social construction of realities. It will examine major contributors to the sociological social psychological tradition. The course will help students reflect on issues such as self, self-presentation and identity, relationships, body, inequality, citizenship, nonconformity, and resistance.

SOCI 260. Sociology of Culture. 3 credits. Offered fall and spring.
This course examines sociological perspectives about values, norms, symbols, rituals and expressions. Course content includes classic perspectives on the relation between culture and institutions as well as the works of contemporary analysts who have developed, revised and/or challenged these classic positions. Students will learn to apply these perspectives to their own analyses of culture.

SOCI 265. Sociology of the Community. 3 credits.
This course examines the community as a social form. Considered are its function, social definitions, formative processes, development and systems of change. This survey may include, but not be limited to, examination of community studies research and community advocacy for social justice.

SOCI 276. Sociology of Families. 3 credits. Offered fall.
Covers the basic concepts and theories in marriage and the family, looks at basic issues in modern family life, examines changes in family functions and in the various stages of the family life cycle, and discusses the future of the family in contemporary society.

SOC/GERN 280. Social Gerontology. 3 credits. Offered fall and spring.
An interdisciplinary introduction to the study of aging. The course provides an overview of issues surrounding aging in contemporary society: personal, familial, communal and societal.

SOCI 303. Sociology of Death and Dying. 3 credits. Offered once a year.
Investigation of current American orientations toward death and dying with emphasis also given to the social organization of death and dying.

SOCI 311. Sociology of the Environment. 3 credits. Offered once a year.
This course will introduce students to the central debates that currently preoccupy environmental sociology and political ecology. Emphasis is placed on the importance of sociological, historical, and cultural modes of inquiry for understanding: socio-environmental change/crisis, environmental justice/injustice, eco-technological changes, and politics of nature.

SOCI/ANTH 313. Processes of Social and Cultural Change. 3 credits. Offered spring.
Investigates the procedures through which a society operates and the manner in which it introduces and incorporates changes. Issues considered include belief, innovation, directed change, coercive change, revitalization and revolution.

SOCI 315. Science, Technology and Society. 3 credits.
Through an analysis of various issues, problems and case studies, this course will explore the interactions between science, technology and society. The course will examine connections of specific technologies to science, cultural values, social and economic interests and questions regarding progress.

SOCI 316. Space, Time and the Human Social Environment. 3 credits. Offered once an academic year.
This course will examine the impact of the configuration of space, time and social policy on social realities. Sociological critical theory will be used to analyze relationships between the physical and social environments. Prerequisite: SOCI 200.

SOCI 321. Politics in Society. 3 credits.
The relationship between society and politics, the nature of distribution of social power, political participation, political thought, and politics as a vehicle for social change are explored.

SOCI/REL 322. Sociology of Religion. 3 credits.
This course is a sociological analysis of the nature, function and structure of religion. The course is a survey of the relationship between religion and society: the social nature of religious phenomena, the interaction between religious beliefs and practices and other arenas of secular societies, the social functions of religions, and the way religion changes and is changed by secular society.
SOCI/PSYC/KIN 329. Psychological and Sociological Aspects of Sport. 3 credits. Offered spring.
Study of the psychological and sociological implications of sport and the effect of sport on the United States and other cultures.

SOCI/SOWK 330. Corrections. 3 credits. Offered spring.
The history, philosophy, policies and problems of the treatment of violators by the police, courts and correctional institutions.

SOCI 331. Social Statistics. 3 credits. Offered once a year.
Introduction to the techniques for collecting, describing, analyzing and presenting sociological data.

SOCI 334. Socialization and Society. 3 credits.
This course examines socialization in society. Biography, narratives and socialization are examined in relation to issues of personal power, justice, culture, politics, social relations and other social formations.

SOCI 336. Race and Ethnicity. 3 credits. Offered once a year.
This course examines the social construction of race and ethnicity around the world and how they influence social processes, institutions, change and ideology. The course will include discussions concerning the intersection of race and ethnicity with other aspects of social inequality such as class, gender, sexuality and nationality in contemporary society.

SOCI 337. Sociology of Gender. 3 credits. Offered spring.
Examination of theories of sex role development, the roles of men and women in society and gender as a social construction.

SOCI 339. Sociology of Women. 3 credits. Offered spring.
Analysis of the structural position of women in society with emphasis on institutional frameworks such as economy, family, health, religion, sexuality, crime, etc.

SOCI 341. Sociology of Education. 3 credits.
Examination of sociological theories and research on education, emphasizing stratification, socialization, organization and relationship between schooling, family, community and work. Focus on cross cultural approaches to education. Prerequisite: SOCI 101 or permission of instructor.

SOCI 344. Work and Society. 3 credits.
This course examines the nature and meaning of work under various social and historical conditions. This includes such things as the relationship of work organization to life chances and personal experience, the place of work in social theory, the organization of occupations, occupational socialization and commitment, and how the nature of work changes in relation to local and global contexts.

SOCI 345. Sociology of Occupations and Professions. 3 credits.
This course examines the nature and structure of work roles in historical and contemporary perspectives. It includes analysis of the organization of task structures, occupational and professional organizations, the processes of professionalization and deprofessionalization, and the ways in which work roles constitute and are constituted by society.

SOCI 346. Leisure in Contemporary Society. 3 credits.
Sociological analysis of leisure or non-work in contemporary society with particular emphasis upon conceptual and human problems and the potentials of leisure in a context of social change.

SOCI/SOWK 348. Introduction to Developing Societies. 3 credits. Offered once a year.
This course examines economic development and social and political changes in developing countries. The historical experiences of developing societies will be analyzed within the context of the global system and from the perspective of competing and complementary theoretical perspectives.

SOCI/ANTH 352. Birth, Death, Sex: Exploring Demography. 3 credits. Offered once a year.
Fertility (birth) and mortality (death) and their biological and social determinants in cross-cultural and evolutionary/historical frameworks. Exploration of the dynamic between the material constraints on and symbolic significance of, reproduction, sexuality and death within a cultural context. Critical examination of population growth as a global “problem.” Basic demographic methods. Prerequisite: Any lower level course in anthropology or sociology or permission of the instructor.

SOCI 354. Social and Cultural Stratification. 3 credits. Offered fall.
Course covers the systems of stratification in the United States including race, class, gender, religion, sexuality, ethnicity and nationality. Discussion will center on their role in providing rationales for oppression and discrimination in society and their relationship to the distribution of power and ideological control.

SOCI 358. Sociology of Consumption. 3 credits. Offered fall or spring.
This course encompasses themes that range from identity construction to the macro processes of cultural globalization. As consumption becomes more integral to society, it is becoming more central to various disciplines. This course situates scholarly work from this nascent interdisciplinary field of consumption studies within the context of contemporary social, cultural and economic issues.

SOCI 360. Social Movements. 3 credits.
Introduction to the study and analysis of social movements in the United States as agents of social and ideological change. Emphasis is given to movements which have goals of extending and/or protecting rights of individuals and groups in the face of increasing industrialization, urbanization and centralization of power.

SOCI 361. Sociology and Organizations. 3 credits.
Study of organizations primarily in contemporary society such as corporations, prisons, hospitals, social and government agencies, trade unions, etc., their internal structures and processes, impact on individuals, and relation to other social units in society.

SOCI 362. Hip Hop Culture and Critical Social Analysis. 3 credits. Offered summer.
This course engages in a critical examination of modernity and other social issues of relevance to critical social theory through the prism of the hip-hop cultural system. The course examines the historical roots of this African-American/Puerto Rican cultural matrix, distinguishing it from global corporate “rap” industry and discusses the sense in which the latter undermines the traditional narratives of the matrix.

SOCI 367. Sociology of Sexuality. 3 credits. Offered spring or summer.
This course examines sociological theory and research on sexual behaviors, identities, cultures and social movements, investigating how sexuality is shaped by society and its social institutions. In addition, the course examines how sociological research on sexuality is conducted, how society shapes the sociological study of sexuality, the unique ethical concerns and methodological challenges in researching sexuality, and the place of sociology in shaping public discourse and social policy on relevant social issues.

