

DEPARTMENTS AND PROGRAMS

NOTE: In the courses listed below, the semester listings indicate which semester the course is offered. If there is no semester listing, the course is offered on an occasional basis only.

AEROSPACE STUDIES

Faculty: Bowman, King, Howell, Romano

Air Force Reserve Officer Training Corps participation is available through a cross-enrollment agreement with St. Joseph's University. Participation in a 2, 3, or 4 year program leads to a commission as a Second Lieutenant in the Air Force. Scholarships are available for technical majors. Contact AFROTC Detachment 750 at (215) 871-8324 for further details.

AER 1011, 1021 Air Force Today

Introduction to the United States Air Force and Air Force Reserve Officer Training Corps.

Topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills. A Leadership Laboratory is mandatory for Air Force ROTC cadets, and complements this course by providing cadets with followership experiences. **(2 cr)**

AER 1031, 1041 The Air Force Way Survey course designed to facilitate the transition from Air Force ROTC cadet to Air Force ROTC candidate. Topics include: Air Force heritage, Air Force leaders, Quality Air Force, an introduction to ethics and values, introduction to leadership, group leadership problems, and continuing application of communication skills. A Leadership Laboratory is mandatory for Air Force ROTC cadets, and complements this course by providing cadets with their first

opportunity for applied leadership experiences discussed in class. **(2 cr)**

AER 2011, 2021 Air Force Leadership and Management A study of leadership, quality management fundamentals, and professional knowledge. Topics include: Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. A mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles of this course. **(6 cr)**

AER 2031, 2041 National Security Issues National security process, regional studies, advanced leadership ethics, and Air Force doctrine. Topics include: the military as profession, officership, military justice, civilian

control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure continued emphasis is given to refining communication skills. An additional Leadership Laboratory complements this course by providing advanced leadership experiences, giving students the opportunity to apply the leadership and management principles of this course (6 cr)

AFRICANA STUDIES PROGRAM

Director and Associate Professor: Keita
Office: 448 St. Augustine Center, tel. 519-4661

CONCENTRATION: The Africana Studies program combines an introductory core with a number of electives. Concentrators are required to take two courses (six credits) from the introductory core. Each of these courses must be from a different discipline. In addition the student is required to take fifteen credit hours of approved electives. The list of approved electives available in any given semester is available from the Africana Studies Office, St. Augustine 451.

MINOR: For the Africana Studies minor, a student is required to take two courses (six credit hours) from the introductory core. Each of these courses must be from a different discipline. In addition the student is required to take nine credit hours of approved electives.

AFR 5000 Independent Study Independent work on a topic agreed upon by the student and a faculty member. (3 cr) *Prereq:* permission of the director.

Introductory Core:

CA 2700 Black Rhetoric
ENG 2505 African American Literature: Poetry
ENG 2510 African American Literature: Novel
ENG 2515 African American Literature: Drama
HIS 2291 African American History during Slavery
HIS 2292 African American History since Slavery

HIS 4115 The Roots of African Culture
HIS 4120 The Emergence of Modern Africa

Sample Electives:

ECO 1103 The Economics of Social Issues
GEO 3700 Africa
HIS 4130 Southern Africa in Historical Perspective
HIS 4470 Third World Revolution
HIS 4490 Topics: Racism and Justice in the Americas
HON 4050 Africana Intellectualism
HON 5700 Urban Realities/Suburban Perspectives
HON 5702 Philosophy, Issues of Race
P J 5000 Race/Class/Gender

PSC 3500 Civil Rights and Civil Liberties
PSC 4700 Africa
PSC 5500 Africa in World Politics
THL 5700 Black Religious Experience

SOC 3600 Race Relations and Ethnic Relations
The number of electives, and therefore
students' choices, will vary from year to year.

ARAB AND ISLAMIC STUDIES

Director and Associate Professor: Omran
Office: 104 St. Augustine Center, tel. 519-7325

CONCENTRATION: AIS 4100; ARB 1111, 1112, 1121, 1122; HIS 4031, 4041; PSC 4900 or 5900; THL 5150; and one elective from the courses listed below.

MINOR: ARB 1111, 1112; HIS 4041; PSC 4900 or 5900; and two electives. *NOTE:* Students are advised to enter the program no later than the first semester of their junior year in order to complete the requirements. Approval of the program director must be obtained to enter the program. The Center for Arab and Islamic Studies is located in 104 St. Augustine Center (519-7712 or 7325).

AIS 4100 Seminar: Topics in Arab and Islamic Studies Major political, cultural, social and economic issues of contemporary Arab and Islamic studies. The focus changes, according to the professor. Required for the Certificate and open to other students. (3 cr) *Sem 2.*

ARB 1111, 1112 Intensive Basic Modern Standard Arabic I and II

ARB 1121, 1122 Intensive Intermediate Modern Standard Arabic I and II

ARB 1131, 1132 Intensive Advanced Standard Arabic I and II

ARB 1141 Introduction to Colloquial Egyptian Arabic

ARB 2142 Arab Culture and Civilization
HIS 4031 Islamic History and Civilization

HIS 4041 History of the Modern Middle East

PSC 4900 Comparative Politics of the Arab States

PSC 5900 Middle Eastern International Relations

THL 5150 Introduction to Islam

The following cross-listed courses are available as electives:

ECO 3127 Development Economics

GEO 3800 Geography of the Islamic World

PHI 3160 History of Islamic Philosophy

PSC 5700 The Struggle for Power and Oil in the Inner Crescent

PSC 6900 Political Science Seminar

With permission, the following graduate courses are open to qualified undergraduate students:

HIS 8601 Middle East in the World Economy, 18th and 19th Centuries

College of Liberal Arts and Sciences

PSC 8825 Middle East Politics

PSC 9300 American Foreign Policy in the
Middle East

ARMY ROTC

Faculty: Lieutenant Colonel Latsha, Major Keim, Captain Karbel, Captain Limmer, Master Sergeant Pearson, Staff Sergeant Ortega

ARMY ROTC PROGRAM: By agreement with Widener University's Department of Military Science, Villanova offers a program of study leading to a commission as a Second Lieutenant in the United States Army or Army Reserve. Details are found in the general University section of this *Catalog*.

MS 101 Introduction to ROTC Team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations, basic marksmanship, fundamental concepts of leadership in a profession. One hour per week, plus a required leadership lab, plus participation in three one-hour sessions for physical fitness. Participation in a weekend exercise is also required. **(1 cr)**

MS 102 Introduction to Leadership Principles of effective leading. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader. One hour per week, a required leadership lab, plus participation in three one-hour sessions of physical fitness. Participation in a weekend exercise is also required. **(1 cr)**

MS 201 Self/Team Development Ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Skills in oral presentations, writing concisely, planning of

events, coordination of group efforts, advanced first aid, land navigation and basic military tactics. Fundamentals of ROTC's Leadership Development Program. Two hours per week, and a required leadership lab, plus required participation in a three one-hour sessions for physical fitness. Participation in a weekend exercise is also required. **(2 cr)**

MS 202 Individual/Team Military Tactics Introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, making safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper division ROTC students. Learn techniques for training others as an aspect of continued leadership development. Two hours per week plus a required leadership lab. Plus required participation in three one-hour sessions for physical fitness. Participation in weekend exercise is also required. **(2 cr)**

MS 301 Leading Small Organizations I Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small unit tactics and opportunities to plan and conduct training

for lower division students both to develop such skills and as vehicles for practicing leading. Three hours per week and a required leadership lab, plus required participation in three one-hour sessions for physical fitness. Participation in one weekend exercise is also required, and one or two more weekend exercises may be offered for participation. **(3 cr)**

MS 302 Leading Small Organizations II

Continues methodology of MS 301. Analyze tasks; prepare written or oral guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress. Examine and apply lessons from leadership case studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance. Three hours and a required leadership lab, plus required participation in three one-hour sessions for physical fitness. Participation I one weekend exercise is required; three other one-day exercises are also offered. **(3 cr)**

MS 401 Leadership Challenges and Goal-Setting

Plan, conduct and evaluate activities of the ROTC cadet organization. Articulate goals, put plans into action to attain them. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills to lead people and manage resources. Learn/apply various Army policies and programs in this effort. Three hours and a required leadership lab, plus required participation in three one-hour sessions for

physical fitness. Participation in one weekend exercise is also required, and one or two more weekend exercises may be offered for optional participation. **(3 cr)**

MS 402 Transition to Lieutenant Continues the methodology from MS 401. Identify and resolve ethical dilemmas. Refine counseling and motivating as an officer in the Army. Prepare for a future as a successful Army lieutenant. Three hours and a required leadership lab, plus required participation in three one-hour sessions for physical fitness. Participation in one weekend exercise is also required, and one or two more weekend exercises may be offered for optional participation. **(3 cr)**

Leadership Laboratory Open only to (and required of) students in the associated Military Science course. Series, with different roles for students at different levels in the program. For freshmen and sophomores, learn and practice basic skills. Gain insight into Advanced Course in order to make an informed decision whether to apply for it. Build self-confidence and team-building leadership skills that can be applied throughout life. For juniors and seniors, involves leadership responsibilities for the planning, coordination, execution and evaluation of various training and activities with Basic Course students and for the ROTC program as a whole. Students develop, practice and refine leadership skills by serving and being evaluated in a variety of responsible positions.

ART HISTORY

Chair and Associate Professor: Lindenmeyr
Office: 403 St. Augustine Center, tel. 519-4660

The Art History major and minor are administered by the Chair of the History Department.

MAJOR: Art History majors must complete AAH 1101 and AAH 1102 (beginnings to Renaissance and Renaissance to Contemporary World) plus seven upper-level art history courses. These seven upper-level courses must include one course in each of the four general areas of art history (Ancient, Medieval, Renaissance, Modern); an art history elective; a Senior Seminar (4000-level course); and a Senior Thesis. Three credits in Studio Art are also required. Majors in Art History have the opportunity to do internships at nearby museums, auction houses, or historical sites; or to participate in the Villanova-Rosemont Summer Program in Siena, Italy, which places a strong emphasis on art history.

MINOR: Students seeking a minor in Art History are required to earn at least 15 credit hours in art history, six of which must be the two survey courses (AAH 1101 and 1102), and three credits in Studio Art. Three credits in Studio Art are also required.

AAH 1100 Introduction to Art The elements of art: form, color, line, design, materials, and techniques. For students (non majors only) who would like to improve their ability to understand painting, sculpture, and architecture. **(3 cr)**

AAH 1101 Beginnings to Renaissance Architecture, sculpture, and painting from prehistoric times to the High Gothic period. **(3 cr)**

AAH 1102 Renaissance to Contemporary World The visual arts from the Early Renaissance to contemporary abstract expressionism. **(3 cr)** *Sem 2*

AAH 2000 Ancient Art The artistic contributions of the ancient societies of Egypt,

the Aegean, Greece and Rome, placed within appropriate cultural contexts. **(3 cr)**

AAH 2001 Early Christian and Medieval Art The development of Western art from the death of Jesus to 1300 A.D. with emphasis on the Catholic Church as the main patron of painting, sculpture, and architecture during the middle ages. **(3 cr)**

AAH 2002 Renaissance Art An examination of classical (Greco-Roman) traditions that reappear in western art between 1300 and 1600 A.D., and its harmony with Christian ideas. From Giotto to the end of Mannerism. **(3 cr)**

AAH 2003 Age of Rembrandt & Bernini Major works of European painting, sculpture, and architecture from the seventeenth through mid-eighteenth centuries. Special emphasis on

how historical events affected the production of artistic monuments. (3 cr)

AAH 2004 Modern Art An examination of 20th Century visual arts that emphasize their historical roots and present social significance. (3 cr)

AAH 2005 Religion and Art Factors underlying religious art developed from painting, sculpture and architecture as well as influence of art in the History of Religion. (3 cr)

AAH 2006 American Art The history of painting, sculpture, and architecture in America from the colonial period to modern times. (3 cr)

AAH 2007 History of Western Architecture Development of architectural styles from the early medieval period to contemporary trends, with emphasis on the modern period. (3 cr)

AAH 2008 The Spirit of the Renaissance The relationship of painting, sculpture, architecture, and graphic arts from the rise of the Sieneese and Florentine School to the end of the Venetian school. (3 cr)

AAH 2009 Sounds of the Slavic Spirit An exploration of the music of the cultural heritage of the Russian people from chants of Muscovy to the present. (3 cr)

AAH 2010 Introduction to Calligraphy: The Study of Writing A practical and historical approach to the study of writing. The development of the written letter and the ability to use the newly acquired hand, with the proper materials and techniques. (3 cr)
Sem 1&2

AAH 3001 Women in Art Themes and images of women in the visual arts as an expression of the needs, desires and attitudes of society; and a study of women artists from ancient times to the present, with regard to how being female may, or may not, have affected their work. (3 cr) *Sem 1.*

AAH 3002 Art of Philadelphia Philadelphia's unique contribution to American painting, sculpture, and architecture, from the early Swedish and Welsh settlers of the Delaware Valley, to Andrew Wyeth and Robert Venturi. Includes field trips. (3 cr)

AAH 3003 Romanticism to Post-Impressionism Nineteenth century painting and sculpture in Europe and America, showcasing Cezanne, Courbet, Delacroix, Goya, Eakins, Homer, Manet, Monet, Rodin and West. (3 cr)

AAH 3004 19th and 20th Century Architecture The architecture of the 19th and 20th centuries as an evolutionary development with emphasis on major movements and building developments. (3 cr)

AAH 3005 Chinese Art The growth of visual art in China from Meolithic times to 1912, highlighting art as an reflection of change in Chinese society and philosophy. (3 cr)

AAH 3007 Art of Ireland The visual arts in Ireland concentrating on the Golden Age from the 5th to the 9th Century: architecture of the early monastic settlements, manuscript illumination and its influence, and the cultural impact of the Irish forms of monasticism. (3 cr)

AAH 3008 An Intro to Art and Architecture of Indian Subcontinent The development of

art and architecture on the Indian subcontinent. (3 cr)

AAH 3009 Topics in Art History Selected themes or periods in the history of art examined in depth. (3 cr)