SOCI/ANTH 368. Contemporary American Culture. 3 credits.
This course analyzes contemporary American society in relation to popular cultural formations and representations. Cultural expressions found in music, literature, theatre, film, television, cyberspace and sports will be examined with respect to the values, sentiments, identity constructions and lived experiences of differentially situated social actors.

SOCI 369. Law and Society. 3 credits.
The history and functions of law as a form of social control; the social forces in the creation and practice of the law. The nature of law as a catalyst for and the product of social change.
SOCl 375. Medical Sociology. 3 credits. Offered fall and spring.
An introduction to the field of medical sociology that examines the salient issues in the field and related theoretical perspectives. These two focuses are important in understanding the ability of humans to live to capacity. Attention is given to health care programs in developing countries as well as modern industrial societies.

SOCl 378. Introduction to Africa-Centered Critical Theory and Cultural Studies. 3 credits. Offered fall.
This course introduces students to an alternative scientific world view based upon classical African philosophy and gives them the opportunity to discuss and consider the implications of this alternative vision of science on the conduct of research and on human affairs. Prerequisite: Junior or senior standing required. Sophomores admitted with instructor's permission.

SOCl 379. Africentric Social Thought. 3 credits. Offered spring.
This course is a survey of African social philosophy and thought from individuals throughout various historical periods and locations including the collective community of Diasporic Africans and those of African descent. Sociological data using traditional African philosophical perspectives on being, knowing, understanding and ethics will be examined. Prerequisite: Sophomore standing or higher.

SOCl 380. Critical Analysis. 3 credits. Offered fall and spring.
An examination of the historical context and current status of the critical paradigm within sociology, including issues involved in critical understanding of and participation in modern society. Prerequisites: SOCl 200 and SOCl 201.

SOCl 382. Interpretative Analysis. 3 credits. Offered fall and spring.
A systematic introduction to the interpretive paradigm in sociology, including symbolic interactionism, ethnomethodology, phenomenology, existentialism and action theory. Prerequisites: SOCl 200 and SOCl 201.

SOCl 384. Naturalistic Analysis. 3 credits. Offered fall and spring.
Study of social life through the traditional paradigm of naturalistic science, including exploration of the role of values in science, the logic of scientific procedure and ethical questions surrounding scientific inquiry. Prerequisites: SOCl 200, SOCl 201 and SOCl 331.

SOCl/ANTH 390. Topics in Cultural Studies. 3 credits.
This course explores contemporary culture through a "cultural studies" lens, an interdisciplinary perspective interested in using empirical knowledge to encourage more just human relations. Specific topics of investigation will vary by semester, but each course will cover cultural studies’ intellectual history and its application to cultural expressions found in everyday life, film, music and text.

SOCl 391. Study Abroad. 1-6 credits. Offered fall and spring.
Designed to encourage students to enhance their academic programs through studying abroad. Arrangements must be made with a faculty member who will direct the study with preparatory instructions and final requirements. Prerequisites: Permission of department head.

SOCl 395. Special Topics in Sociology. 3 credits. Offered fall and spring.
Examination of selected topics which are of current importance in sociology. May be repeated for credit when course content changes.

SOCl 400. Senior Seminar in Sociology. 3 credits. Offered fall and spring.
The integration of previous class experience the student has had during the undergraduate years. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: SOCl 380, SOCl 382 and SOCl 384.

SOCl 485. Internship in Sociology. 1-6 credits.
Students participate in internships as or course assistants in anthropology and sociology. Prerequisite: Students seeking credit for internships must secure the approvals of their adviser and department head prior to registration. Students receiving credit as course assistants must have junior/senior standing and can register by faculty invitation only. While a maximum of six credits can be taken under this option, only three credits can be applied toward the major.

SOCl 490. Special Studies in Sociology. 1-3 credits. Offered fall and spring.
Designed to give capable students in sociology an opportunity to complete independent study under supervision. Prerequisites: Recommendation of the instructor and permission of the department head.

SOCl 492. Sociology Field Practicum. 1-3 credits. Offered fall and spring.
Provides the student with practical experience in employing and refining sociological skills in a public or private agency under faculty supervision.

SOCl 499. Honors. 6 credits. Offered fall and spring.
Year course.

Spanish

Department of Foreign Languages and Literatures

SPAN 101-102. Elementary Spanish (4, 1). 4 credits each semester. Offered fall and spring.
The fundamentals of Spanish through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour’s work a week in the language laboratory.

3 credits. Offered fall and spring.
Reviews elementary Spanish grammar, reading, writing, speaking and listening skills in Spanish. One hour of work a week in the language laboratory. For students who have had no more than two or three years of Spanish in high school or qualify through the placement exam. Prerequisite: Permission of the department head.

SPAN 111-212. Intensive Spanish (6, 1). 6 credits each term. Offered May and summer.
This intensive course covers two years of Spanish in one. The first semester is the equivalent to SPAN 101-102 and the second is the equivalent to SPAN 231-232.

SPAN 231-232. Intermediate Spanish. 3 credits each semester. Offered fall and spring.
A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college Spanish or equivalent.

SPAN 280. Technical Spanish Language. 3 credits. Offered fall and spring.
This course is designed to give students knowledge in the Spanish vocabulary needed to communicate with clients and patients in the fields of medical, judiciary and computer sciences. This course is required for those students who are minors in translation. Prerequisite: SPAN 232.

SPAN 300. Grammar and Communication. 3 credits. Offered fall and spring.
Intensive training in grammatical structures and their application to oral and written communication. Instruction is in Spanish. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: SPAN 232.

SPAN 307. Spanish Civilization. 3 credits. Offered fall and spring.
A study of Spanish life and culture from ancient times to the present. Instruction is in Spanish. Prerequisite: SPAN 300.

SPAN 315. Spanish Phonetics. 3 credits. Offered fall and spring.
Intensive drill in Spanish sounds and intonation patterns. Instruction is in Spanish. Prerequisite: SPAN 232 or equivalent.

SPAN 320. Oral and Written Communication. 3 credits. Offered fall and spring.
Intensive training in the use of modern, everyday Spanish with emphasis on conversation and composition. Readings in Spanish will provide a context for discussion and writing. Prerequisite: SPAN 300.
SPAN 325. Advanced Oral and Written Practice in Spanish. 3 credits. Offered fall and spring.
Intensive practice of conversation and composition in Spanish with emphasis on grammar and style. Instruction is in Spanish. The course is recommended to students who need practice in grammar. Counts as an elective for Spanish majors and minors.

SPAN 330. Business Spanish. 3 credits. Offered fall and spring.
A study of commercial and technical vocabulary and trade customs in conjunction with practice in the art of commercial communication including interviews, letter writing and simultaneous interpretation. Instruction is in Spanish. Prerequisite: SPAN 300.

SPAN 335. Introduction to Spanish Literature. 3 credits. Offered fall and spring.
This course is designed to prepare students in literary analysis of the novel as well as short stories, poetry and drama. All necessary terminology will be studied. Mandatory for all Spanish majors before taking any other literature class. Instruction in Spanish. Prerequisite: SPAN 300.

SPAN 385. Latin American Drama and Short Stories. 3 credits.
Offered fall and spring.
Reading and analysis of representative plays and short stories from Latin America. Student reports on selected authors. Instruction is in Spanish. Prerequisite: SPAN 335.

SPAN 390. Spanish Poetry of the 20th Century. 3 credits.
Offered fall and spring.
The course will cover poets such as Antonio Machado, Luis Cernuda, Pedro Salinas and Frederico Garcia Lorca. A complete study of the chronology, historical situation, social context and cultural impact of the poets and their works. Prerequisite: SPAN 335.

SPAN 395. Latin American Poetry of the 20th Century. 3 credits.
Offered fall and spring.
This course will study poets such as Jose Juan Tablada, Ramon Lopez Velarde, Gabriela Mistral, Pablo Neruda, Cesar Vallejo. Life, works, chronology, historical situation, social context and influences, tendencies, and valuations. Instruction in Spanish. Prerequisite: SPAN 335.

SPAN 400. Advanced Conversation. 3 credits. Offered fall and spring.
Discussions deal with topics of current interest. Instruction is in Spanish. Prerequisite: SPAN 300 or equivalent.