AAH 3010 Art Historical Methodology A survey of the various types of art history which have been practiced over the centuries, including connoisseurship, iconography, the social history of art, Feminist art history, Postmodern art history, semiotics, and Deconstructionist art history. (3 cr)

AAH 4000 Senior Thesis Independent research projects under the guidance of a departmental faculty member. Passing grade depends on student thesis acceptable to two faculty members. (3 cr) *Prereq: Art History Majors Only.*

AAH 4001 American Architecture Seminar on Architecture and City Planning in the United States from colonial times to the present. (3 cr) *Prereq: One Art History course.*

AAH 4002 Japonisme: Oriental Prints and the Impressionists Seminar on the effect of

Japanese wood block color prints on Early Modern Masters. (3 cr) *Prereq: Modern Art.*

AAH 4003 Special Topics of Ancient Through Medieval Seminar on selected topics in Ancient Medieval Art as announced. Topics will vary, depending on the instructor. (3 cr) *Permission of instructor.*

AAH 4004 Special Topics of Renaissance Through Baroque Seminar on architecture, painting, sculpture and art theories of the Renaissance or baroque as announced. Topics will vary depending on the instructor. (3 cr) *Prereq: Permission of instructor.*

AAH 4005 Picasso and Friends Seminar on the 20th century's most famous artist, with discussion of friends such as Braque, Apollinaire, Gertrude Stein, and Erik Satie. (3 cr) *Prereq: Modern Art.*

AAH 4007 Special Topics of Neoclassicism Through Modern Seminar on advanced topics in Modern Painting, Sculpture, and Architecture in Europe and America, from 1750 to the present. (3 cr) *Prereq: Permission of instructor.*

ASTRONOMY AND ASTROPHYSICS

Chair and Professor: McCook

Professors: Guinan, Sion

Associate Professor: Maloney

Assistant Professor: Ambruster

Office: 457 Mendel, tel. 519-4820

MAJOR: AST 1151, 2120, 2121, 2122, 2133, 2134, 3141, 3142, 3152, 4121, 4122; MET 2001; CSC 4630; MAT 1500, 1505, 2500, 2705; PHY 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2601, 2603, 4200, 4202, and 3 Physics courses (9-12 credits) numbered above 3000. Recommended are PHY 4000, 4001, 4002, 4003.

MINOR: 22 credits, including AST 1151, 2120, 2121, 2122, 2133, 2134, and two (2) of the following: AST 3141, 3142, 3152, 4121, 4122; MET 2001. *NOTE: prerequisites in Math and Physics must be met to gain admission to these courses.*

ASTRONOMY

AST 1050 Planet Earth I Earth as a planetary member of the Solar System. Characteristics, history of formation, dynamics, and evolution of the solar system. Emphasis on the fundamental scientific principles at work throughout the universe. **(3 cr)** *Sem 1. Coreq: AST 1051.*

AST 1051 Planet Earth Lab I Laboratory to accompany Planet Earth I. Astronomical observations and principles of experimentation, both with real physical experiments and computer simulations. **(1 cr)** *Sem 1. Coreq: AST 1050.*

AST 1052 Planet Earth II A continuation of AST 1050 (Planet Earth I). **(3 cr)** *Sem 2. Prereq: AST 1050, 1051. Coreq: AST 1053.*

AST 1053 Planet Earth Lab II A continuation of AST 1051 (Planet Earth Lab I). **(1 cr)** *Sem 2. Prereq: AST 1050, 1051. Coreq: AST 1052.*

AST 1072 The Birth and Death of Stars A study of the life cycles of the stars from their birth in dark, dense interstellar dust clouds to their deaths in nature's most violent cataclysms with a focus on stars and humanity, the formation of the chemical elements, the effects of nearby supernovae, the future of the Sun and the ultimate fate of Earth, and the question of planetary systems around other stars. **(3 cr)** *Sem 1. Coreq: AST 1073 for arts students completing their core science requirement.*

AST 1073 Stellar Lab Laboratory focuses on stellar and galactic problems. **(1 cr)** *Sem 2. Coreq: AST 1072, 2120 or 2122.*

AST 1074 Planetary Skies and Landscapes The surfaces and atmospheres of other worlds and how they compare to Earth with a focus on the physical processes which mold their landscapes and both generate and modify their gaseous atmospheres. The geology and meteorology of planets and their moons; the

role of destructive collisions versus accretion and re-compaction. The effects of collisions with asteroids and comets, their role in mass extinctions, and in the possible formation of atmospheres and oceans; the search for planets and life in our solar system and beyond. **(3 cr)**
Sem 2. Prereq: AST 1072, 1073 for Arts students completing their core science requirement. Coreq: AST 1075 for arts students completing their core science requirement.

AST 1075 Planets Lab Laboratory focuses on planetary and solar system problems. **(1 cr)** *Sem 2. Coreq: AST 1074.*

AST 1151 Development of Astronomical Ideas The evolution (and revolution) of human views and understanding of the sky from pretechnology cultures (e.g., Stonehenge, the American Southwest), through the sophisticated cultures of the ancient Near East, the ancient Greeks, the Renaissance (Copernicus, Galileo, Newton) and into the Twentieth Century. **(3 cr)** *Sem 2. Open to Liberal Arts and Science students as a free elective. Minimal mathematics.*

AST 2120 The Sun and the Stars A technical study of the Sun and other stars; their internal constitutions and atmospheres, life cycles and evolutionary processes, memberships in groups, the radiations they produce, and the manner in which astronomers quantify their characteristics. **(3 cr)** *Sem 1. Prereq: MAT 1500 or above; AST 2121 or 2122. Open to science, engineering and math majors. Non-stromony majors may elect AST 1073 as a lab.*

AST 2121 Solar System Astronomy The science of the solar system: early ideas of the nature of the solar system; the dynamics and

compositions of the planets; atmospheric evolution and maintenance. The manner with which comets and meteorites reveal the structures of the primitive solar system. **(3 cr)**
Sem 2. Prereq: MAT 1500 or above. For science, engineering and math majors. Non-Astronomy majors may elect AST 1075 as a lab.

AST 2122 Galaxies and Cosmology The universe beyond the solar system: galactic structure, galactic evolution, and the current cosmological models of the large scale structure of the universe. **(3 cr)** *Sem 1. Prereq. or Coreq: MAT 1500 or above. For science, engineering and math majors. Non-Astronomy majors may elect AST 1075 as a lab.*

AST 2133 Observational Astronomy Lab I Astronomical instruments, methods of observing, reduction of observations, and discussion of astronomical data. Observations include CCD imaging, spectroscopy, and photoelectric photometry using the observatory reflector and Schmidt telescopes. Two hours per week in the laboratory in addition to the observing time necessary to complete the assigned projects. **(2 cr)** *Sem 1. Coreq: AST 2120.*

AST 2134 Observational Astronomy Lab II Continuation of AST 2133. **(2 cr)** *Sem 2. Prereq: AST 2133. Coreq: AST 2121.*

AST 3121 Directed Studies I Studies in selected areas under the direction of a staff member. **(2 cr)** *Sem 1. Prereq: consent of chair.*

AST 3122 Directed Studies II Studies in selected areas under the direction of a staff member. **(2 cr)** *Sem 2. Prereq: consent of chair.*

AST 3131 Seminar in Astronomy and Astrophysics Seminar on special topics in Astronomy and Astrophysics. (1 cr) *Sem 1.*

AST 3141 Galactic Astronomy The nature, distribution, and motions of the constituents of the Galaxy -- the major star system in which our Sun is located -- the stars, the gas and dust, star clusters, etc.; stellar distance determination, distribution of stars and gas, stellar kinematics, galactic dynamics, galactic radio emission, cosmic rays, and evolution of galaxies. (3 cr) *Sem 1. Prereq: one year of mathematics or physics plus AST 2120 or 2122.*

AST 3142 Introduction to Stellar Astrophysics Theories of stellar atmospheres, line-broadening and formation, radiative transfer, theoretical spectra, and the theory of stellar interiors are covered. Fundamental stellar timescales, thermonuclear reactions, evolutionary models, stellar pulsations, novae and supernovae. (3 cr) *Sem 2. Prereq: AST 2120 or 2122, PHY 2410.*

AST 3152 Fundamentals of Astrodynamics Problems dealing with orbit determination, artificial satellites, space travel and related subjects. (3 cr) *Sem 2. Prereq: one year of mathematics or physics and AST 2121.*

AST 4121 Undergraduate Research I Student participation in departmental or independent research under faculty supervision; frequent conferences on literature search, research techniques, experimental

procedures and results. (3 cr) *Sem 1. Prereq: consent of chair.*

AST 4122 Undergraduate Research II Continuation of AST 4121. (3 cr) *Sem 2. Prereq: consent of chair.*

METEOROLOGY

MET 1221 Fundamentals of Meteorology The science of meteorology in its present state of development with attention to the elements of weather and climate and related atmospheric processes; atmospheric circulation, wind, cloud formation, cyclones and anti-cyclones, weather analysis and interpretation, and the meteorological aspects of air pollution. (3 cr) *Sem 1. Prereq: one year of college mathematics.*

MET 1222 Meteorology and Climatology Fundamentals of climatology classification of climatic types and their distribution; the relation between the elements of weather and climate to biotic environment and human activities with special emphasis on air pollution. (3 cr) *Sem 2. Prereq: one year of college mathematics.*

MET 2001 Meteorology of the Planets The structure and chemistry of planetary atmospheres, scattering and absorption processes, radiative transfer and planetary spectra, convective and conductive processes, fundamental timescales for planetary atmospheres, dynamical meteorology, theories of climate evolution, accretion, fragmentation and origin of the solar system. (3 cr) *Sem 1. MAT 1505, PHY 2412.*

BIOLOGY

Chair and Associate Professor: Baker

Professors: Bauer, Desmond, Gardner, Maksymowych,

Orkwiszewski, Stephens, Wieder

Associate Professors: Dollahon, Knepper,

Assistant Professors: Balsamo, Curry, DiBenedetto, Friede,

Olson, Russell, Russo, Shurer, Webb

Instructor: Chubb

Office: 115 Mendel, tel. 519-4830

MAJOR: Thirty-six credits in Biology, including BIO 2105, 2106, 3351, and 5100. Cognate requirements include: CHM 1151/1103, 1152/1104, 2211/2201, 2212/2202; MAT 1310/1315; PHY 1100/1101 and 1102/1103. In addition, Biology majors must select a minimum of five laboratory science electives from the Biology departmental offerings (five courses including laboratories) numbered 3000 and higher. At least one course with laboratory must be chosen from each of the following areas: Population Biology, Organismal Biology, Cellular/Molecular Biology. *NOTE: Courses numbered below 2000 will not apply toward a major in biology.*

MINOR: Twenty-three credits Biology, including BIO 2105 and 2106. Additional elective courses from Biology departmental offerings numbered 3000 and higher. These Biology electives must include at least 3 lab science courses. Minors must complete at least 12 of their Biology credits at Villanova and achieve a minimum QPA of 2.0 in those courses.

NOTE: Courses numbered 7000 to 7999 are open to undergraduates with advanced standing and a QPA of 3.0 or higher. See the Biology listings in the Graduate School of Liberal Arts and Sciences Catalog.

BIO 1101 Biology General principles, cells and energy, hereditary mechanisms, survey of organisms, evolution and ecological principles. For non-biologists who do not plan a more extensive study of biology. *Cannot be used as the prerequisite for advanced courses in biology. May not be taken for credit by students who have completed BIO 2105 or 2106. (3 cr) Sem. 1&2.*

BIO 1181 Principles of Cell Biology and Genetics The structure of prokaryotic and eukaryotic cells; microbial classification; control of microbial growth, principles of

disease; pathogenic mechanisms; host defenses. Eukaryotic and prokaryotic gene organization and function; analysis of patterns of inheritance; recombinant DNA technology; linkage and genetic maps, genetic variation in human populations; inheritance, diagnosis and treatment of metabolic disease; cytogenetics; immunogenetics; cancer; developmental genetics. **(3 cr) Prereq: 1134. Coreq: BIO 1205.**

BIO 1205 Human Anatomy and Physiology I Basic concepts and laboratory studies of anatomy and physiology with presentation of

overall morphology and function of the integumentary, skeletal, muscular, nervous, and endocrine systems. **(4 cr) Laboratory. Sem 1.** *Limited to Nursing students or permission of the department chair.*

BIO 1206 Human Anatomy and Physiology

II Continuation of Biology 1205. The structure and function of the blood, vascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. **(4 cr) Sem 2. Prereq: Biology 1205. Laboratory. Limited to Nursing students or those with permission of the department chair.**

BIO 1401 Microbiology Fundamentals of structure, function, and characteristics of microorganisms and their interaction with host organisms; basic microbiological techniques carried out or demonstrated in laboratory. **(3 cr) Sem 2. Prereq: BIO 1505.**

BIO 1402 Microbiology Laboratory Basic microbiological techniques carried out or demonstrated in laboratory. **(1 cr) Sem 2. Coreq: BIO 1401**

BIO 1505 Biology for Today Biology of cells, comparative animal physiology, genetics, reproduction and development, evolutionary biology and ecology. Experimental approaches used by biologists in problem solving. Writing assignments on the interpretation of science presented in the news media. **(4 cr) Laboratory. Sem 1. May not be taken for credit by students who have completed BIO 2105 or 2106.**

BIO 1555 Environmental Science and Human Concerns Fundamentals of ecology; energy use and alternatives for the future; mineral resources; population, food, nutrition, hunger; air and water pollution; pesticides;

waste disposal; global warming; conservation. **(4 cr) Sem 2. Prereq: BIO 1505.**

BIO 1605 Heredity and Human Affairs

Genetic variation in humans and human populations including metabolic diseases, chromosomal aberrations and cancer. Genetic aspects of biotechnology, biodiversity and environmental hazards. **(4 cr) Laboratory. Sem 2 Prereq: BIO 1505.**

BIO 1625 How Microbes Rule the World

How microbes benefit humans through the recycling of elements and their uses in food and fuel production, water purification and detoxification of wastes. Microbes as the causative agents of disease and as agents to produce lifesaving cures through biotechnology. **(4 cr) Sem 2 Laboratory. Prereq: BIO 1505**

BIO 1655 Human Physiology - How Your Body Works

The principles and mechanisms underlying how the human body functions, with emphasis on physical fitness. **(4 cr) Laboratory. Sem 2. Prereq: BIO 1505.**

BIO 1705 Life in the Sea

Fundamentals of chemical, physical, and geological oceanography and their relationship to the evolution of marine organisms. The biology and ecology of marine algae, invertebrates, fishes and marine mammals. The ecological dynamics of marine habitats including salt marshes, coral reefs and the deep sea. **(4 cr) Laboratory. Sem 2. Prereq: BIO 1505.**

BIO 1785 Special Themes in Biology

A selected theme on some aspect of biology. Topics will be announced. Specific information will be available in the department office. **(4 cr) Laboratory. Sem 2. Prereq: BIO 1505.**

BIO 1903 Internship Elective (3 cr)

BIO 1906 Internship Elective (6 cr)

BIO 1909 Internship Elective (9 cr)

BIO 2105 General Biology I An introduction to biological organization stressing the molecular and cellular aspects of living organisms. The chemistry of life, the cell, the gene, and mechanisms of evolution. **(4 cr)** *Laboratory. Sem 1.*

BIO 2106 General Biology II Continuation of Biology 2105. The origin of life and diversity of organisms seen in five biological kingdoms. Topics include nutrient acquisition, digestion, circulation, response to stimuli, movement, reproduction, behavior, and ecology. **(4 cr)** *Laboratory. Sem 2. Prereq: BIO 2105.*

BIO 2993 Internship (3 cr)

BIO 2996 Internship (6 cr)

BIO 3011 Animal Behavior Causation, development, ecology and evolution of behavioral patterns; behavioral genetics; neuroethology; communication; foraging territoriality; mating systems; parental behavior; social organization. Emphasis on ultimate explanations. **(3 cr)** *Sem 2, even years. Prereq: BIO 2105, 2106*

BIO 3012 Animal Behavior Laboratory Methods for observing behavior and for collection, statistical analysis, and interpretation of behavioral data. Exercises in lab and field, discussion, and small-group independent research projects. **(1 cr)** *Sem 2, even years. Prereq: BIO 2105, 2106. Coreq: BIO 3011.*

BIO 3055 Animal Physiology The basic principles underlying how animals function and the mechanisms used to solve physiological problems. **(4 cr)** *Laboratory. Sem 1&2. Prereq: BIO 2105, 2106.*

BIO 3105 Biometry Statistical treatment and interpretation of data obtained from biological experiments, emphasizing analytical procedures in relation to growth and development. **(4 cr)** *Laboratory. Sem 1. Prereq: BIO 2105, 2106.*

BIO 3155 Comparative Vertebrate Anatomy Evolution of homologous structures of vertebrates including functional considerations. Laboratory includes systematic and topical dissection of representative chordates and demonstrations of living organisms=functions. **(4 cr)** *Sem 1. Prereq: BIO 2105, 2106.*

BIO 3225 Introduction to Electron Microscopy Introduction to specimen production for and use of scanning and transmission electron microscopes. **(4 cr)** *Sem 1, even years. Prereq: BIO 2105, 2106.*

BIO 3255 Introductory Ecology Factors affecting the distribution, abundance, and interactions of organisms. Climate patterns, biomes, physiological adaptation, population dynamics, behavioral ecology, species interactions, community structure, ecosystem function, and environmental problems. Hypothesis testing using statistical analysis of data. Required overnight trip. **(4 cr)** *Sem 1. Prereq: BIO 2105, 2106.*

BIO 3351 Genetics Transmission genetics, cytogenetics, gene expression and regulation and population genetics. **(3 cr)** *Sem 1&2.*

Prereq: BIO 2105, 2106; CHM 1103, 1151, 1104, 1152.

BIO 3405 Higher Vertebrates Evolutionary history, diversification and basic biology of birds and mammals: ecological and physiological adaptations, reproductive biology, social behavior, population ecology, life history strategies, taxonomy and identification. Field trips. **(4 cr)** *Laboratory. Sem 1, even years. Prereq: BIO 2105, 2106.*

BIO 3455 Histology The microscopic study and demonstration of cells, tissues and organ systems of the mammalian body. **(4 cr)** *Sem 1. Prereq: BIO 2105, 2106.*

BIO 3505 Invertebrate Zoology The anatomy, taxonomy, evolution, physiology, development, ecology and behavior of invertebrates. The comparative approach in both field and laboratory. **(4 cr)** *Sem 1, even years. Prereq: BIO 2105, 2106.*

BIO 3555 Lower Vertebrates The biology of fishes, amphibians and reptiles: systematics and morphological diversity, physiological, reproductive and behavioral adaptations, ecology, and evolution. Required field trips to representative local habitats. **(4 cr)** *Laboratory. Sem 2, odd years. Prereq: BIO 2105, 2106.*

BIO 3595 General Microbiology Bacteria, viruses, eukaryotic microbes, immune function. Microbes in air, water, soil: interactions with plants and animals. Agricultural, commercial, industrial, and medical applications. Laboratory studies in growth and analysis of selected organisms/viruses. **(3 cr)** *Prereq: BIO 2105, 2106, CHM 1151, 1152. Coreq: 2211, 2201.*

BIO 3605 Microtechnique The principles and basic methods of preparing specimens for microscopic study; major techniques and recent developments. **(4 cr)** *Sem 2, odd years. Prereq: BIO 2105, 2106; CHM 1103, 1151, 1104, 1152; permission of department chair.*

BIO 3651 Non-Vascular Plants Physiology, comparative evolutionary trends, ecology, and morphology of Monera, photosynthetic Protists, Bryophytes, Fungi, and Lichens. **(2 cr)** *Sem 2. Prereq: BIO 2105, 2106.*

BIO 3652 Non-Vascular Plants Laboratory Physiological experimentation and microscopic study of Monera, photosynthetic Protists, Bryophytes, Fungi, and Lichens. **(2 cr)** *Sem 2. Prereq: BIO 2105, 2106 Coreq: BIO 3651.*

BIO 3755 Parasitology Biology of host-parasite relationships with emphasis on parasites of man and domestic animals. Methods of transmission, host response to parasites, prevention and treatment. **(4 cr)** *Laboratory. Sem 2, odd years. Prereq: BIO 2105, 2106.*

BIO 3801 Plant Physiology Physiology and metabolism of plants: photosynthesis, respiration, hormones, photoperiodism, radioisotopes in biological research, DNA biosynthesis and metabolism during plant development. **(2 cr)** *Sem 2. Prereq: BIO 2105, 2106.*

BIO 3802 Plant Physiology Laboratory Photosynthesis, respiration, hormones, extraction and characterization of DNA, DNA biosynthesis, autoradiographic techniques and liquid scintillation spectrometry. **(2 cr)** *Sem 2. Prereq: BIO 2105, 2106. Coreq: BIO 3801.*

BIO 3905 Structure and Development of Vascular Plants Organization of the vascular plant body, plant reproduction and development, systematic and environmental considerations, tissue culture and hormonal regulation. **(4 cr)** *Sem 1. Prereq: BIO 2105, 2106.*

BIO 4105 Bacterial Pathogens and Pathogenesis The nature and activities of bacterial pathogens. Mechanisms of pathogenesis and invasiveness, and the physical evidence of infection and defense mechanisms of the host. Laboratory focus on isolation and identification methods and cultivation techniques. **(4 cr)** *Sem 2. Prereq: BIO 3595.*

BIO 4205 Biology of the Eukaryotic Cell The mechanisms of cell signaling, regulation of growth and division, adhesion, movement, macromolecular biosynthesis, processing and trafficking. Important experimental techniques and strategies for study of the eukaryotic cell. **(4 cr)** *Sem 1, even years. Prereq: BIO 2105, 2106, 3351; CHM 2211, 2212.*

BIO 4251 Comparative Endocrinology Mechanisms of endocrine control of growth, metabolism, reproduction, adaptation, and behavior. The endocrine glands. **(3 cr)** *Sem 2. Prereq: BIO 2105, 2106, 3055.*

BIO 4252 Comparative Endocrinology Laboratory Laboratory experience in endocrinology, demonstrative and analytical. **(1 cr)** *Sem 2. Prereq: BIO 2105, 2106. Coreq: BIO 4251.*

BIO 4285 Developmental Biology Mechanisms and patterns of vertebrate embryo development from primordial germ cells to

formation of organ systems. Lectures on and laboratory work with living embryos; microscopic study of prepared embryos; and individual research projects. *Prereq: BIO 2105, 2106, 3351. (4 cr.) Sem 2.*

BIO 4305 Evolution Process and pattern from micro- and macroevolutionary perspectives. Evolutionary genetics, natural selection, speciation, macroevolutionary trends, and extinctions. Field, laboratory, and computer approaches. **(4 cr)** *Sem 2, odd years. Prereq: BIO 2105, 2106, 3351.*

BIO 4355 Experimental Genetics Laboratory exploration and discussion of topics in bacterial, developmental, molecular, population and transmission genetics. Readings in the primary literature are stressed. **(4 cr)** *Prereq: BIO 3351; MAT 1310-1315.*

BIO 4451 Field Ecology and Evolution Advanced study of organisms and ecosystems of a particular region (location varies; has included Florida, Puerto Rico, Nova Scotia). General principles explored using examples from focal area: historical and ecological biogeography, habitat patterns, biotic and abiotic interaction, evolutionary processes, and conservation problems. **(2 cr)** *Sem 2, even years. Prereq: BIO 2105, 2106, and either 3012 or 3255 or 4305 or permission of instructor.*

BIO 4452 Field Ecology and Evolution Laboratory Field study of organisms and ecosystems of a focal region. Trip lasting 15-20 days usually in late May to geographical area covered in BIO 4451, with focus on local habitats and conservations projects, field identification, group exercises, and independent research projects. Costs to students and timing vary with site chosen. **(2 cr)** *Sem, 2, even*

years. Prereq: BIO 2105, 2106. Coreq: BIO 4451.

BIO 4485 Marine Biology Biology and ecology of marine organisms (algae, invertebrates, fishes, sea birds, marine mammals) the comparative ecology of marine communities and ecosystems (estuaries, rocky intertidal, kelp forests, coral reefs, the deep sea and hydrothermal vents) and basic principles of chemical, physical and geological oceanography. Required field trips. (4 cr) Laboratory. Sem 2, even years. Prereq: BIO 2105, 2106, and 3505 or 3255 or 3555 or permission of instructor.

BIO 4505 Molecular Biology DNA structure, replication, recombination, mutagenesis and repair, transcription, RNA processing, translation and the genetic code, control of gene expression, eukaryotic genome structure. Molecular aspects of immunity, cancer, and AIDS. Laboratory exercises in gene cloning and analysis. (4 cr) Sem 2. Prereq: BIO 2105, 2106, 3351; CHM 2211, 2201, 2212, 2202.

BIO 4605 Neurobiology The physiology of the nervous system using vertebrates and invertebrates. The function of nerve cells, synapses, sensory, motor, behavior and

learning. (4 cr) Laboratory. Sem 1. Prereq: BIO 2105, 2106 Prereq or Coreq: BIO 3055.

BIO 5100 Seminar Special topics in modern biology, presented by student lectures and informal discussions. Topics to be announced each semester. (1 cr) Sem 1&2. Prereq: BIO 2105, 2106. Limited to senior status Biology majors.

BIO 6409 Senior Thesis Directed laboratory research. Students will conduct original research and submit a written thesis. Prereq: BIO 6509, senior status. (2 cr) Sem 1&2. Prereq: BIO 2105, 2106. Coreq or Post-req: Senior seminar

BIO 6509 Directed Research Library and/or laboratory research under the direction of a student-selected Biology faculty member. Prerequisite for Senior Thesis. (2 cr) Sem 1&2. Prereq: BIO 2105, 2106; consent of mentor; 3.0 QPA. Restricted to junior or senior biology majors. (No substitution for required biology laboratory courses.)

BIO 6940 Special Topics in Biology Current topics in biology. Topics will be announced on a semester by semester basis. Specific information will be available in the department office. (2 cr) Sem 1&2. Prereq: BIO 2105, 2106.

CHEMISTRY

Chair and Professor: Giuliano

Professors: Busch, Doyne, Edwards, Wójcik, Zajac

Associate Professors: Cawley, Ludwig, Selinsky, Spritzer

Assistant Professors: Bausch, Bessel,

Office: 205 Mendel, tel. 519-4840

MAJOR: CHM 1000; 1151/1105; 1152/1106; 3002; 3211/3201; 3212/3202; 3312/3301; 3411/3401; 3412/3402; 3515/3505; 3516/3506; 4611; MAT 1500/1505/2500; and PHY 2410/2411; 2412/2413. In addition, Chemistry majors must select a minimum of two Chemistry electives and two Chemistry lab electives.

MINOR: CHM 1151/1103; 1152/1104; 2211/2201; and 2212/2202. In addition, Chemistry minors must select a minimum of three courses (along with appropriate laboratories) from the following Chemistry courses: 3002 and any course higher than 3300.

BIOCHEMISTRY CONCENTRATION: The first two years of this program are identical to the first two years of the chemistry major. The following courses must be successfully completed during the last two years: CHM 3002, 3411/3401, 3412/3402, 3514/3503, 4621/4622, 4603, 3312/3301. In addition, this concentration requires a minimum of two chemistry electives along with their accompanying laboratories. The graduate biochemistry courses 7693 and 7662 will not satisfy the elective requirements.

RESEARCH OPPORTUNITIES IN THE CHEMISTRY DEPARTMENT: The Chemistry Department offers two mechanisms for participation in research by undergraduate major. Departmental fellowships for eight weeks of summer research are funded by local companies. Recipients of these fellowships carry out a research project under the direction of a faculty member. In addition, students may enroll in research for academic credit during the school year (CHM 4801, 4802, or 4803).