SPAN 405. Spanish Novels of the 19th and 20th Centuries. 3 credits. Offered fall and spring.
The development of the Spanish novel from the "costumbristas" through the realism of Galdos and from the writers of the Generation of 1898 to the present. Instruction is in Spanish. Prerequisite: SPAN 335.

SPAN 406. Spanish Drama of the 19th and 20th Centuries. 3 credits. Offered fall and spring.
Readings and discussions of representative works of Spanish drama from the Romantic period to the present. Instruction is in Spanish. Prerequisite: SPAN 335.

SPAN 407. Aspects of Spanish Civilization. 3 credits. Offered fall and spring.
Studies in Spanish art and culture. Studies in the social development that has taken place in Spain after Franco. The course will also cover the influence of Spain in Europe as well as in Latin America. Instruction is in Spanish. Prerequisite: SPAN 307.

SPAN 408. Aspects of Latin American Civilization. 3 credits. Offered fall and spring.
The development of countries like Argentina, Colombia, Peru, Mexico and others from pre-Columbian times to the present. Emphasis on the indigenous and European cultures and their influences on contemporary traditions. Focus on Central America, political developments and revolutions and wars within the last two decades. Instruction is in Spanish. Prerequisite: SPAN 308.

SPAN 415. The Spanish-American Novel. 3 credits. Offered fall and spring.
Reading and analysis of representative works of Spanish-American novelists of the 19th and 20th centuries. Instruction is in Spanish. Prerequisite: SPAN 335.

SPAN 425. Prose of the Golden Age. 3 credits. Offered fall and spring.
A study of the chivalric, sentimental, pastoral and picaresque genres of prose literature and of their development through the Golden Age, culminating in Cervantes. Instruction is in Spanish. Prerequisite: SPAN 335.

SPAN 426. Drama of the Golden Age. 3 credits. Offered fall and spring.
A study of the "comedia" of the Golden Age including works of Lope de Vega, Calderon de la Barca, Tirso de Molina and Ruiz de Alarcon. Instruction is in Spanish. Prerequisite: SPAN 335.

SPAN 427. Poetry of the Golden Age. 3 credits. Offered fall and spring.
Lecture and analysis of Spanish poetry beginning with the Renaissance through the end of the 17th century. The course will cover poets such as Garcilaso de la Vega, Fray Luis de Leon, and San Juan da la Cruz. Instruction in Spanish. Prerequisite: SPAN 335.

SPAN 460. Post War Literature in Spain. 3 credits. Offered fall and spring.
Reading and analysis of representative works of Spanish novelists and their development after the Civil War in Spain. Emphasis on Spanish history and society under the influence of Franco's Regime. Instruction is in Spanish. Prerequisite: SPAN 335.

SPAN 465. Cinema and Literature. 3 credits. Offered fall and spring.
Studies of the structure of the cinema and its relation to literature. Comparison between different literary works and their interpretation in cinema. The course will cover topics in Spain and Latin America. Instruction in Spanish. Prerequisite: SPAN 335.

SPAN 492. Practical Spanish. 3 credits. Offered fall and spring.
This course gives students the opportunity for oral practice of Spanish in the local Hispanic community. Students will develop fluency in the language and will gain knowledge of Hispanic culture and traditions. Prerequisite: SPAN 300 or SPAN 320.

Special Education College of Education
The nature, needs and problems of exceptional children and how these relate to educational provisions are studied. The status of the disabled in society will be emphasized. Federal and state laws ensuring the rights of the disabled will be stressed.

SPED 202. Field Experiences in Special Education. 3 credits.
Provides students with supervised experiences with persons with disabilities. Placements are made in various settings including schools, institutions and recreational programs. Prerequisite: SPEC 200 or permission of the instructor.

SPED 300. Educational Technology for Students with Disabilities. 1 credit.
An introduction to instructional technology for persons with disabilities. The role of assistive technology in the educational process is investigated. Students are exposed to a variety of instructional programs and equipment. Federal and state guidelines, interdisciplinary team functioning, and program, as well as equipment selection, are addressed.

SPED 310. Survey of Emotional/Behavioral Disorders. 2 credits.
A detailed study of the characteristics, diagnosis, treatment, assessment and education of individuals with emotional/behavioral disorders. Medical, psychological, behavioral and environmental causes are presented as well as therapeutic interventions, educational resources and instructional strategies. Prerequisite: SPED 200 or permission of the instructor.
SPED 312. Field Experience in Special Education and Diversity. 1 credit.
Students devote 30 clock hours to activities in school and nonschool settings that emphasize diversity of individuals and families. Corequisite: EDUC 310.

SPED 320. Survey of Learning Disabilities. 2 credits.
A detailed study of the theories, characteristics, etiology and needs of individuals with learning disabilities including ADHD. Focus will be on causation and terminology as well as historical perspectives and current trends related to practices in identification and treatment of learning disabilities. Prerequisite: SPED 200 or permission of the instructor.

SPED 330. Survey of Mental Retardation. 2 credits.
A detailed study of the characteristics, diagnosis, treatment and education of individuals with mental retardation. Medical aspects and implications for support needs are addressed as well as educational settings, resources and instructional techniques designed to facilitate integration for individuals with mental retardation. Prerequisite: SPED 200 or permission of the instructor.

SPED 340. Classroom Observations in Special Education. 1 credit.
This practicum experience will provide an opportunity to observe the learning and behavioral characteristics of students with learning disabilities, mental retardation and emotional disturbance in various educational settings. Corequisites: SPED 310, SPED 320 and SPED 330.

SPED 350. Psychoeducational Assessment of Learning and Behavior Problems. 3 credits.
A detailed study of psychoeducational assessment procedures and instruments for eligibility, instructional planning and evaluation for students with mental retardation, learning disabilities and emotional disturbance. The course emphasizes skills in administering formal and informal instruments, interpreting results and formulating individual educational plans based on assessment findings. Prerequisites: SPED 200, SPED 310, SPED 320, and SPED 330 or permission of the instructor.

SPED 401. Problems in Special Education. 1-3 credits.
Considers current problems and issues in special education as they relate to the professional education of teachers.

SPED 420. Developing and Managing the Special Education Instructional Program. 1 credit.
This course explores the practical skills and strategies needed to develop and implement programming for K-12 special education students. Skills will be applicable in consultative, self-contained, resource and integrated settings. Corequisite: SPED 350.

SPED 430. Practicum in General Education Methods. 2 credits.
This practicum experience is designed to enhance understanding of the scope and sequence of the general education curriculum, to explore the impact of state curriculum standards and to provide an opportunity to observe teaching methods in language arts and mathematics. Corequisites: READ 430, MIED 530 and EDUC 430.

SPED 440. Classroom Management and Professional Collaboration. 3 credits.
A focus on techniques used to manage the behavior of students. Emphasized are strategies used to prevent inappropriate behavior from occurring and/or worsening. Other interventions are taught such as techniques for working with others (e.g., parents, teachers and administrators) who may provide behavior management assistance to teachers and administrators.

SPED 450. Principles of Specialized Reading Instruction. 3 credits.
The content of this course will focus on the acquisition and development of reading skills for students with disabilities. Content will include: characteristics of students with reading disabilities; informal assessment strategies; the relationship of oral language to reading; stage-development of reading skills; research-based instructional methods; principles of specialized reading instruction; scientifically-based reading programs for students with disabilities; and collaboration with parents to enhance students’ reading skills. Prerequisite: READ 430.

SPED 460. Differentiation of Instruction and Academic Collaboration. 3 credits.
This course assists preservice teachers in using their understanding of exceptional learners and learning to accommodate the diversity of students in the general education classroom. In addition, preservice teachers will explore the roles of teachers and how general and special education teachers collaborate to meet the needs of exceptional students.

SPED 485. Systematic Behavioral Interventions. 3 credits.
A detailed study of purposes and procedures involved in the development of Individualized Educational Programs (IEP) for students with disabilities. In addition, the course emphasizes the selection or design of curriculum-based assessment to plan and evaluate instruction in academics, social behaviors and life skills. Corequisites: SPED 420, SPED 450 and SPED 470.

SPED 490. Special Studies in Special Education. 1-3 credits.
Designed to allow the student to complete independent study under faculty supervision. Prerequisite: Permission of the program coordinator.

SPED 499. Honors. 6 credits.
See catalog descriptions titled “Graduation with Distinction” and “Graduation with Honors.”

Studies Abroad Course, Regularly Scheduled

Semester in Antwerp
COB 300A. Integrated Functional Systems: Management. 3 credits.
COB 300A is the management component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisites: Completion of all required 100 and 200 B.B.A. core courses, demonstrated computer competencies; junior standing (56 hours) and a cumulative 2.5 grade point average in all courses taken at JMU.
COB 300B. Integrated Functional Systems: Finance. 3 credits.
COB 300B is the finance component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisite: Completion of all required 100 and 200 B.B.A. core courses, demonstrated computer competencies; junior standing (56 hours) and a cumulative 2.5 grade point average in all courses taken at JMU.

COB 300C. Integrated Functional Systems: Operations. 3 credits.
COB 300C is the operations component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisite: Completion of all required 100 and 200 B.B.A. core courses, demonstrated computer competencies; junior standing (56 hours) and a cumulative 2.5 grade point average in all courses taken at JMU.

COB 300D. Integrated Functional Systems: Marketing. 3 credits.
COB 300D is the marketing component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. Prerequisite: Completion of all required 100 and 200 B.B.A. core courses, demonstrated computer competencies; junior standing (56 hours) and a cumulative 2.5 grade point average in all courses taken at JMU.

COB 301. European Integration, Culture and History. 3 credits.
This course is designed to supplement COB 300 A-D when taught as part of the semester in Antwerp, Belgium program. COB 301 will only be offered as part of the semester in Antwerp program. Students will study European Integration in the classroom and visit governmental institutions, historical places and cultural events associated with course content. Prerequisites: COB 241, COB 242, ECON 201 and acceptance to the semester in Antwerp program.

Semester in Florence

*ARTH 313. Italian Renaissance Art. 3 credits.
Exploration of the invention of perspective and techniques of Renaissance realism including masterpieces by major artists such as Giotto, Donatello and Michelangelo. Weekly visits to museums and churches. Taught in English.

*ENG 302. Dante's Commedia, Selections from Inferno, Purgatorio and Paradise. 3 credits.
Dante's Commedia, a vision of the other-world, the account of a journey through Hell, Purgatory and Paradise, is one of the world's greatest poems, an achievement of the poetic imagination. Students will also endure to modern times. Taught in English; Italian majors and minors may receive Italian credit by completing all written assignments in Italian.

ENG 381F/ITAL 465F/SMAD 460F. Italian Cinema 1930-1980. 3 credits.
Literary and visual analysis of the work of major Italian filmmakers such as Fellini and Visconti and others. Weekly film viewing. Taught in English; Italian majors and minors may receive Italian credit by completing all written assignments in Italian.

*GHUM 250F. The Florentine Enlightenment; Humanism in Florence. 3 credits.
This course aims at introducing students to the spirit and lesson of the Humanism movement. Lectures, seminars and readings are meant to help students develop a sense of the historical tradition, and at the same time understand the importance of studia humanitatis. Humanism is a passage from an age of heroes and knights to an age of bourgeois society, from faith and authority to free reason and enterprise, from asceticism and symbolism to the study of nature, from a God-centered world to a human-centered one. Taught in English.

ITAL 101F. Elementary Italian. 3 credits.
The fundamentals of Italian through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension.

ITAL 102F. Elementary Italian. 3 credits.
The fundamentals of Italian through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension.

ITAL 231F. Intermediate Italian. 3 credits.
A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college Italian or equivalent.

ITAL 232F. Intermediate Italian. 3 credits.
A thorough review of grammar, vocabulary building, conversation, composition and reading. Prerequisite: One year of college Italian or equivalent.

ITAL 300F. Italian Grammar and Communication. 3 credits.
Intensive training in grammatical structures and their application to oral and written communication. Instruction is in Italian. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: ITAL 300.

ITAL 320F. Italian Oral and Written Communication. 3 credits.
Intensive training in the use of modern, everyday Italian with emphasis on conversation and composition. Readings in Italian will provide a context for discussion and writing. Instruction is in Italian. Prerequisite: ITAL 300.

ITAL 335F. Introduction to Italian Literature. 3 credits.
A survey of Italian literature from its beginning to the present. Textual analysis of sample writings representative of the most important literary movements. Instruction is in Italian. Prerequisite: ITAL 300.

GIMUS 200F. Music in General Culture. 3 credits.
Study of music from the Classic Western heritage including Gregorian chant, symphonic music and comic opera. Students attend concerts. Taught in English.

POSC 371F. The Integration of Europe. 3 credits.
Italy's place in the development of the European Union and related economic and political issues. Taught in English.

Semester in London

*ARTH 316. Masterpieces of British Art. 3 credits.
Survey of painting and sculpture in Britain from 1530 to 1880 concentrating on 18th-19th century painting. British art is viewed in the context of European civilization. Weekly visits to London museums including the Portrait Gallery, Sir John Soane's House, the Wallace Collection and the Tate Gallery.

*ENG 302R. London in Literature. 3 credits.
The world of London as reflected in selected literary forms and texts from the 16th century to the present day. Weekly outings visit historic sites connected with the assigned readings.

*ENG 458L. Shakespeare on the Page and Stage in London. 3 credits.
Students will study the plays of Shakespeare currently in production in London and England with special emphasis on the productions of the Royal Shakespeare Company and the National Theatre. Course can be substituted for either ENG 456 or ENG 457 but may not be taken for credit in addition to both.

*GHUM 200L/THEA 449. The London Theatre. 3 credits.
A survey of drama, classical through contemporary, from the London stage. Weekly plays from the London stage, including an overnight visit to Stratford-On-Avon.
HIST 392L. English Social History from the Industrial Revolution to the Present. 3 credits.
An introduction to the social history of England from the 18th century to contemporary times. Weekly outings to museums and sites of historic interest.

*GMUS 200L. Music in General Culture. 3 credits.
Study of music from the classic Western heritage. Other types of music will be considered, including some attention to contemporary and popular forms. Weekly concerts.

POSC 371L. British Legal and Political Institutions. 3 credits.
An introduction to English government and law. Outings include visits to Parliament, trials and other events of political and legal import.

Semester in Salamanca

*ARTH 314/Spanish 490T. Spanish Art. 3 credits.
A study of the art and architecture of Spain from medieval times through present. Concentration on specific artists, as well as general movements in the history of Spanish art. Since it is taught in Spanish, Spanish credit may also be given. Prerequisite: SPAN 300 or equivalent.

ECON 312. Comparative Economic Systems. 3 credits.
An examination of the distinguishing characteristics, institutions and performances of the various types of major economic systems in the world today. Taught in Spanish. Spanish credit may also be given. Prerequisites: ECON 201, GECON 200, and SPAN 300 or equivalent.

IBUS 298. Special Topics in International Business. 3 credits.
Study of European Economic Community with focus on economic integration, historical aspects of the community in Europe, the United Market, the community budget, common commercial policies, common agrarian politics, common transportation politics, regional development politics, other fields of community action and economic and monetary union. Taught in Spanish. Spanish credit may also be given. Prerequisite: SPAN 300 or equivalent.

POSC 371S. Comparative Politics: Spain/United States. 3 credits.
A comparative study of political systems in Spain and the United States. Emphasis on historical and contemporary issues. Taught in Spanish. Spanish credit may also be given. Prerequisite: SPAN 300 or equivalent.

SPAN 300S. Spanish Grammar and Communication. 3 credits.
Intensive training in grammatical structures and their application to oral and written conversation. Instruction is in Spanish. Prerequisite: SPAN 232 or equivalent.

SPAN 307S. History of Spanish Civilization. 3 credits.
Study of Spanish life and culture from ancient time to the present. Prerequisite: SPAN 300 or equivalent.

SPAN 308S. Latin American Civilization. 3 credits.
A study of the geographical, historical and cultural development of Latin America from pre-Columbian times to the present. Instruction is in Spanish. Prerequisite: SPAN 300 or equivalent.