CHM 1000 Professional Development

Seminars Seminars are taken each semester for four years. The seminars are presented by visiting chemists, faculty, and students and cover the following topics: undergraduate research, career planning, the chemical industry, chemical safety, medicinal chemistry, pharmacology, etc. **(1 cr) Sem 1&2**

CHM 1001 Experimental Chemistry I

Laboratory Simple syntheses and

quantitative measurements; separations and analysis of materials. By using some modern instrumentation the students will begin to see the power of experimentation and the scientific method. **(1 cr) Sem 1. Coreq: CHM 1021 or 1050. Two hours laboratory a week.**

CHM 1002 Experimental Chemistry II

This laboratory experience will continue to extend the students' knowledge of chemistry as an experimental science. **(1 cr) Sem 2. Prereq:**

CHM 1001, and either CHM 1021 or 1050. Coreq: CHM 1022 or 1051-6. Two hours laboratory a week.

CHM 1021 Chemistry: Principles and Practice I

For non-science majors. Basic principles of chemistry, illustration of how these are derived from experiments and application of the scientific method. Contemporary practical uses of chemistry and contemporary chemical based problems are used to illustrate principles learned and to show the role and limitations of chemistry in society. **(3 cr)** *Sem 1. Coreq: CHM 1001.*

CHM 1022 Chemistry: Principles and Practice II

Continuation of CHM 1021. Covers liquids, solids, solutions, acid-base, chemical kinetics, energy, oxidation-reduction, cell potentials, and organic chemistry. **(3 cr)** *Sem 2. Prereq: CHM 1001, CHM 1021. Coreq: CHM 1002.*

CHM 1050 Chemistry Themes: Foundations

For non-science majors. The first semester in a two-semester sequence. The course covers basic concepts of measurement, the S.I. system of units, structure of atoms and of molecules, inorganic nomenclature, qualitative and quantitative aspects of chemical reactions, properties of gases, properties of solutions, principles of chemical equilibrium, acids and bases. **(3 cr)** *Sem 1. Coreq: CHM 1001.*

CHM 1051 Chemistry Themes: Chemistry and Energy

For non-science majors. The role of chemistry in the production, storage and utilization of energy. Topics covered include basic thermochemistry, thermodynamics, organic chemistry, energy from combustion, electrochemistry, electrochemical energy production, nuclear chemistry, and other

sources of energy (phase changes, wind and water power, solar energy, tidal power). **(3 cr)** *For Non-Science majors. Sem 2. Prereq: CHM 1050, 1001. Coreq: CHM 1002.*

CHM 1052 Chemistry Themes: Organic and Biological Chemistry

For non-science majors. Introduction to alkanes, alkenes, arenes, amines, carboxylic acids, amino acids, carbohydrates, proteins and major metabolic pathways. Also includes topics in nutrition and exercise. **(3 cr)** *Sem 2. Prereq: CHM 1050, 1001. Coreq: CHM 1002.*

CHM 1053 Chemistry Themes: Atoms, Elements and Molecules

For non-science majors. The experiments which led to the inception and evolution of the concepts of atoms, elements, and molecules will be examined. These samples give a grounding in the fundamentals of chemistry and an understanding of the logic which underlies the scientific method. **(3 cr)** *Sem 2. Prereq: CHM 1050, 1001. Coreq: CHM 1002.*

CHM 1054 Chemistry Themes: Environmental Chemistry

For non-science majors. Application of scientific laws, principles and concepts to the development of a basic understanding of the chemistry of the environment, its use and abuse, as it is affected by the quality of the air, water and soil; and the impact of the increasing demands for earth's limited fossil, biological and mineral resources by an exponentially growing global population. **(3 cr)** *Sem 2. Prereq: CHM 1050, 1001. Coreq: CHM 1002.*

CHM 1055 Chemistry Themes: Architecture of Molecules

For non-science majors. An historical development of the idea of three dimensional species at the molecular level; experimental verification, chiral species,

electronically delocalized species, aromatic and anti-aromatic species, fluxional species, rigid, highly strained, unstable and metastable species.

Current and future directions (e.g.

ABuckyballs® as time allows. (3 cr) Sem 2.

Prereq: CHM 1050, 1001. Coreq: CHM 1002.

CHM 1056 Chemistry Themes:

Supermarket Chemistry For non-science majors. The chemistry of products found in the supermarket: food processing, food additives, soaps and detergents, cosmetics, and over-the-counter pharmaceuticals. (3 cr) Sem 2. Prereq: CHM 1050, 1001. Coreq: CHM 1002.

CHM 1103 General Chemistry Laboratory I

Qualitative and quantitative laboratory experiments which include: the reactions of metals with water; the collection and plotting of data; acid-base titrations; oxidation-reduction titrations; the use of the pH meter and the determination of acid-base titration curves; the use of the spectrophotometer. (1 cr) Sem 1&2. Coreq: CHM 1131 or 1151.

CHM 1104 General Chemistry Laboratory

II Students will be required to identify all metal ions present in an unknown solution. Quantitative titrations of sodium carbonate and the total hardness of water. Synthesis of inorganic compounds and determination of the formula of a transition metal complex ion using spectroscopic methods. (1 cr) Sem 2. Prereq: CHM 1103, CHM 1151. Coreq: CHM 1152.

CHM 1105 General Chemistry Laboratory

Practice I Selected experiments designed to illustrate fundamental principles and techniques to train students in critical observation and deduction as well as in basic laboratory techniques and skills; emphasis on

quantitative measurements. (1 cr) Sem 1.

Coreq: CHM 1151. Open only to Chemistry majors. Three hours laboratory a week.

CHM 1106 General Chemistry Laboratory

Practice II A continuation of CHM 1105, with emphasis on principles of aqueous ionic equilibria as applied to identification of chemical substances, chemical synthesis, spectroscopy, chromatography, equilibrium, etc. (1 cr) Sem 2. Prereq: CHM 1105, CHM 1152. Coreq: CHM 1152. Open only to Chemistry majors. Three hours laboratory a week.

CHM 1108 General Chemistry Laboratory

II Chemistry of organic and biochemical compounds with an emphasis on the identification and chemical reactivities of functional groups. Students will be required to separate and identify various organic and biochemical compounds. (1 cr) Sem 2. Prereq: CHM. 1131, 1103. Coreq: CHM 1134. Three hours laboratory a week.

CHM 1131 General Chemistry I

Fundamental laws and theories of chemistry: atomic theory, chemical bonding, chemical kinetics and chemical equilibrium, gases, liquids, solids, solutions, stoichiometry, acid-base theories, electrochemical concepts, and an introduction to nuclear chemistry will be included. (3 cr) Sem 1&2. Coreq: CHM 1103. For health science students.

CHM 1134 General Chemistry II

Introduction to organic and biochemistry stressing the application of principles developed in CHM 1131. (3 cr) Sem 2. Prereq: CHM 1131. Coreq: CHM 1108. For health science students.

CHM 1151 General Chemistry I Basic concepts of chemistry covering the following topics: properties of bulk matter; stoichiometry; colligative properties of solutions; thermochemistry; redox reactions; equilibrium and kinetics. **(4 cr)** *Sem 1&2. Coreq: CHM 1103 or 1105. For Majors in science and engineering..*

CHM 1152 General Chemistry II Descriptive presentation of atomic orbitals; molecular structure; chemical and physical trends in the periodic table; general descriptive chemistry of the elements; complex ions and factors that drive chemical reactions. **(4 cr)** *Sem 2. Prereq: CHM 1103 or 1105, and 1151. For Majors in science and engineering.*

CHM 2201 Organic Chemistry Laboratory I Practical experience in techniques used for separation, purification, and isolation of synthetic as well as naturally occurring organic compounds. Semi-micro and micro scale experiments. Crystallization, distillation, extraction, and chromatography are introduced. **(1 cr)** *Sem 1. Prereq: CHM 1104. Coreq: CHM 2211 or 3211. Three hours laboratory a week.*

CHM 2202 Organic Chemistry Lab II Further training in laboratory techniques used in organic chemistry, including those introduced in CHM 2201, and utilization of such techniques in representative types of organic reactions. **(1 cr)** *Sem 2. Prereq: CHM 2201. Coreq: CHM 2212 or 3212.*

CHM 2211 Organic Chemistry I Fundamental principles of organic chemistry stressing the relation of structure and reactivity. Structure and bonding; stereochemistry; acids, and bases; electrophilic addition, elimination and nucleophilic

substitution. **(3 cr)** *Sem 1. Prereq: CHM 1152 and 1104. Coreq: CHM 2201*

CHM 2212 Organic Chemistry II Continuation of CHM 2211. Carbonyl group reactions, aromatic chemistry, spectroscopy and special topics such as heterocycles, carbohydrates and nucleosides, amino acids and proteins, lipids, radicals, rearrangements, polymers and photochemistry. **(3 cr)** *Sem 2. Prereq: CHM 2211, 2201. Coreq: CHM 2202.*

CHM 3002 Chemical Literature and Research A writing intensive course with training in the use of the chemical literature, in performing searches in Chemical Abstracts, in computer searches, in writing reports, research papers, grant proposals, and abstracts. One written report will also serve as the basis for an oral presentation. **(3 cr)** *Sem 2*

CHM 3201 Organic Chemistry Laboratory I Provides practical experience in the principal techniques utilized for the purification, separation, identification, and synthesis of organic compounds on the micro scale. **(2 cr)** *Sem 1. Prereq: CHM 1104 or 1106. Coreq: CHM 3211. Six hours laboratory a week.*

CHM 3202 Organic Chemistry Laboratory II The semimicro techniques include distillation, recrystallization, extraction, sublimation, and chromatography. Synthesis of representative organic compounds. An introduction to research in organic chemistry, introduction to qualitative organic analysis and practical use of infrared and nuclear magnetic spectroscopies. **(2 cr)** *Sem 2. Prereq: CHM 3201. Coreq: CHM 3212. Six hours laboratory a week.*

CHM 3211 Organic Chemistry I Fundamental principles of organic chemistry

stressing the relation of structure and reactivity from a physical-chemical viewpoint. Structure and bonding; stereochemistry; acids and bases; electrophilic addition reactions of alkenes, alkynes, and dienes; nucleophilic substitution reactions at saturated carbon atoms and elimination reactions leading to alkenes or alkynes. **(3 cr)** *Sem 1. Prereq: CHM 1152, and 1104 or 1106. Coreq: CHM 3201. Three hours lecture, one hour recitation a week.*

CHM 3212 Organic Chemistry II Addition and substitution reactions of carbonyl compounds, electrophilic and nucleophilic aromatic substitutions, radical and concerted reactions, heterocyclic compounds and polymer chemistry. Spectroscopic methods of analysis including nuclear magnetic resonance, infrared spectroscopies and mass spectrometry. Introduction to multi-step organic synthesis. **(3 cr)** *Sem 2. Prereq: CHM 3211. Coreq, CHM 3202. Three hours lecture, one hour recitation a week.*

CHM 3301 Inorganic Chemistry Laboratory
This laboratory course emphasizes preparative techniques of inorganic compounds. Instrumental methods of structure elucidation are included. **(1 cr)** *Sem 2. Coreq: CHM. 3312. Three hours laboratory a week.*

CHM 3312 Descriptive Inorganic Chemistry Emphasis on practical aspects of chemical and industrial processes including recovery and refining of elements and their compounds. The periodic relationship of elements will be studied along with structure, bonding and stereochemistry of inorganic chemicals. Acid-base theory and coordination chemistry will also be covered. **(3 cr)** *Sem 2. Prereq: CHM. 3411.*

CHM 3401 Physical Chemistry Laboratory I Use of the computer to design statistical package software for treatment of experimental data will be stressed in the two semester laboratory course. Phase and chemical equilibrium to supplement CHM. 3411 will be included. Gas chromatographic techniques will be used. **(1 cr)** *Sem 1. Prereq: CHM. 1104 or 1106. Coreq: CHM 3411 Three hours laboratory a week*

CHM 3402 Physical Chemistry Laboratory II Experimental methods of chemical kinetics will be covered. Spectroscopic, polarimetric, and conductimetric methods will be used. **(1 cr)** *Sem 2. Prereq: CHM. 3401. Coreq: CHM. 3412. Three hours laboratory a week.*

CHM 3411 Physical Chemistry I First, second, and third laws of thermodynamics; phase equilibria and chemical equilibria; gases; and electrochemistry will be covered in this course. **(3 cr)** *Sem 1. Prereq: CHM 1152, 1104 or 1106; MAT 1505. Coreq: CHM 3401. Three hours lecture, one hour recitation a week.*

CHM 3412 Physical Chemistry II The course will present an introduction to atomic and molecular structure and spectroscopy. The knowledge attained in these topics will be used to present the topics of chemical kinetics and chemical dynamics from the molecular point of view. **(3 cr)** *Sem 2. Prereq: CHM. 3411. Coreq: CHM. 3402.*

CHM 3503 Analytical Chemistry Laboratory Laboratory course to complement CHM. 3514; emphasis on the analysis of biological systems utilizing modern analytical techniques. **(1 cr)** *Sem 1. Coreq: CHM. 3514. Three hours laboratory a week.*

CHM 3505 Analytical Chemistry

Laboratory I Designed to complement CHM. 3515. Laboratory experiments involving gravimetric, titrimetric and spectrophotometric methods are used to obtain quantitative data about the composition of various samples. **(2 cr)** *Sem 1. Prereq: CHM.1107, 1152. Coreq: CHM 3401, 3411, 3515. Four hours laboratory a week.*

CHM 3506 Analytical Chemistry

Laboratory II A complementary course for CHM. 3516. Emphasis on instrumental techniques to obtain quantitative data. Techniques such as spectroscopy, spectrochemical titrations, electroanalytical techniques (electrode position, polarography, coulometry, etc.) and separation techniques (gas chromatography and liquid chromatography). **(2 cr)** *Sem 2. Prereq: CHM 3505. Coreq: CHM 3402, 3412, 3516. Four hours laboratory a week.*

CHM 3514 Analytical Chemistry Designed for the biochemistry concentration with emphasis on theory, instrumentation and practical applications of analytical chemistry to biological materials. **(3 cr)** *Sem 1. Prereq: general chemistry, organic chemistry.*