SPAN 315S. Phonetics. 3 credits.
Intensive drill in Spanish sounds and intonation patterns. Continued emphasis on conversation. Instruction is in Spanish. Prerequisite: SPAN 232 or equivalent.

SPAN 320S. Spanish Oral and Written Communication. 3 credits.
Intensive training in the use of modern, everyday Spanish with emphasis on conversation and composition. Readings in Spanish will provide a context for discussion and writing. Instruction is in Spanish. Prerequisite: SPAN 300 or equivalent.

SPAN 330S. Business Spanish. 3 credits.
Study of commercial and technical vocabulary and trade customs in conjunction with practice in the art of commercial communication including interviews, letter writing and simultaneous interpretation. Prerequisite: SPAN 300 or equivalent.

SPAN 335S. Introduction to Spanish Literature. 3 credits.
This course is designed to prepare students in literary analysis of the novel as well as short stories, poetry and drama. All necessary terminology will be studied. Mandatory for all Spanish majors before taking any other literature class. Instruction in Spanish. Prerequisite: SPAN 300.

*SPAN 385S. Latin American Drama and Short Stories. 3 credits.
Readings and analysis of representative plays and short stories from Latin America. Student reports on selected authors. Instruction is in Spanish. Corequisite or prerequisite: SPAN 300.

SPAN 400S. Advanced Conversation. 3 credits.
Discussions deal with topics of current interest. Instruction is in Spanish. Prerequisite: SPAN 300 or equivalent.

SPAN 465S. Cinema and Literature. 3 credits. Offered fall and spring.
Comparative studies between cinema and literature. Corequisite or prerequisite: SPAN 305.

SPAN 490S. Special Studies in Spain. 3 credits.
Only students who will have successfully completed both SPAN 320 and SPAN 400 prior to studying in Salamanca may enroll in this course.

Technical and Scientific Communication

Institute of Technical and Scientific Communication

TSC 210. Introduction to Technical and Scientific Communication. 3 credits. Offered fall and spring.
Introduction to the central components of technical and scientific communication, including technical summaries, definitions, descriptions, instructions, reports, correspondence and proposals. Examines the process of planning, researching, producing and revising technical and scientific communications attuned to specific audiences and directed by clearly defined purposes.

TSC 220. Technical and Scientific Communication for Non-Native Speakers of English. 3 credits.
Introduction to the central components of technical and scientific communication, including technical summaries, definitions, descriptions, instructions, reports, correspondence and proposals. Emphasizes common problems confronted by technical or scientific communicators who are not native speakers of English, including macro and micro organization, style, paragraphing, grammar, usage, punctuation, and idiomatic language.

TSC 230. Bibliographic Research in Technical and Scientific Communication. 3 credits. Offered fall and spring.
Introduction to research methodologies used in technical and scientific communication, covering techniques for collecting information or data through primary and secondary sources. Includes evaluation of information from print and electronic sources for accuracy, usefulness and credibility, as well as the skillful integration of source material into reports. Fulfills the College of Arts and Letters writing-intensive requirement for the major.

TSC 240. Technical and Scientific Editing. 3 credits. Offered fall and spring.
Introduction to the central responsibilities of editors when guiding a document through the editorial process, including establishing the need, purpose and scope of a document; developing levels of edit; copyediting; conducting substantive edits; determining document design; editing graphic aids; collaborating with authors; and proofreading.

Study of the ethical and legal issues confronted by technical communicators in a range of fields. Examines the role of ethics in the field, the nexus of ethics and the law, ethical theories and critical thinking in moral reasoning, falsification of information or data, ownership of information, confidentiality, copyright and trademark laws, conflicts of interest, and causes of unethical behavior. Prerequisite: TSC 210, TSC 220 or permission of the instructor.
TSC 310. Rhetorical Analysis. 3 credits.
Study of how writers and editors in technical and scientific communication structure the semantics and syntax of language to achieve rhetorical objectives. Examines methods for applying principles of effective rhetoric to the design and writing of documents in the field. Emphasizes extensive textual analysis of rhetorical models and work-world documents. Prerequisites: TSC 210 or TSC 220 and TSC 230, or permission of the instructor.

TSC 330. Intercultural Technical and Scientific Communication. 3 credits.
Introduction to effects of culture on technical and scientific communication, both in print and online, including a consideration of audience, context, language, page or screen design, graphics and use of color. Examines basic models of culture used in intercultural communication including management considerations, teamwork and translation issues. Prerequisites: TSC 210 or TSC 220 and TSC 230.

TSC 350. Science and Technology in Literature. 3 credits.
Exploration of the ongoing dialogue between science, technology and literature through the reading of literary responses to the effects of such technologies and resulting social phenomena as machine production, urbanization, quantum mechanics, computerization, genetic engineering and the alienation of the worker. Prerequisites: TSC 210 or TSC 220 and TSC 230, or permission of the instructor.

TSC 360. Instructional Design and Training. 3 credits.
Introduction to principles of instructional design, especially as they are applied to technical and scientific training programs in the public and private sector. Emphasizes audience analysis, client relations, oral presentation skills, training tools, integration of visual aids and evaluation techniques. Includes both online and in-person approaches to training. Prerequisites: TSC 210 or TSC 220 and TSC 230.

TSC 410. Government Writing. 3 credits.
Study of writing genres from a variety of fields within government. Examines the purposes, audiences and formats unique to government publications. Directs students in writing original and editing existing government documents. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240, or permission of the instructor.

TSC 420. Legal Writing. 3 credits.
Study of central components of legal writing, such as the use of legal search tools; representation of facts and evidence; statutory and secondary authority; legal periodicals; citation form; and drafting letters, memoranda, and case briefs. Addresses such key rhetorical elements of legal documents as clarity and conciseness of style, coherent and unified organization, level of diction, jargon, passive voice and errors in person. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240, or permission of the instructor.

TSC 430. Medical Writing. 3 credits.
Study of the theory and practice of writing about technical and scientific information in medical and health science fields. Examines the role of the medical writer in medical and health care professions, the ethical issues involved in medical writing, and writing clear and concise documentation. Emphasizes writing about medical practices for non technical audiences such as patients and their families. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240, or permission of the instructor.

TSC 440. Proposal Writing. 3 credits.
Study of the planning and writing of proposals with emphasis on informal (i.e., business) proposals. Covers proposal strategies that address central components of a successful proposal. Students work on real and client-based proposals. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240, or permission of the instructor.

TSC 450. User Documentation. 3 credits.
Study of theory and practice on computer documentation for end users. Emphasizes documentation design and production, online documentation, usability testing, and writing of users’ guides. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240, or permission of the instructor.

TSC 455. Managerial and Entrepreneurial Communication. 3 credits.
Advanced study of the function of technical communication in management. Students learn to conduct research about business cultures and to select communication channels for technical and scientific messages. Students develop communications for supervising, managing, and representing technical or scientific communication units within various types of industrial and knowledge development organizations. They learn to measure and communicate the value added to an organization through technical communication. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240, or permission of instructor.

TSC 460. Beginning Topics in Electronic and Online Publication. 3 credits.
Beginning study and creation of electronic and online publications, including Web sites. Introduces graphics programs used by Web designers. Emphasizes principles in designing and coding. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240. Approval of the director required.

TSC 461. Intermediate Topics in Electronic and Online Publication. 3 credits. Offered fall and spring.
Intermediate study of electronic and online publications, building upon the skills and knowledge gained in TSC 460. Emphasizes the tools for creating, assessing and maintaining electronic data. Prerequisite: TSC 460 or approval of the director.

TSC 462. Advanced Topics in Electronic and Online Publication. 3 credits.
Advanced study of electronic and online publications. Emphasizes advanced design and coding techniques using current materials and skills. Prerequisite: TSC 461 or approval of the director.

TSC 480. Special Topics in Technical and Scientific Communication. 3 credits.
Advanced course work focusing on a topic in technical and scientific communication not covered in sufficient detail in normal course offerings. Courses can include practical, theoretical, literary or pedagogical topics in technical and scientific communication. May be repeated when course content changes. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240; or permission of instructor. Approval of the director required.