CHM 3515 Analytical Chemistry I

Fundamentals of modern analytical chemistry with emphasis on data collection and analysis, evaluation of error, extensive treatment of equilibria in simple and complex systems. Examination of gravimetric and titrimetric methods. Introduction to spectroscopy. **(3 cr)** *Sem 1. Prereq: CHM 1152, 3212, 3202. Coreq: CHM 3401, 3411, 3505.*

CHM 3516 Analytical Chemistry II

Quantitative instrumental analysis theory and its application to the analysis of common

laboratory samples, environmental samples. The application of reaction rates to analytical chemistry. Topics such as optical methods, electroanalytical techniques, and chromatographic techniques are stressed. **(3 cr)** *Sem 2. Prereq: CHM 3505 and 3515. Coreq: CHM 3402, 3412, 3506.*

CHM. 4202 Organic Analysis Laboratory

Laboratory experiments involving separations by modern chromatographic techniques including thin layer, radial, flash, and high performance liquid chromatography. Multistep syntheses of organic compounds with experiments chosen from the chemical literature. Characterization of organic compounds by advanced spectroscopic methods. **(2 cr)** *Sem 2. Coreq: CHM 4222. Two three-hour laboratory periods a week.*

CHM 4222 Organic Analysis Spectroscopic methodology for the determination of structure of static, as well as, dynamic molecular systems. Proton and carbon-13 nuclear magnetic resonance spectroscopy, mass spectrometry, infrared, ultraviolet-visible, and optical rotatory dispersion-circular dichroism will also be presented. **(3 cr)** *Sem 2. Prereq: CHM. 3212, 3202, 3412, or equivalent.*

CHM 4413 Spectroscopy and Structure

Use of the fundamental principles of atomic and molecular structure to study ultraviolet, infrared, microwave and magnetic resonance spectroscopies. Continuous-wave and Fourier transform methods will be included along with fluorescence, phosphorescence and laser spectroscopic techniques. **(3 cr)** *Sem 1. Prereq: PHY 2410 and 2412.*

CHM 4601 Biochemistry Laboratory

An introduction to laboratory techniques in biochemistry; enzyme kinetics, column

chromatography, electrophoresis, standard biochemical assays and interpretation of data. **(1 cr)** *Sem 2. Prereq: CHM 2202 or 3202 and CHM 4611. Three hours of laboratory a week.*

CHM 4603 Biochemistry Techniques and Practices A laboratory course to complement CHM 4621. Emphasis on enzyme purification, enzyme characterization, nucleic acid analysis, polysaccharide analysis and coupled enzyme systems. **(2 cr)** *Sem 1. Prereq: CHM. 2212, 3212 and 4621. Coreq: CHM 4622. Two three hour laboratories a week.*

CHM 4611 Introductory Biochemistry Basic areas of biochemistry; carbohydrates, lipids, proteins, nucleic acids, enzymes, vitamins and hormones; consideration of their utilization and metabolism in living systems. **(3 cr)** *Sem 1. Prereq: CHM 2212 or 3212.*

CHM 4621 Biochemistry I An in depth study of the structure and function of proteins, enzymes, carbohydrates, nucleic acids and lipids. **(3 cr)** *Sem 2. Prereq: CHM 2212 or 3212.*

CHM 4622 Biochemistry II Continuation of CHM 4621 with major emphasis on the metabolic pathways of carbohydrates, fats,

steroids, amino acids and nucleotides. Metabolic controls of the pathways is stressed. **(3 cr)** *Sem 1. Prereq: CHM 4621. Coreq: CHM 4603.*

CHM 4623 Biochemistry III Integration of metabolism in organisms, membrane receptors, expression of genes, gene manipulation, translation, transcripts, etc. **(3 cr)** *Sem 2. Prereq: CHM 4622.*

CHM 4801 Undergraduate Research I Student participation in independent research under faculty supervision, frequent conferences with adviser on literature search, theoretical and experimental research techniques. Writing enriched. **(3 cr)** *Sem 1. Prereq: approval of undergraduate committee and acceptance by proposed adviser. Hours of research a week determined by agreement between student and adviser.*

CHM 4802 Undergraduate Research II Continuation of CHM 4801. Writing enriched. **(3 cr)** *Sem 2*

CHM 4803 Undergraduate Research III Continuation of CHM 4802. Writing enriched. **(3 cr)** *Sem 2*

CLASSICAL STUDIES

Chair and Professor: Hunt

Assistant Professor: Jaworowski

Location: 320 St. Augustine Center, tel. 519 4780

MAJOR: A major in Classical Studies generally requires a minimum of 12 courses, (minimum 36 credits) in Latin or Greek. Up to 2 Classics courses (taught in English: Archaeology, Mythology, etc.) may be included in the 12 course total. Classics 3001, Independent Study, will be considered a Latin or Greek course when the study is done in these languages.

MINOR: A minor in Classical Studies generally requires a minimum of 6 courses (minimum 18 credits) in Latin or Greek. Up to 2 Classics courses (taught in English: Archaeology, Mythology, etc.) may be included in the 6 course total. Classics 3001, Independent Study, will be considered a Latin or Greek course when the study is done in these languages.

CLASSICS

CLA 2021 Language of Science and

Medicine Greek and Latin prefixes, roots, and suffixes in modern vocabulary; vocabulary building, with emphasis on technical terminology in scientific and medical usage. Knowledge of the languages is not required. **(3 cr)** *Sem 1.*

CLA 2032 Classical Mythology The myths, legends and folklore of the Greeks and Romans as they developed in their life, thought and literature; their influence on the Renaissance and modern times. **(3 cr)** *Sem 1&2.*

CLA 2051 The Cities of Ancient Greece

Classical archaeology and architecture of Greece. Selected sites in the Greek world with emphasis on their architectural, artistic and history significance. **(3 cr)** *Sem 1.*

CLA 2052 Rome: The Ancient City

Classical archaeology and architecture of Italy.

Selected sites in the Roman world with emphasis on their architectural, artistic and historical significance. **(3 cr)** *Sem 2.*

CLA 3001 Independent Study in Classics

Reading of selected material in Latin or Greek or in classical literature in translation under the direction of a member of the staff. **(3 cr)** *Sem 1&2; Prereq: Consent of instructor. May be repeated for credit.*

CLA 3040 Studies in the Classics

Selected themes of special interest. Topics vary according to interests of students and instructor: e.g. Women in the Classical World, Slavery in the Ancient World, Classical Rhetoric, etc. **(3 cr)** *Sem 1&2.*

CLA 3052 Roman Law

The origins, nature, and history of Roman Law during the Republic and Empire; evolution of the court system; civil and criminal codes; judicial procedure; social, business and economic institutions and

the law; government and administration of the empire. (3 cr) *Sem 2.*

GREEK

GRK 1001, 1002 Introductory Greek (Ancient) I and II The basic forms, syntax and vocabulary of Ancient Attic Greek; selected prose in second semester. (10 cr) *Sem 1&2; GRK 1001 or permission of chair is the prerequisite for GRK 1002. This sequence fulfills Arts and Sciences language requirement.*

GRK 1051, 1052 New Testament Greek I and II Essentials of the grammar, syntax and vocabulary of the Greek of the New Testament. Reading and writing of simple New Testament Greek. (10 cr) *Sem 1&2. Prereq. for GRK 1052: GRK 1051 or permission of chair. This sequence fulfills Arts and Science language requirement.*

GRK 3001 Readings in Authors Selected readings from a variety of Greek authors. (3 cr) *Sem 1.*

GRK 4250 Greek Historians Selections from the works of Herodotus, Thucydides, or Polybius. (3 cr) *Sem 1.*

GRK 4350 Greek Orators Selected Orations; the style and structure of the speeches, their relations to the historical occasions for which they were composed, and the contribution of rhetoric to the intellectual life of the fourth century. (3 cr) *Sem 2.*

GRK 4450 Greek Philosophers Greek philosophical thought and its vehicle, the Greek language, based on the reading of texts in the original. (3 cr) *Sem 2.*

GRK 5250 Homer Introduction to

Homeric Greek and a study of Homeric epics. *Sem 2*

GRK 5850 Greek Tragedy Selected plays, read and interpreted in the light of contemporary Greek institutions and thought, with attention to their poetic and dramatic structure. (3 cr) *Sem 2.*

GRK 5950 Greek Comedy Selected plays, read and interpreted in the light of contemporary Greek institutions and thought, with special attention to their poetic and dramatic structure. (3 cr) *Sem 2.*

LATIN

LAT 1001, 1002 Introductory Latin I and II Basic forms, syntax and vocabulary; selected Latin prose in second semester. (6 cr) *Sem 1&2 For students with no Latin or with only one year of high school Latin, LAT 1001 or permission of chair, is the prerequisite for LAT 1002. Students taking LAT 1001 and/or 1002 must take six other credits in Intermediate Latin to fulfill the requirements of the Bachelor of Arts degree if they select Latin to fulfill the foreign language requirements.*

LAT 2031, 2032 Intermediate Latin I and II Review of Latin syntax; selected readings from prose and poetry. Lat. 2031 or permission of chairperson is prerequisite for Lat. 2032. (6 cr) *Sem 1&2.*

LAT 3001 Readings in Authors Selected readings from a variety of Latin authors. (3 cr) *Sem 1.*

LAT 3050 Prose Composition Practice in the composition of Latin in a variety of styles. (3 cr) *Sem 1.*

LAT 3150 The Latin Language Historical

Latin grammar and syntax; the syntax of classical Latin. (3 cr) *Sem 1.*

LAT 4051 Cicero Reading of selected orations with special emphasis on the historical background. Selection from rhetorical and philosophical works and letters. (3 cr) *Sem 1.*

LAT 4150 Caesar Reading and interpretation of Julius Caesar's commentaries. (3 cr) *Sem 1.*

LAT 4350 Livy Extensive reading in the *Ab Urbe Condita*; Livy as historian of Rome. (3 cr) *Sem 1.*

LAT 4450 Tacitus Extensive reading in the *Annales*; Tacitus as historian of the early principate. (3 cr) *Sem 1.*

LAT 4550 Suetonius Reading of the major *Lives*; Suetonius's conception of biography, the historical and literary value of the *Lives*. (3 cr) *Sem 2.*

LAT 5050 Plautus and Terence The nature of Roman comedy. (3 cr) *Sem 1.*

LAT 5250 Vergil The *Aeneid*, read and interpreted in the light of ancient poetical theory and the epic tradition; the civilized epic as a new form; Vergilian epic techniques; careful reading of selections from the *Eclogues* and *Georgics*. (3 cr) *Sem 2.*

LAT 5350 Ovid Ovid as an epic poet of the Augustan age. (3 cr) *Sem 1.*

LAT 5450 Horace Augustan lyric and satire. (3 cr) *Sem 2.*

LAT 6001 Seminar A reading, research, and conference course on selected topics of Roman literature and history; introduction to research in classical studies. (3 cr) *Sem 2.*

COMMUNICATION

Chair and Professor: Nance

Professor: Lynch

Associate Professors: Bowen, Mackey-Kallis, Michal-Johnson, Shyles

Assistant Professors: Crable, Rose, Wilke

Instructors: Berens, Blanche, O'Leary, Templeton

MAJOR: Thirty (30) credit hours are required. CA 1000, Survey of Communication Studies, and CA 1100, Public Speaking, are prerequisites which must be taken in the sophomore year. CA 5000, Communication Research, should be taken in the junior year or prior to taking CA 5050, Senior Project.

After completing CA 1000 and declaring the Communication major, students will consult their academic advisers and choose one of three areas of emphasis: Rhetoric & Performance Studies (2000 -2950), Media & Film Studies (3000 -3950), and Interpersonal and Organizational Studies (4000 - 4950). They will take three courses in the area of emphasis, one course in each of the other two areas, and one additional course in an area of their choice to complete the major. A complete listing of courses divided by area of emphasis is available in the Communication office.

Communication majors who choose internships may apply three credits to satisfy major requirements. If more internship credits are taken, they must be free electives.

MINOR: Survey of Communication Studies (C.A. 1000), plus four courses from the major course offerings.

COM 1000 Survey of Communication

Studies Process of communication; range of perspectives from which communication can be studied (from classical rhetoric to contemporary theory); the functions communication serves; and the forms of communication such as interpersonal, small group, organizational, public address, and mass media. **(3 cr)**

COM 1100 Public Speaking Principles of communication related to speech composition and delivery; finding, analyzing, organizing and presenting material in ways appropriate to and effective with diverse audiences. **(3 cr)**

AREA ONE:

RHETORIC AND PERFORMANCE STUDIES

COM 2000 Voice and Diction

Improvement of vocal quality and articulation through study of vocal anatomy, phonetics, projection, and expressiveness. Emphasis on live and taped performances of readings. **(3 cr)**

COM 2050 Performance of Literature Solo and group performance of poetry, prose, and drama. Focus on rhetorical power of performed literature. Combines elements of theatre, literature and communication. **(3 cr)**

COM 2100 Advanced Speaking and Speechwriting Intensive study of oral style and content; introduction to rhetorical theory and criticism; utilizing these concepts to prepare and deliver speeches. (3 cr) *Prereq: C.A. 1100 or permission of instructor.*

COM 2150 Storybuilding for the Camera Development of narrative strategies through improvisation and techniques of mediated visualization using video. (3 cr)

COM 2210 Rhetoric and Public Discourse Theories, genres, contexts, and critical methodologies of rhetorical discourse. Reading and analysis of significant texts in order to appreciate their role in shaping the ideas, ideals, and institutions of society. (3 cr)

COM 2250 Argumentation and Debate Argumentation theory and practice, emphasizing the construction of well-reasoned arguments and attacks on and defense of arguments. Participation in a number of in-class debates. (3 cr)

COM 2310 African American Rhetoric The Symbolic construction of African Americans in the United States through an analysis of speeches, films, television and other media. (3 cr)

COM 2410 Campus Newspaper Practicum Practical experience in running a professional newspaper, the *Villanovan*, including experience in news gathering, story development, editing, copy reading, layout, graphics and the business aspects of a newspaper - accounts, advertising and costs. (3 cr) *Prerequisite: ENG. 2020 and permission of instructor.*

COM 2450 Media and Politics Examination of political communication research, theory and history. A particular focus on the role of media, such as advertising and news reporting, on political campaigns and policymaking. (3 cr)

COM 2510 Broadcast Performance Styles and techniques of broadcast journalism performance, including studio and location reporting and interviewing. Historical and contemporary trends in broadcast journalism. (3 cr)

AREA TWO:

MEDIA AND FILM STUDIES

COM 3000 Mass Communication Studies Structure and content of the major media industries in America (radio, television, film, newspapers, magazines, recordings, and books), and how each interacts with individuals, groups, and institutions. Students analyze and critique media systems and content in terms of social, legal, political, and economic forces that influence them. (3 cr)

COM 3050 Public Relations Theories behind the practice of public relations as well as a working knowledge in public relations strategy planning. Restricted to Communication majors and minors or permission of chairperson. (3 cr)

COM 3100 Advertising Strategies and techniques used in contemporary American advertising: consumer behavior, market research and analysis, message development for print and broadcast, and media selection. (3 cr) *Restricted to Communication majors and minors or permission of chairperson.*

COM 3150 Broadcast Writing Develop broadcast writing skills through a series of assignments including public communication

campaigns, commercials, and analysis of short dramatic pieces. **(3 cr)**

COM 3210 Television Production In-studio workshop that deals with basic television production techniques, including producing and directing short interview programs, news, demonstrations and short dramatic pieces. Discussion of current problems in the management and operation of a television broadcasting station. **(3 cr)**

COM 3250 Advanced Television Production Extends students' knowledge of basic television production; involves the writing, planning, and creation of varied formats of television programming, culminating in a semester project intended for broadcast or other media outlet **(3 cr)** *Prerequisite: CA 3210 or permission of instructor.*

COM 3300 Programming for Radio and Television Process of evaluation, selection and scheduling of programming for television, radio and cable TV. **(3 cr)**

COM 3310 Broadcast Management and Sales Sales and management as part of the broadcast industry; management theory and communication theory; interpersonal dynamics of the selling environment and management roles. **(3 cr)**

COM 3350 Film Analysis Methods and perspectives used to analyze visual media drawing on contemporary and historically important films. Historical, theoretical, and aesthetic approaches to film analysis, as well as the social, political and economic forces that influence film content. **(3 cr)** *Requires outside viewing.*

COM 3400 Film History Evolution of film as an art form; includes the impact of technology. **(3 cr)** *Requires outside viewing.*

COM 3450 International Cinema Study of the film of or about a particular country with emphasis on political, social, cultural and artistic issues. **(3 cr)** *Requires outside viewing.*

COM 3510 Contemporary Cinema Seminar course in which various strategies are applied to the analysis of contemporary films. **(3 cr)** *Requires outside viewing.*

COM 3550 Film Genre Study Exploration of a particular genre's significance within film history and its reflection of contemporary political, social, and cultural issues. **(3 cr)** *Requires outside viewing.*

COM 3650 The Film Auteur Intensive chronological study of the work of one European or American film director. **(3 cr)** *Requires outside viewing.*

COM 3700 Women and Film Historical survey of American film from a feminist perspective. Study of American and foreign women directors. **(3 cr)** *Requires outside viewing.*

COM 3750 Families on Film Study of films which focus on the dynamics of family communication using the semiological, psychoanalytic, phenomenological and family communication theory approaches. **(3cr)** *Requires outside viewing.*

COM 3800 Media Criticism Analysis of contemporary film, television, music, print media and electronic media from a cultural studies perspective. **(3 cr)**

AREA THREE:
INTERPERSONAL AND
ORGANIZATIONAL STUDIES

COM 4000 Interpersonal Communication Studies Explores everyday communication between people across many contexts. Critical examination of the personal, social, and cultural dimensions of human relationship. Experiential activities augment lectures/discussions. (3 cr)

COM 4050 Small Group Communication Theory and practice of communication for idea generation and problem-solving in groups and in multiple contexts. (3 cr)

COM 4100 Speech Communication in the Classroom Role of communication in the contemporary classroom; classroom skills of lecturing, discussing, demonstrating and oral reading; communication strategies to achieve classroom discipline. (3 cr)

COM 4150 Gender and Communication Communication of women and men against the backdrop of society and feminism in such communicative contexts as families, schools, friendships and relationships, organizations, media, and technology. (3 cr)

COM 4200 Intercultural Communication The impact of culture on communication, styles, and practices. The role of communication in personal and professional intercultural relationships. (3 cr)

COM 4250 Organizational Communication Role of communication in organizing; supervisory-subordinate relationships, group relationships, organizational culture and communication networks, communication technologies,

communication based training and development, and human resource applications. (3 cr)

ADDITIONAL COURSES

COM 1903 Communication Internship Supervised work/study program in radio, television, advertising, publicity or public relation. (3 cr)

COM 1906 Communication Internship Supervised work/study program in radio, television, advertising, publicity or public relations. (6 cr)

COM 1909 Communication Internship Supervised work/study program in radio, television, advertising, publicity or public relations. (9 cr)

COM 2993 Communication Internship Supervised work/study program in radio, television, advertising, publicity or public relations. (3 cr)

COM 2996 Communication Internship More intensive, in depth work/study program in radio, television, advertising, publicity or public relations. (6 cr)

COM 5000 Communication Research Reading and designing research in communication through gathering and critically analyzing literature in the field and introduction of the chief methods used in communication studies. (3 cr)

COM 5050 Senior Project Design, implementation, and presentation of a group research project in which students apply the knowledge and skills learned through the Communication program of study to the investigation of rhetorical or communication

phenomena. **(3 cr)** *Restricted to Communication seniors. Prerequisite: CA 5000.*

COM 5100 Directed Study Supervised project culminating in term report. **(3 cr)**

COM 5150 Special Topics in Communication A topic or problem in Communication selected by the instructor. **(3 cr)**

COMPUTING SCIENCES

Chair and Professor: Beck

Professors: Cassel, Fleischman

Associate Professors: Goelman, Levitin, Lewis, Joyce, Soong

Assistant Professors: Gormley, Hardt, Japaridze, Klassner, Papalaskari,

Office: 161 Mendel Science Center, tel. 519-7307

MAJOR: CSC 1051, 1052, 1200, 1300, 1600, 1700, 1800, 4170, 4700, and 4790; MAT 1500, 1505, and 2310; plus four departmentally approved elective courses in computer science; PHI 2180; a two-semester science sequence with corequisite laboratories, selected from an approved set of courses in Astronomy, Biology, Chemistry or Physics; and one more approved science or engineering courses. A specific list of approved electives and approved science/engineering courses can be obtained from the department office. A total of 26 credits in science and mathematics is required. French, German, or Russian is recommended to fulfill the core language requirement. The major in computer science is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board, a specialized accrediting body.

MINOR: CSC 1051, 1052, 1200 or ECE 2490, CSC 1300, and three elective courses chosen from the list of approved courses available from the department office.

CSC 1010 Tools for Text A unified view of the powerful tools for manipulating text and the algorithms they implement; complexity and security of operations on text; locating and searching online text databases and bibliographies via the Internet; alternative text structures: hypertext, multimedia; alternative input techniques: scanning, voice. **(3 cr)** *Two hours lecture, two hours laboratory per week.*

CSC 1020 Fundamentals of Computing Systems Information representation and manipulation; file systems and directories; compatibility and data exchange; security and privacy; elements of computer architectures and operating systems; computer networks, the Internet, and the World Wide Web; PC based examples and illustrations. **(3 cr)** *Two hours lecture, two hours laboratory per week.*

CSC 1024 Computing for Scientists Active learning of computing skills necessary for science students: data graphing, regression analysis, animation, symbolic computing, information search techniques, scientific report writing, Web page construction, fundamentals of programming. **(1 cr)**

CSC 1030 Problem Solving With Computers Using the microcomputer as a problem solving tool; system use; general purpose language programming; spreadsheet analysis and modeling; retrieving information from the Internet; strengths and weaknesses of computer based problem solutions. **(3 cr)** *Two hours lecture, two hours laboratory per week.*

CSC 1040 Computing with Images Computing systems as tools for design and publishing of graphically-rich material in many

forms: Image processing techniques and systems; image style and related tools; digital image processing theory; computational complexity; multimedia. **(3 cr)** *Two hours lecture, two hours laboratory per week.*

CSC 1051 Algorithms and Data Structures

I Problem analysis; algorithm design and refinement; extensive programming using an object-oriented language such as Java or C++; loops, selection, objects, classes, arrays, strings, inheritance; basic sorting and searching. **(4 cr)**

CSC 1052 Algorithms and Data Structures

II Abstract data types: dynamically linked structures; recursion; lists, stacks, queues, trees, graphs; advanced sorting and searching; requires extensive programming. **(4 cr)**
Prereq: CSC 1051.

CSC 1200 Computer Organization

Computer structure; central processing unit; binary number representation and arithmetic; digital logic design; storage units; machine language; introduction to assembly language. **(3 cr)** *Prereq: CSC 1052, 1300.*

CSC 1300 Discrete Structures

Mathematical structures that support computer science: sets, logic and proof, mathematical induction, relations, functions, counting techniques, probability, boolean algebra, matrices, graphs and trees. **(3 cr each)**
Coreq for CSC 1300: CSC 1052.

CSC 1600 Operating Systems System software design and implementation; process and resource management; concurrency, scheduling, and deadlock; memory management; file systems and security. **(3 cr)**
Prereq: CSC 1200

CSC 1700 Design and Analysis of

Algorithms Efficiency classifications and mathematical analysis of recursive and nonrecursive algorithms: sorting, searching, string processing, graphs, arithmetic; parallelism. **(3 cr)** *Prereq: CSC 1052, 1300.*

CSC 1800 Organization of Programming

Languages High level language features: data types, control structures; formal lexical and syntactical analysis; operational semantics; language translation. **(3 cr)** *Prereq: CSC 1052, 1300.*

CSC 2070 Algorithms and Data

Structures: Accelerated Introduction to object-oriented software development and data structures for students with some programming experience; objects, classes, inheritance, polymorphism; linked data structures; stacks, queues, lists, trees; recursion; basic sorting and searching; requires extensive programming. **(4 cr)**

CSC 2993 Computer Science Internship

Internship in computer science open to second semester sophomores and above. Most likely, intern will participate in computer system development, maintenance, or evaluation in an environment which supports sound software engineering techniques. **(3 cr)**

CSC 2996 Computer Science Internship

Internship in computer science open to second semester sophomores and above. Most likely, intern will participate in computer system development, maintenance, or evaluation in an environment which supports sound software engineering techniques. **(6 cr)**

CSC 4170 Theory of Computation

Finite automata and regular expressions; push down automata and context-free grammars; Turing

machines; Church's thesis; computability; NP-completeness. (3 cr) *Prereq: CSC 1700.*

CSC 4200 Advanced Algorithms and Complexity Greedy algorithms, divide-and-conquer; dynamic programming; backtracking; branch-and-bound; linear and integer linear programming; Fast Fourier transform, probabilistic algorithms; NP-complete problems and approximation methods. (3 cr) *Prereq: CSC 1700.*

CSC 4280 Parallel Algorithms and Architecture Design and analysis of parallel algorithms for arithmetic, matrix operations, sorting, simulation, combinatorial and graph problems, and Fast Fourier Transform. Taxonomies of parallel architectures; interconnection networks, meshes, trees, and hypercubes; scalability and speed-up. (3 cr) *Prereq: CSC 1600, 1700.*

CSC 4300 Computer Graphics Hardware and software in computer graphics; graphics programming language; input/output device handling; modeling in 3D space; development of interactive software. (3 cr) *Prereq: CSC 1052, 1300.*

CSC 4380 Information Visualization The presentation of information; project based-course. Possible topics: visual cognition, scientific visualization, illustration presentation, color theory, motion dynamics, image processing. (3 cr) *Prereq: CSC 1052, 1300.*

CSC 4400 Microprocessors Introduction to 8-, 16-, and 32-bit microprocessors; programming model; system architecture and software; instruction sets; addressing modes; input-output protocols; interrupt handling; RISC architecture. (3 cr) *Prereq: CSC 1200.*

CSC 4500 Introduction to Artificial Intelligence The nature of intelligence and the question of its computer implementation; search algorithms; knowledge representation; automated deduction; natural language understanding; planning; problem solving. (3 cr) *Prereq: CSC 1700.*

CSC 4600 Distributed Processing Systems Data concurrency; distributed file systems and database; distributed operating systems; security; interprocess communication; directory services; process migration; process vulnerability to partial failure. (3 cr) *Prereq: CSC 1600*

CSC 4630 Software Development and Systems Operating system structures; system calls; system libraries; interprocess communication; user-interface programming environments; software utilities; software portability. (3 cr) *Prereq: CSC 1600.*

CSC 4700 Software Engineering Management and production of software systems; the software life cycle; software design techniques and methodologies; completion of a team software development project. (3 cr) *Prereq: CSC 1700.*

CSC 4730 Human-Computer Interaction Design of the user/system interface; measurement of human-computer interaction; models of the user and user communities; design criteria for the interface; user interface management systems (UIMS); test and evaluation strategies and tools. (3 cr) *Prereq: CSC 1052, 1300.*

CSC 4780 Principles of Database Systems Concepts and technology of database management systems; data modeling with an

emphasis on the relational model; database querying and normalization; physical data organization. **(3 cr)** *Prereq: CSC 1052, 1300.*

CSC 4790 Senior Project Capstone course centered around a semester long software development or research project; project planning; requirements elicitation and specification; teamwork; oral presentations required of all students. **(3 cr)** *Prereq: CSC 4700.*

CSC 4811 Compiler Construction Lexical and syntactical analysis; code generation; error recovery; recursive descent compilation; handling of run time environment. **(3 cr)** *Prereq: CSC 1200, 1800.*

CSC 4900 Computer Networks Application development over the TCP/IP and OSI network environments; client server computing; use of the WWW as a distributed platform; hypermedia; directories; network

protocols; authentication and authorization. **(3 cr)** *Prereq: CSC 1600.*

CSC 5900 Seminar in Computer Science Study and discussion of selected topics in computer science with presentations by individual students. May be repeated for credit if topics are different. **(3 cr)** *Prereq: CSC 1052, 1300. Additional prerequisites may be imposed depending on the topic of the seminar.*

CSC 5930 Topics in Computer Science Lecture presentation of selected topics in computer science. May be repeated for credit if topics are different. **(3 cr)** *Prereq: CSC 1052, 1300. Additional prerequisites may be imposed depending on the topic of the course.*

CSC 5993 Independent Study Reading, research and/or projects in a selected area of computer science under the direction of a member of the staff. May be repeated for credit. **(3 cr)** *Prereq: consent of instructor*

CORE HUMANITIES

Coordinator and Professor: Doody

Office: 104 St. Augustine Center, tel. 519-7325

The College of Liberal Arts and Sciences is committed to the view that the humanities play an essential role in university education by stimulating intellectual wonder, broadening cultural awareness, helping us examine moral values, and strengthening our search for a just and humane society. All Arts and Sciences students have an intensive exposure to the humanities in their Core Humanities Seminar in each semester of the first college year.