TSC 481. Beginning Web Theory and Design. 3 credits.
Beginning study of Web theory and design, such as audience, purpose, structure, accessibility, content and its components, design and its components, and usability. Emphasizes design principles for online technical publications. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240. Approval of the director required.

TSC 482. Advanced Web Theory and Design. 3 credits.
Advanced study of Web theory and design. Focuses on the business of Web design. Emphasizes theories of evaluating, revising and maintaining Web sites; searching for the Web developer job; negotiating client contracts; creating the Web team; managing the Web project; and learning the advantages and disadvantages of various technological tools technical communicators use on the job. Prerequisite: TSC 481 or approval of the instructor.

TSC 490. Advanced Independent Study in Technical and Scientific Communication. 3 credits.
Individualized projects in technical, scientific or professional communication. Available only to junior or senior majors. May be repeated with the director’s approval when course content changes. Prerequisites: TSC 210 or TSC 220, TSC 230, and TSC 240; or permission of the instructor.

TSC 495. Internship in Technical and Scientific Communication. 3 credits.
Work experience within industry, government or the university in technical or scientific communication. Designed to allow students to incorporate field experience with TSC course work through internships in government, business, industry or education where they can observe communication processes and apply effective written, interpersonal and public communication skills. Prerequisites: TSC 210 or TSC 220, TSC 230, TSC 240, and permission of the instructor. Should be taken in senior year and cannot be repeated.
Technical Translation
Department of Foreign Languages and Literatures

Not available for 2006-2007

TR 300. Introduction to Translation. 3 credits.
An intensive course that focuses on fundamental principles, general methods, and the use and development of lexical materials in translation. Prerequisite: 300-level course in a foreign language or equivalent (foreign literature/civilization courses taught in English do not count).

TR 311. Spanish-English Technical/Commercial Translation. 3 credits.
Spanish-English translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: TR 300 and SPAN 330 or permission of the instructor.

TR 321. English-Spanish Technical/Commercial Translation. 3 credits.
English-Spanish translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: TR 300 and SPAN 330 or permission of the instructor.

TR 331. French-English Technical/Commercial Translation. 3 credits.
French-English translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: TR 300 and FR 330 or permission of the instructor.

TR 341. German-English Technical/Commercial Translation. 3 credits.
German-English translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: TR 300 and GER 330 or permission of the instructor.

TR 351. Italian-English Technical/Commercial Translation. 3 credits.
Italian-English translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: TR 300 and ITAL 330 or permission of the instructor.

TR 361. Russian-English Technical/Commercial Translation. 3 credits.
Russian-English translation applied in several commercial (i.e., marketing, finance) and technical (i.e., electricity and electronics, software, hardware) fields. Focus will be on the acquisition of specialized knowledge (both linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisites: TR 300 and RUS 330 or permission of the instructor.

TR 400. Text Revision. 3 credits.
Text revision focuses on the principles of linguistic revision applied to texts translated into English or written in English. It also involves the relationship between the translator and the reviser. Texts are evaluated and corrected on several levels: spelling, punctuation, syntax, semantics, stylistics, pragmatics. Prerequisite: TR 300.

TR 402. Theory and Practice in Terminology and Lexicography. 3 credits.
Terminology is the study and compilation of specialized terms used in LSPs (Languages for Special Purposes). This course addresses theories of terminology and terminology management, including computer applications designed to support the work of translators, technical writers and information specialists. Prerequisite: TR 300.

TR 404. Computer Tools for Translators. 3 credits. Offered fall and spring.
Modern translation involves numerous computer applications. This course addresses the main components of the translator’s workstation. Students will gain hands-on experience of advanced work-process features, machine-aided translation tools and statistical linguistics software. Prerequisite: TR 300.

TR 406. Web Site and Software Localization. 3 credits.
This course addresses the business, technical, cultural and linguistic issues involved in the complex process of localizing Web sites and software for foreign markets. Internet will be used as the forum through which to present and discuss class material. Prerequisite: TR 300 or permission of instructor.

TR 408. Project/Workflow Management. 3 credits.
Management, business, technical, and computer-related issues involved in localizing Web sites and software for foreign markets. Budgeting, negotiating and relationships with translators and clients will be simulated. Prerequisites: TR 300 or permission of instructor.

TR 429. Spanish-English Text Revision. 3 credits.
Text revision focuses on the principles of linguistic revision applied to texts translated from Spanish into English or written in English. It also involves the relationship between the translator and the reviser. Texts are evaluated and corrected on several levels: spelling, punctuation, syntax, semantics, stylistics, pragmatics. Prerequisite: TR 300.

TR 439. Song Translation, French into English. 3 credits.
Analysis of famous French songs at the lexical, sociolinguistic and semantic levels, and their translations. Emphasis will be placed on prosodic translation and the meaning of the lyrics. Prerequisite: TR 300.

TR 459. Internship in Translation, Interpreting or Terminology. 3 credits.
Real experience in a translation bureau, an in-house translation department, or any other business/government entity needing translation services. The internship leads to a report, which is evaluated by a panel. Prerequisites: TR 300 and at least one specialized translation class. Permission of the instructor.

TR 460. Freelance Translation, Interpreting or Terminology. 3 credits.
Real experience with clients needing translation services, terminology management or other linguistic consulting services. Students are supervised by their JMU adviser. The freelance activity leads to a report, which is evaluated by a panel. Prerequisites: TR 300 and at least one specialized translation class and permission of the instructor.

Theatre

School of Theatre and Dance
THEA/DANC 171. Performance Production. 3 credits. Offered fall and spring.
An introduction to the methods of the production of scenery, properties, costumes, lighting, sound and performance management for theatre and dance performances. Instruction in the skills required for the operation of associated tools and equipment and instruction in the skills required for the operation of lighting and sound equipment will be taught.
THEA 190. Topics in Theatre. 1-3 credits, repeatable to 6 credits. Offered summer.
Study of the practice of the various aspects of theatre. Emphasis on applied projects structured to provide technical and performance experience. Offered in summer session only with the consent of the director and the instructor. Will not count as credit toward major.

THEA 200. Theatre Practicum. 1 credit. Offered fall, spring and summer. Students who participate in co-curricular theatre activities may receive one hour credit per semester. May be repeated during junior and senior years. No student may enroll in more than one practicum per semester. Majors may apply a maximum of four hours practicum credit toward meeting major requirements.

THEA 210. Introduction to Theatre. 3 credits. Offered fall and spring. Study of the theatre as an art form. Emphasis on introducing students to a broad spectrum of theatrical activity and opinion. Consideration of the components that comprise a theatre event including acting, directing, design, costing, lighting and playwriting.

THEA 211. Performance Analysis. 3 credits. Offered fall and spring. Plays are examined as texts for performance. Theories of performance and methods for the analysis of performances in and out of the theatre are studied.

THEA 251. Basic Acting. 3 credits. Offered fall and spring. A study of basic acting as a performance experience. Emphasis on fundamentals of performance including concentration, transitions, interaction and the structuring of action.

THEA 261. Voice for the Stage. 3 credits. Offered once a year. Theories and exercises designed to equip the student with proper speech for the stage through a fundamental understanding of phonetics and articulation.

THEA 271. Technical Theatre. 3 credits. Offered once every other year. Study of the technical aspects of stage production. Emphasis upon practical experience in the use of stage and shop facilities. Consideration of the physical theatre and stage, construction, painting and rigging of scenery as applied to theatrical production.

THEA 272. Visual Aspects of Theatre. 3 credits. Offered fall and spring. Study of the interrelationship between the playwright, director and actor with the scenic, lighting and costume designers; introduction of the basic documents of the design process; survey of current and historical trends in theatrical design; no artistic or technical skills necessary.

THEA 300. Theatre Practicum. 1 credit. Offered fall and spring. Students who participate in co-curricular theatre activities may receive one credit per semester. May be repeated during junior and senior years. No student may enroll in more than one practicum per semester. Majors may apply a maximum of four hours practicum credit toward meeting major requirements.

THEA 303. Topics in Theatre. 1-3 credits, repeatable to 6 credits. Study of current topics and issues in theatre. Emphasis on contemporary themes of immediate concern. Prerequisite: Permission of the instructor.