CHS 1000 Ancient, Medieval and Renaissance Thought A Humanities seminar based principally on texts and readings drawn from primary sources up to 1650. Extensive written work and seminar discussions. Required readings: Hebrew and Christian scriptures, selections from the works

of Augustine, Shakespeare, Classical Greece and Medieval works. Readings from different genres and disciplines. Themes developed by the instructor in accordance with the selected readings. **(3 cr)**

**CHS 1001 Modern Thought:
Enlightenment to the Present** A

Humanities seminar based principally on texts and readings drawn from primary sources 1650 to the present. Extensive written work and seminar discussions. Readings from each of the following five historical eras: Early Modern,

Enlightenment, Romantic, Modernist, Contemporary. Readings will also reflect different genres and disciplines. Themes developed by the instructor in accordance with the selected readings, including a specific Augustinian theme. **(3 cr)**

CRIMINAL JUSTICE PROGRAM

Director: Jacobs

Office: 2nd Floor, Geraghty Hall, tel. 519-4786

MINOR: Fifteen hours, including SOC 3000 and twelve hours chosen from the following: CJ 2300, 3000; SOC 2200, 3010, 3020, 3100, 3200, PHI 2140; PSC 3500, 3600

CERTIFICATE PROGRAM: Thirty credit hours including SOC 1000, 2200, 3000, 3010, and 3020. The remaining fifteen credits are electives. *NOTE: All course work in the Certificate Program is applicable to the Associate in Arts and the B.A. degrees. Required courses for the Certificate that also are required core courses in the Criminal Justice concentration may be applied toward the concentration in Criminal Justice. Students seeking the Certificate must apply at the Office of the Program Director.*

CERTIFICATE IN PRIVATE SECURITY: Thirty credit hours, including (a) CJ 1000 and 2300; (b) three courses chosen from CJ 2000, 2500, 3000, 3500, 3800, 4000, 4500; SOC 3010, 3020, and (c) fifteen credits of electives. *Note: All course work in the certificate program is applicable to a concentration in Private Security in conjunction with the Associate of Arts and the B.A. degrees. Students seeking the Certificate in Private Security must apply at the Office of the Program Director.*

CJ 1000 Introduction to Private Security
Policies and procedures for special threats, institutional security systems, security issues, security challenges and the professionalization of private security. **(3 cr)**

CJ 2000 Institutional Security Policies, procedures and practices for the security of health, hotel, campus, museum, library and

archival, cargo, bank, commercial, corporate, and retail operations. **(3 cr)**

CJ 2300 Law and Civil Liability The legal rights and civil liability of police officers, security officers, corporations, partnerships, individually owned businesses, and political jurisdictions in the protection of people and property from criminal and deviant activities. **(3 cr)**

CJ 2500 Private Security Investigation

Investigation and the investigative strategies of organizations in conjunction with legal responsibilities and controls. (3 cr)

CJ 3000 Introduction to Victimology

Victim-offender relationships and the related concepts of victim vulnerability and victim culpability. (3 cr)

CJ 3500 Loss Prevention in Private

Security Concepts and strategies associated with the prevention of waste, accident, error, crime and unethical practices. (3 cr)

CJ 3800 Private Security and Collective

Behavior Protection for and the orderly control of people participating in mass audiences and demonstrations and the prevention and control of riots and mob behavior. (3 cr)

CJ 4000 Practicum in Private Security

A supervised field experience in institutional and organizational security. (3 cr)

CJ 4500 Private Security Supervision and

Management The supervision of private security personnel and the management of private security organizations. (3 cr)

Prerequisite: CJ 1000, 2300.

ECONOMICS

Chair and Professor: Mathis

Professors: DeFina, Thanawala, Zech

Associate Professors: Donziger, Clain,
Farrell, Giordano, Kroch, Wolnicki, Zaleski

Assistant Professors: Alexandrin, C. Asher, Casario, Mao,
Matthews, Taylor, Walsh, Webster

Office: 342 Bartley, tel. 519-4370

BACHELOR OF ARTS IN ECONOMICS: Students in the College of Liberal Arts and Sciences who specialize in Economics earn the degree of Bachelor of Arts in Economics. Such students must take MAT 1330 (calculus) either to satisfy their math requirement or as a free elective. They should take ECO 1001 and ECO 1002 as two of the three social science courses in the Sophomore year. In the Sophomore or Junior year majors are required to take MGT 1006. In addition, students must successfully complete: ECO 2101, 2102; STA 2107, 2108; and 15 elective Economics credits.

MINOR: Students must take MAT 1330 (calculus), and complete a total of 18 credits consisting of ECO 1001, 1002, 2101, 2102, and 6 economics elective credits, excluding ECO 2110.

For a list of economics courses, please see the Economics listing in the College of Commerce and Finance section of this catalog.

EDUCATION AND HUMAN SERVICES

Chair and Assistant Professor: Nichols

Professors: Brooks, Heitzmann, Morgan, Weinrach

Associate Professor: Davis, Durnin, Jacobs

Assistant Professors: Flood, Hill, Kahn, Lafferty, Monnig, Murray, Ramirez, Rosa

Office: 302 St. Augustine Center, tel. 519-4620

The Department of Education and Human Services secondary teacher education program seeks to develop prospective teachers able to meet the demands of teaching in a variety of school environments, public and private, urban and suburban. Provisions for professional competencies and teacher certification include a thorough grounding in the liberal arts, a substantial concentration in an area of specialization and a study of the foundations, principles and methods of education. *NOTE:* Courses marked with an * are for education majors and students from other departments who have been accepted into the Teacher Education Program.

MAJOR: Secondary Education majors are required to earn a total of 37 credit hours in Education courses. These 37 hours include a Senior Seminar and a 12 credit Student Teaching experience which is open only to students of the senior year who have completed all the subject matter courses in the field of specialization.

MINOR: A minor in Education requires at least 16 credits. Distribution requirements are: EDU 2202, 3251, 3254, 4290. An additional three credits must be earned from among the following: EDU 2201, 3263, 4220, 4245, 4301. Education majors and minors must come to the Department each semester for advising.

EDU 2201 Social Foundations of Education

I Major movements in the history of education to 1600 with emphasis on their social and philosophical context; historical development of educational aims, curriculum and types of education; religious and political influences on education. **(3 cr)** *Sem 1&2.*

EDU 2202 Social Foundations of Education

II Development of public and private education in America in its social and philosophical context; types of education, governmental activity in education, educational finance, religious and political influences,

impact of European developments. **(3 cr)**
Sem 1&2.

EDU 3251 Psychology of Learning The application of learning theory to classroom teaching. **(3 cr)**

EDU 3254 Principles and Techniques of Instruction The school curriculum; principles for selecting and using instructional materials; principles of educational measurement and evaluation; practical exercises in the use of media and materials, and in educational

measurement; classroom management. (4 cr)
Sem 1&2.

EDU 3263 Teaching the Exceptional Child

Introduction to the physical and social characteristics of disabled and handicapped persons between ages 3 and 21. Issues of inclusion and main streaming in light of recent legislation and court decisions. Problem cases, with an emphasis on the underprivileged, antisocial, and delinquent. (3 cr) *Sem 2.*

EDU 4220 Specialized Methods in the Secondary School

Approaches to teaching and their degrees of effectiveness; classroom management; methods applicable to the teaching of all subjects; student preparation and presentation of material for his/her own subject-matter field.* (3 cr) *Prereqs: EDU 2201, 2202, 3251, 3254, enrollment in a certification program.*

EDU 4245 Reading and Current Issues in Secondary Education

Techniques for evaluation of reading skills; methods of teaching reading in the subject areas; strategies for basic skill development; current issues in secondary education, and student observation in the schools. (3 cr)

EDU 4281 Methods and Materials of Teaching English/Communication in Secondary Schools

The curriculum, planning units and lessons in the teaching area; general methods of teaching, special methods and instructional materials in the subject, including textbooks, courses of study and reference works; application of the principles and techniques studied in Education 3254 to teaching the subject; lesson plans, units and tests in using methods, techniques, and materials in the subject; planned experiences

and weekly assignments in neighboring secondary schools to observe, assist teachers, and teach pupils in the subject. * (3 cr) *Sem 1. Prereqs: EDU 2201, 2202, 3251, 3254.*

Enrollment in the English or communication certification program.

EDU 4282 Methods of Teaching Foreign Language in Secondary Schools

The curriculum, planning units and lessons in the teaching area; general methods of teaching, special methods, and instructional materials in the subject, including textbooks, courses of study and reference works; application of the principles and techniques studied in Education 3254 to teaching the subject; lesson plans, units and tests and in using methods, techniques, and materials in the subject; planned experiences and weekly assignments in neighboring secondary schools to observe, assist teachers and teach pupils in the subject.* (3 cr) *Sem 1. Prereqs: EDU 2201, 2202, 3251, 3254. Enrollment in a foreign language certification program.*

EDU 4283 Methods and Materials of Teaching Mathematics in Secondary Schools

The curriculum, planning units, and lessons in the teaching area; general methods of teaching special methods, and instructional materials in the subject; including textbooks, courses of study and reference works; application of the principles and techniques studied in Education 3254 to teaching the subject; lesson plans, units and tests and in using methods, techniques, and materials in the subject; planned experiences and weekly assignments in neighboring secondary schools to observe, assist teachers and teach pupils in the subject. * (3 cr) *Sem 1. Prereqs: EDU 2201, 2202, 3251, 3254. Enrollment in the mathematics certification program.*

EDU 4284 Methods and Materials of Teaching Science in Secondary Schools

The curriculum, planning units, and lessons in the teaching area; general methods of teaching special methods and instructional materials in the subject; including textbooks, courses of study and reference works; application to the principles and techniques studied in Education 3254 to teaching the subject; lesson plans, units and tests and in using methods, techniques, and materials in the subject, planned experiences and weekly assignments in neighboring secondary schools to observe, assist teachers and teach pupils in the subject. * (3 cr) Prereqs: EDU2201, 2202, 3251, 3254. Enrollment in a science certification program.

EDU 4285 Methods of Teaching Social Studies in Secondary Schools

The curriculum, planning units, and lessons in the teaching area; general methods of teaching, special methods, and instructional materials, in the subject, including textbooks, courses of study and reference works, application of the principles and techniques studied in Education 3254 to teaching the subject, practice in preparing lesson plans, units and tests and in using methods, techniques, and materials in the subject; planned experiences and weekly assignments in neighboring secondary schools to observe, assist teachers and teach pupils in the subject.* (3 cr) Prereqs: EDU 2201, 2202, 3251, 3254. Enrollment in the social studies program.

EDU 4290 Philosophy of Education The development of a sound personal philosophy

of education and practice in applying that philosophy to current educational issues.

(3 cr) Sem 1&2. Elective for all Seniors; one semester

EDU 4291 Student Teaching Observation and teaching under actual classroom conditions in the student's field of teaching specialization; open only to students of the Senior year who have completed all the subject matter courses in the field of specialization. * (12 cr)

Sem 1&2. Prereqs: Approval of the Director of Student Teaching, EDU 2201, 2202, 3251, 3254, and one of the following: EDU 4281, 4282, 4283, 4284, 4285; Coreq, EDU 4292.

EDU 4292 Senior Seminar The student teaching experience; elements of school law; current educational issues; use of computers in the classroom; relationship of practice to theory; sharing of experiences, common problems and alternative teaching practices; open to student teachers. * (3 cr) Sem 1&2.

Prereqs: approval of the department Chairperson, EDU 2201, 2202, 3251, 3254, and one of the following: EDU 4281, 4282, 4283, 4284, 4285; coreq, EDU 4291; one semester.

EDU 4301 Humanistic Education

Principles of humanistic psychology as they apply to education: Active listening, kinesics, values clarification, motivation, classroom groups, and the teacher as a group facilitator. (3 cr) Sem 1. Prereq: education majors and students in other departments who have been accepted into the Teacher Education Program

HUMAN SERVICES PROGRAM

The Human Services program is designed for students who desire a degree in liberal

arts while pursuing a course of study which includes an experiential component as well as training for a specific career. Specialization within the program will allow the student to concentrate on specific areas related to government and human service agencies.

MAJOR: The requirements for a major in Human Services include the courses listed below in addition to Psychology 1000, 2200, 2500, 2600, and elective; Sociology 1000, 2200, 3600, 2300, and an elective which lead to a minor in Psychology and Sociology, respectively.

MINOR: A minor in Human Services requires a total of 15 credits. Distribution requirements are: H S 2000, H S 2100, H S 3000, H S 3100. An additional three credits must be earned from one of the following: H S 3500, H S 3600 or HS 3700.