THEA 310. Theatre for Young Audiences. 3 credits. Offered spring. Study of the principles, contemporary trends and practical techniques involving the production of theatrical materials for young audiences.

THEA 315. The European Theatre Tradition to 1800. 3 credits. Offered fall. The history of the European theatre tradition from its birth in Athens to the 18th century is studied with respect to theatre architecture, scene and costume design, political and social context, intellectual climate, and the theory and history of acting.

THEA 316. The European Theatre Tradition from 1800. 3 credits. Offered spring. The history of the European theatre tradition from the 18th century to the present is studied with respect to theatre architecture, scene and costume design, political and social context, intellectual climate, and the theory and history of acting.

THEA 320. History of Performance in Motion Pictures. 3 credits. A survey of motion pictures as records of the forms, techniques and social impact of dramatic performance. Emphasis on the shaping of performance style within changing cultural contexts. Consideration of particular films and performers as exemplars of important periods.

THEA 331. Technical Costuming. 3 credits. Offered once a year. Introduction to the technical aspects involved in building complete costume ensembles for the stage, screen and dance. Emphasis placed on experiencing unique problems in production situations, including specialized costume and accessory construction, ornamentation, fabric treatment, difficulties, and alternatives in presenting historical clothing and renovating and exploiting available materials.

THEA 332. Survey of Costume Fashion and Manners. 3 credits. Offered once a year. A survey of Western world costume from 4000 B.C. to the present as it reflects the sociocultural and socioeconomic aspects of the times. Emphasis on the evaluation of historic costume in relation to architecture, sculpture, painting and other art forms.

THEA 333. Costume Design. 3 credits. Offered once a year. The study of basic design and construction techniques of stage costumes. Emphasis on costuming in terms of the total production concept including directorial approach, setting and lighting design. Consideration of the process of costuming a theatrical production from first production meetings to opening night.

THEA 336. History, Theory and Practice of Stage Makeup. 3 credits. Offered fall and spring. Study of the history and practice of makeup for ceremonial and theatrical presentations of selected major cultures, from ancient Egypt to the present. Consideration given to makeup as a reflection of the social organization of each culture. Emphasis on makeup as an important element in the history of design aesthetics as well as a vital part of the performing arts.

THEA/ENG 347. Playwriting. 3 credits. Offered fall and spring. Study of the process of writing plays. Consideration of plot, character, thematic material, conflict and dramatic structure. Emphasis on individual writing assignments.

THEA 351. Intermediate Acting. 3 credits. Offered fall and spring. Study of the fundamental theories and methods of acting. Emphasis on laboratory experience in the preparation of scenes. Consideration of various acting techniques through performance with maximum individual on-stage instruction. Prerequisite: THEA 251 or permission of the instructor.

THEA 353. Music Theatre Workshop. 3 credits. Offered fall and spring. Advanced study of music theatre performance styles through the preparation and performance of scenes selected from the standard repertoire in an intensive workshop environment. Basic music skills and singing ability are highly recommended. Prerequisite: THEA 251 or consent of the instructor. Audition may be required.

THEA 355. Directing for the Theatre. 3 credits. Offered fall. Study of the principles, problems and techniques of play direction. Emphasis on historical and modern theories. Techniques of direction considered as applied to the stage and cinematography. Prerequisites: THEA 251 and either THEA 210 or THEA 211.

THEA/MUS 357. Music Theatre History. 3 credits. Offered once every other year. A survey of the history of music theatre in America, both narrative and non-narrative, from 1750 to the present. Consideration of how music theatre developed from and reflects the cultural, social and political landscape of its time.

THEA 371. Advanced Technical Theatre. 3 credits. Advanced study of the technical aspects of stage production. Emphasis upon contemporary scenographic techniques. Consideration of construction, decoration, rigging and touring problems in theatre production. Prerequisite: THEA 171 or permission of the instructor.
THEA 374. Stage Lighting. 3 credits. Offered fall.
Study and analysis of stage lighting. Consideration given to basic elements of electricity, electrical control and circuitry, reflection, refraction and color. Emphasis on the lighting design and aesthetics of a theatrical production.

THEA 378. Scene Design. 3 credits. Offered spring.
Study and analysis of the visual elements of theatrical production. Emphasis on the principles and elements of design, drafting and rendering. Consideration of the aesthetics of stage design through specific applied projects.

THEA 382. Contemporary Theatre. 3 credits. Offered once every other year.
Study of post-1968 world theatre with particular attention to English and American drama. Emphasis is placed on significant drama of the last 25 years with discussion of trends in theatrical production and dramatic writing in recent decades.

THEA 390. Directed Projects. 3 credits, repeatable to 6 credits. Offered fall and spring.
Supervised projects related to the study of theatre. Credit given for original, individual or group programs beyond the usual course offerings in theatre. A suitable completed project or report is required before credit can be awarded. Prerequisite: Permission of the director.

THEA 440. Seminar in Theatre. 3 credits.
Studies of topics in theatre. Emphasis on research methods unique to theatre studies. Consideration of topics in both theoretical and practical aspects of theatre.

THEA 441. Senior Seminar in Theatre. 3 credits. Offered fall.
In this capstone course, students will spend the semester developing a research project. Students will produce a piece of original scholarship related to their study in the major. Career planning, dramatic criticism and other topics of interest will be included. Fulfillment of the writing-intensive requirement for the major. Prerequisites: Senior standing and admission to the major.

THEA/ENG 447. Advanced Playwriting. 3 credits. Offered fall and spring.
An advanced workshop with emphasis on developing full-length dramatic material. Prerequisite: THEA/ENG 347.

THEA 449. London Theatre. 3 credits. Offered fall and spring.
Study of London theatre. Consideration given to current productions of classic and contemporary works. Emphasis on production elements including acting, directing, design, writing and economic considerations. Prerequisite: Semester-in-London students only.

THEA 450. The Open Studio: An Interdisciplinary Approach to Creative Arts. 3 credits.
Introduction to the interdisciplinary studio through discussion of the history of interdisciplinary art and exposure to contemporary examples from dance, theatre, music, creative writing, visual art, film and video. Emphasis on production of original work that evidences the use of another media or collaborative work by artists from different disciplines. Prerequisites: Permission of the instructor(s) and advanced skill level in one or more of the creative arts.

THEA 452. Advanced Acting. 3 credits. Offered fall.
Critical study and appreciation of acting developed by readings, discussions and presentations of individual and group scenes. Consideration of dramatic literature from the classical Shakespearean and Restoration periods. Emphasis on analysis and understanding of how these works can be performed. Prerequisite: THEA 351.

THEA 453. Advanced Performance Techniques. 3 credits. Offered spring.
Study of advanced techniques for auditioning and performing on the stage and in the studio. Emphasis on practical preparation for performance work. Prerequisite: THEA 351.

THEA 466. Media Performance. 3 credits.
Study of the principles and techniques of dramatic performance for the camera and microphone. Emphasis on the adaptation of each student’s performance and production skills to the recording and filming of narrative works. Consideration of the differing problems and potentials of stage, video and film presentations. Prerequisite: THEA 452 or permission of the instructor.

THEA/DANC 471. Stage Management. 3 credits.
Study and analysis of stage management. Consideration given to the methods and strategies for successful stage management for theatre, dance and other performances. Emphasis on developing management and organizational skills. Prerequisite: THEA 171.

THEA 473. Advanced Design and Rendering. 3 credits.
Advanced study in design for performance through theoretical production planning. Instruction in illustration and presentation methods necessary to communicate scenery, costume and lighting designs for performance. Emphasis is placed on the collaborative interaction between the production designers and the director or choreographer toward the creation of unified design.

THEA 481. Theory and Performance Studies. 3 credits. Offered fall.
Twentieth and 21st century theories and performance are studied and performance traditions outside of Europe are examined. Prerequisite: THEA 211.

THEA 483. Music Theatre Form and Analysis. 3 credits. Offered once every other year.
Practical study of the form and analysis of book, music, dance and design within the context of the major genres of music theatre. Consideration of how such analysis can inform the production and appreciation of music theatre today.

THEA 485. American Theatre. 3 credits.
Study and analysis of the American theatre experience as presented in the dramatic literature of the country. Emphasis on basic American themes. Consideration of plays, playwrights and performers significant to the development of American theatre.

THEA 488. Experimental Theatre. 3 credits. Offered spring.
Study of avant-garde theatre. Emphasis on motivating and guiding advanced students to a higher degree of aesthetic appreciation of the theatre. Consideration of the relationship of experimental theatre to the traditional theatre.

THEA 490. Special Studies in Theatre. 1-3 credits. Offered fall and spring.
An independent study for students to pursue individual research under the guidance of a faculty adviser. Prerequisites: Senior theatre majors in good standing and permission of the director.

THEA 495. Internship in Theatre. 3-6 credits. Offered fall and spring.
A faculty-arranged, prepared and monitored off-campus internship program designed to provide practical experience in theatre for students preparing for careers in those areas. Prerequisite: Permission of the director.

THEA 499. Honors in Theatre. 6 credits. Offered fall and spring.

Vocational Education

College of Education

VOED 383. Curriculum and Instructional Procedures in Vocational Education. 3 credits.
The study and development of techniques and methods to provide vocational education instruction to secondary school students. Competencies to be developed will include planning for instruction, applying different methodologies and assessing student performance and progress. The relationship of vocational education to other curricular areas will also be addressed.

VOED 490. Special Studies in Vocational Education. 1-3 credits.
In-depth examination of selected topics that are current and relevant in the field of vocational education. Offered with the approval of the School of Education director. Course may be repeated for credit when the content included changes.
Writing

The Writing Program

WRIT 100. Reading and Writing Workshop. 3 credits. Offered fall.
An introduction to writing process and structure in a workshop setting. This is an elective course for students who want to select an introductory-level college writing course before taking GWRIT 103.

GWRIT 103. Critical Reading and Writing. 3 credits. Offered fall and spring.
The course emphasizes the process of constructing a focused, logical, coherent, well-supported thesis or point of view. The students will employ research and formal documentation to produce writing stylistically appropriate to its audience, purpose and occasion. The course also places emphasis on editing for clarity and control of conventions. Instruction in writing and research includes critical analysis of primary and secondary sources through a series of reading and writing assignments. Students are prepared to use reading and writing in their personal, academic and civic lives. GWRIT 103, or its equivalent, fulfills the General Education Cluster One writing requirement and is a prerequisite for all WRIT courses numbered 200 or above.

WRIT 210. Written Argumentation. 3 credits. Offered fall and spring.
An advanced course in the development and analysis of argumentative strategies across a range of academic, professional and popular writing contexts. Emphasis will be given to classical and contemporary rhetorical theory as applied to the cultural, historical, disciplinary and professional bases for written communication. Prerequisite: GWRIT 102, GWRIT 103, or equivalent.

WRIT 220. Rhetorical Traditions. 3 credits. Offered fall and spring.
An introduction to historical rhetoric and its relationship to reading, writing, and speaking in modern contexts. Emphasis will be placed on defining rhetoric — its traditions, terms, and enduring realms of influence. Prerequisite: GWRIT 102, GWRIT 103, or equivalent.

WRIT/ENG 290. Intermediate Composition. 3 credits. Offered fall and spring.
This course stresses the argumentative and persuasive essay as well as grammar and usage. Prerequisite: GWRIT 102, GWRIT 103, or equivalent.

WRIT 310. Studies in Literacy. 3 credits. Offered fall and spring.
An advanced research and writing course designed to explore the important role that literacy plays in society. Students will examine the concept of literacy through historical, political, sociological, educational and cross-cultural lenses. Prerequisite: GWRIT 102, GWRIT 103 or equivalent.

WRIT 320. Writing in the Public Sphere. 3 credits. Offered fall and spring.
Students will conduct a rhetorical examination of written texts that influenced and brought about change in the public sphere. Prerequisite: GWRIT 102, GWRIT 103, or equivalent.

WRIT 322. Making a Difference: Service Learning Writing. 3 credits. Offered fall.
Using readings and community service, this course explores political and social activism through writing and rhetoric. Combines theory and writing with hands-on projects in the community. Prerequisite: GWRIT 102, GWRIT 103, or equivalent.

WRIT 330. Technology and Writing. 3 credits. Offered once a year.
An advanced research and writing course that explores the interrelationships of technology, literacy and society. Students will examine the influences of past, present and future technological innovations on our practices as readers and writers. Students may have the opportunity to compose in hypertext and multi-media environments. This course is writing-intensive. Prerequisites: GWRIT 102, GWRIT 103, or equivalent.

WRIT 340. Teaching Writing. 3 credits. Offered fall and spring.
The course introduces students to the major philosophies, theories, and pedagogies of teaching writing. Special attention is devoted to such practical matters as understanding and developing effective writing assignments, methods of responding to student texts-in-progress and evaluating writing. Prerequisite: GWRIT 102, GWRIT 103, or equivalent.

WRIT/ENG 396. Advanced Composition. 3 credits. Offered fall and spring.
Extensive exercises in expository writing, with emphasis on rhetorical types of composition, designed to develop sophistication of style in the student's writing. Prerequisite: GWRIT 102, GWRIT 103, or equivalent.

WRIT 399. Independent Study in Rhetoric and Writing. 3 credits. Offered fall and spring.
An opportunity for independent study in rhetoric and composition. In consultation with the supervising instructor, students will choose a customized course of study from a variety of topics in rhetoric and composition. Prerequisites: WRIT 210 and WRIT 220. Enrollment is contingent upon faculty and departmental approval.

WRIT 400. Special Topics Seminar in Rhetoric and Writing. 3 credits. Offered fall and spring.
A focused, in-depth study of specific areas or subjects in rhetoric and composition. Topics may pertain to issues relevant to the discipline, to the study of particular rhetorical theories and practices or to the study of significant figures in the field. Seminars may be repeated for credit when course content changes. Prerequisites: WRIT 210 and WRIT 220, or permission of instructor.

WRIT 410. Studies in Cultural Rhetorics. 3 credits. Offered fall and spring.
The course will investigate the ways in which definitions of our identity (including class, gender, race and ethnicity, sexuality, nature, and religion, among others) acquire cultural significance through written and symbolic expression. Students will examine a variety of different "texts" from a range of theoretical perspectives. Prerequisites: WRIT 210 and WRIT 220, or permission of instructor.

WRIT 430. Studies in Styles and Stylistics. 3 credits. Offered fall or spring.
An advanced writing intensive study of stylistic history, theory and practice. The course acquaints students with the origins and history of different writing styles, current stylistic theory and practice, and gives them the opportunity to write in different styles, including experimental ones. Students will analyze the relationship between rhetoric and writing style and analyze and produce stylistically diverse pieces of academic, public, and personal writing. Prerequisites: WRIT 210 and WRIT 220 or permission of instructor.

Women's Studies

Cross Disciplinary Studies

WMST 200. Introduction to Women's Studies. 3 credits.
Interdisciplinary introduction to theories and scholarship in women's studies. Course also examines implications of gender, society's definition of women, and the experiences and contributions of women. Provides a foundation for subsequent work in the women's studies minor.

WMST 400. Issues and Research in Women's Studies. 3 credits.
A capstone course for the women's studies minor. This seminar requires a knowledge of seminal works. A major portion of the course is devoted to individual research related to critical issues in women's studies. Prerequisites: WMST 200 and nine additional credits approved by the Women's Studies Advisory Committee.

WMST 490. Special Studies in Women's Studies. 3 credits.
Designed to give capable students in women's studies an opportunity to complete independent study under faculty supervision. Prerequisite: Admission by recommendation of the instructor and permission of the program coordinator.

WMST 492. Internship in Women's Studies. 1-3 credits.
Provides the student with practical experience in employing and refining women's studies concepts in a public or private agency, under faculty supervision. Prerequisite: Nine hours of women's studies courses, including WMST 200.

WMST 495. Special Topics in Women's Studies. 3 credits.
In-depth examination of selected topics of current importance to the field of women's studies. Offered only with approval of the program coordinator and dean of the College of Arts and Letters. May be repeated for credit when course content changes. Prerequisite: WMST 200 or consent of instructor.