H S 2000 Introduction: Principles and Survey of Practice The role of the human services worker as helper and interviewer in different agency settings. Designed to increase the student's awareness of his or her needs, impact on other persons, and the demands of the environment. **(3 cr)** *Sem 1.*

H S 2100 Assessment and Referrals Content and process of doing an individual assessment; the referral process. **(3 cr)** *Sem 2.*

H S 3000 Laboratory in Communication Skills The basic skills needed to function in a helping relationship. Role playing, audio or video taping and counseling in a controlled setting. **(3 cr)** *Sem 1.*

H S 3100 Laboratory in Group Dynamics The human services worker needs interaction in a group setting; and theories and techniques of group counseling. A group counseling experience will be a part of the course. **(3 cr)** *Sem 2.*

H S 3500 Gerontology The aged and the aging process from a psychological and sociological perspective; recent trends and services; attitudes and behaviors typically seen in this population. **(3 cr)** *Sem 1.*

H S 3600 Life Skills Planning Determination of personal and professional life goals from the perspective of one's own strengths and weaknesses. Helping others in the process of selecting career paths and developing self and peer helping skills. Recommended for undergraduate students interested in the decision-making factors in career selections. **(3 cr)** *Sem 1&2.*

H S 3700 Human Service Systems Organizational structures, trends, and influences that impact Human Services Systems. Special emphasis upon managed care and case management as well as Human Resource Development. **(3 cr)** *Sem 1.*

H S 4000 Seminar in Human Services Integration of the theoretical and practical aspects of the student's program. **(3 cr)** *Sem 2. Prereqs: H S 2000, 2100, 3000, 3100.*

H S 4100 Practicum in Human Services Application of human service skills gained in the program through volunteer service in a community organization and structured peer counseling. The on-campus seminar will focus on tapes and case study material. **6 cr)** *Sem 2. Prereqs: senior standing, H S 4000. Majors only.*

ENGLISH

Chair and Professor: Cherry

Professors: Delano, McDiarmid, Murphy, Nolan, Pulsiano, Sherry, Thomas, Wilkinson

Associate Professors: Berthold, Hagen, Kinney,

Kirschke, Murphy, Ormsby-Lennon, Radcliffe, Schwarz

Assistant Professors: Bader, Blimm, Hicks, Hollis, Irwin,

Lytel-Murphy, Sewell, Shoet, Wood

Instructors: Bonds, Lucky

Office: 402 St. Augustine Center, tel. 519-4630

MAJOR: Thirty-three hours in advanced English courses (numbered 2000 or above) in the junior and senior years, including:

- ? Two courses in British literature pre-1800 from two of three areas: (1) Medieval; (2) Renaissance (to 1649); (3) Restoration and Eighteenth Century.
- ? One course in American literature to 1900 or one course in nineteenth-century British literature.
- ? One course in American literature or British/Irish literature after 1900.
- ? Senior Seminar
- ? Six electives

A student who takes a course in nineteenth-century British literature must complete a course in American literature after 1900; conversely, a student who takes a course in American literature up to 1900 must complete a course in British/Irish literature after 1900. A student who takes a course in American literature after 1900 must complete a course in nineteenth-century British literature; conversely, a student who takes a course in British/Irish literature after 1900 will be required to complete a course in American literature to 1900.

British Literary Tradition 1 and 2 (2101, 2102) and *American Literary Tradition 1 and 2* (2103, 2104) are not required for the major, but can operate as free electives, with a maximum of two permitted toward the major (including any survey course taken as a Core literature requirement).

MINOR: Fifteen hours including:

- ≠ At least one course from the British literature offerings (3000 level courses).
- ≠ At least one course from the American literature offerings (4000 level courses)
- ≠ At least three electives from the English departmental offerings (2000 to 4999)

College of Liberal Arts and Sciences

ENGLISH AS A SECOND LANGUAGE: English 0990 (ESL 1), and English 0095 (ESL 2). For those foreign students who need to strengthen their oral and verbal skills in English, The ESLP provides two courses ENG 0990 and ENG 0095, the courses will concentrate on improving students= basic grammar, as well as their pronunciation, conversation, reading comprehension, and writing skills.

ENG 0990 English as a Second Language I

Specialized instruction for students in the fundamentals of English. **(3 cr)**

ENG 0995 English as a Second Language II

A continuation of English 0990. **(3 cr)**

ENG 1010 Composition In this Writing Intensive course, students concentrate on the writing process to produce expository prose that demonstrates analytical thinking skills and the ability to use direct and concise language for effective communication. **(3 cr)**

ENG 1050 The Literary Experience An introduction to literature and the methods of literary analysis founded upon close readings of texts from a variety of perspectives and including works from a range of genres and periods. The course is designed to instill within the student a sense of critical confidence through approaches of increasing complexity, from a mastery of the text to an understanding of the broader historical and philosophical forces in the literary work; the course thus addresses the interdisciplinary awarenesses central to the new Core. Individual courses may vary in the works chosen; all courses are writing intensive. **(3 cr)**

ENG 2000 Advanced Expository Writing

Practice in writing reports, reviews, arguments, description; emphasis on organization and development. *Limited to 15 students.* *Permission of instructor required.* **(3 cr)**

ENG 2005 The Writing of the Short Story

Instruction in writing short story. *Limited to 15 students. Permission of instructor required.* **(3 cr)** *Sem 1&2.*

ENG 2006 The Writing of Poetry

Instruction in writing poetry. *Limited to 15 students.* *Permission of instructor required.* **(3 cr)**

ENG 2007 The Writing of Screenplays

Instruction in writing screenplays. *Limited to 15 students.* *Permission of instructor.* **(3 cr)**

ENG 2008 The Writing of Plays

Instruction in writing plays. *Limited to 15 students.* *Permission of instructor required.* **(3 cr)**

ENG 2010 Technical Writing

The writing of formal reports and proposals and descriptions of mechanisms and processes. **(3 cr)**

ENG 2020 Interpretive Journalism

News gathering and news writing; principles, rules and techniques of news, editorials, features. A practicum with lectures. Use of computers and word processing. **(3 cr)** *Limited to 20 students. Permission of instructor required*

ENG 2021 The Press and Society, The Print Media in a Democracy

The functions of the media; examination of newspapers and organization; investigative journalism, in-depth reporting; analysis of news and ethics in reporting; canons of journalism. Practicum with lectures. Assignments outside of class. **(3 cr)** *Prereq: ENG 2020.*

ENG 2030 Tutoring Writers

Theory and practice of Writing Center Work; writing, editing and tutoring skills. **(3 cr)**

ENG 2040 Literacy and Society

The social implications of reading and writing. **(3 cr)**

ENG 2101 British Literary Tradition 1 A study of the growth of British literature from the Anglo-Saxon to the Neo-Classical periods. (3 cr)

ENG 2102 British Literary Tradition 2 A study of British literature from the genesis of Romanticism in the 19th century to the literature of modern times. (3 cr)

ENG 2103 American Literary Tradition 1 The development of American literature from the Colonial Period to the era of Walt Whitman and other writers whose lives and works largely precede the Civil War. (3 cr)

ENG 2104 American Literary Tradition 2 The development of American literature from the Civil War to modern times. (3 cr)

ENG 2200 The History of the English Language The development of the English language from Old English to Modern English. (3 cr)

ENG 2250 Introduction to Literary Criticism Principles of the study of literature; its intellectual and historic principles, technical terms and cultural implications. (3 cr)

ENG 2300 Women in Literature Study of the place of women in literature, with emphasis on modern fiction, drama and poetry written in English. (3 cr)

ENG 2301 The Literature of Science Fiction Science fiction as a significant genre. (3 cr)

ENG 2310 The Study of Poetry Concepts of poetry with detailed analyses of selected poems. (3 cr)

ENG 2320 The Forms of the Novel The nature of the novel as an art form in British, American, and European works. (3 cr)

ENG 2330 The Forms of the Drama Introduction to the main types of European and American drama. (3 cr)

ENG 2340 The Modern Short Story Contributions to the short story form made by American, Irish, British, and Continental writers. (3 cr)

ENG 2400 Western World Literature 1 Readings in translation of some of the classics written by Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Aristotle, Dante, Moliere, Corneille, Goethe, Turgenev, Dostoevski, and Chekhov. (3 cr)

ENG 2401 Western World Literature 2 Readings, chiefly in translation, of some of the classics of Western literature from the Enlightenment to today, by such writers as Moliere, Voltaire, Goethe, Flaubert, Tolstoy, Ibsen, Brecht, Kafka, and Pirandello. (3 cr)

ENG 2450 Irish Literature to 1800 A study of Irish literature from its origins in the world of Celtic mythology, epic and saga through the development of Anglo-Irish literature. (3 cr)

ENG 2460 Irish Poetry Since Yeats The major Irish poets of the last fifty years, including an initial assessment of the importance of W. B. Yeats's career, and treatment of poets such as Seamus Heaney, Derek Mahon, Thomas Kinsella, and John Montague. (3 cr)

ENG 2470 Modern Irish Drama Major Irish playwrights of the twentieth century, including yeats, Lady Gregory, Shaw, Synge, O'Casey, Beckett, and Friel. (3 cr)

ENG 2500 The Irish Renaissance Selected readings in the drama and fiction literature of Ireland in the 20th century. (3 cr)

ENG 2505 African-American Literature: Poetry The poetry of Wheatley, Harper, Dunbar, Johnson, Hughes, Brooks, Sanchez, Giovanni, Angelou, Harper, Dove, and other writers of the 18th, 19th, and 20th centuries. (3 cr)

ENG 2510 African-American Literature: Novel Novels published during Reconstruction, the Harlem Renaissance, the Black Arts Movement, and throughout the 20th century. (3 cr)

ENG 2515 African-American Literature: Drama Major Works of the Harlem Renaissance, the Black Arts Movement, and the present. (3 cr)

ENG 2520 African-American Literature: Short Story Short fiction by Chesnutt, Hurston, Petry, Baldwin, McPherson, Williams, Walker, Morrison, Butler, and other writers of the 20th century. (3 cr)

ENG 2610 Tutorial Readings Program of approved readings under the supervision of a selected faculty member; examination on readings and a lengthy paper required. Restricted to senior English majors with high cumulative averages. Permission of chair required; ordinarily may not be repeated. (3 cr)

ENG 2620 Seminar: Individual Authors or Topics Individual authors or topics chosen by the instructor. *Limited to 20 students.* (3 cr)

ENG 2700 Studies in Literature Specific topics vary each semester. *Limited to 20 students.* (3 cr)

ENG 2993 Internship (3 cr) *Prereq:* ENG-2020.

ENG 2996 Internship (6 cr) *Prereq:* ENG-2020.

ENG 3000 Introduction to Old English Language and Literature Old English literary works in translation and original language. (3 cr)

ENG 3100 Anglo-Saxon Literary Culture Material and cultural artifacts of the period ca. 450-1066 within historical, art-historical, archaeological, and literary contents (works in Translation). (3 cr)

ENG 3101 Early British Literature in Translation Literature of England, Ireland, and Scotland from the beginnings through the 15th century. (3 cr)

ENG 3150 Chaucer The *Canterbury Tales*, *Troilus and Criseyde*, and additional works. (3 cr)

ENG 3200 Seminar: Studies in Medieval Literature Topics vary each semester. Consult departmental bulletin. (3 cr)

ENG 3201 The English Renaissance Non-dramatic literature of the English Renaissance. (3 cr)

ENG 3230 Elizabethan and Jacobean

Drama Playwrights of the English Renaissance excluding Shakespeare. (3 cr)

ENG 3250 Shakespeare A selection of plays by Shakespeare. (3 cr)

ENG 3300 Seventeenth-Century Poetry and Prose The poetry of Donne, Jonson, Lanyer, Herrick, Herbert; essays, sermons, journals, letters, pamphlets of Bacon, Donne, Milton, and others. (3 cr)

ENG 3350 Milton English poems and selected prose on issues of gender, politics, religion, culture. (3 cr)

ENG 3420 Eighteenth-Century British Novel Writings by Defoe, Fielding, Sterne, and others; and the Gothic novel of terror. (3 cr)

ENG 3430 Restoration and Eighteenth-Century Drama Dramatists from Dryden to Sheridan. (3 cr)

ENG 3450 Dryden, Swift, and Pope The study of the principal works of the major Neo-Classical writers. (3 cr)

ENG 3501 Early Romantic Writers Wordsworth, Coleridge, Blake and other writers of the first half of the Romantic period. (3 cr)

ENG 3502 Later Romantic Writers Byron, Shelley, Keats and other writers of the second half of the Romantic period. (3 cr)

ENG 3505 Nineteenth-Century Poetry and Prose, 1830-1865 The poetry and prose of Carlyle, Tennyson, Browning, Newman, Arnold, and other writers of the era. (3 cr)

ENG 3506 Nineteenth-Century Poetry and Prose, 1865-1900 The poetry and prose of Ruskin, Rossetti, Swinburne, Hopkins, Pater, Hardy, and others. (3 cr)

ENG 3520 The Nineteenth-Century British Novel Selected novelists from Jane Austen to Thomas Hardy. (3 cr)

ENG 3525 Dickens Selected novels by Charles Dickens. (3 cr)

ENG 3610 Modern British Poetry British poetry from 1900 to the present, with emphasis on Hopkins, Hardy, Yeats, Eliot, Auden, Muir, Edith Sitwell, Dylan Thomas, and Philip Larkin. (3 cr)

ENG 3615 James Joyce A study of the novels and short stories of James Joyce, with concentration on *Ulysses*. (3 cr)

ENG 3616 Irish American Drama and Film Depictions of the American Irish in popular drams and films from colonial times to the present. Popular Irish-American actors and their appeal, the Irish-American musical stage tradition, and the cross-over from popular drama to popular films such as John Ford's *The Quiet Man* and *The Informer*. (3 cr)

ENG 3620 The Modern British Novel The British novel from the turn of the century to World War II. (3 cr)

ENG 3621 The Contemporary British Novel The development of the novel since World War II. (3 cr)

ENG 3630 Modern British Drama British drama from the 1890s to the Theatre of the Absurd. (3 cr)

ENG 4001 Major American Writers I The masterpieces of selected American writers from early times to the Civil War era. (3 cr)

ENG 4002 Major American Writers II Masterpieces of the chief American writers since the Civil War. (3 cr)

ENG 4040 The American Short Story Development of the short story in America from Washington Irving to the present. (3 cr)

ENG 4500 American Slave Narrative Slavery as a central paradox of American history and literature with emphasis on race and gender. Readings by Douglass, Brent, Stowe, Morrison, and others. Previous course work in American literature is recommended. (3 cr)

ENG 4501 New England Transcendentalism An intensive analysis of Emerson, Thoreau, and other Transcendentalists. (3 cr)

ENG 4510 Nineteenth-Century American Poetry American poetry from its beginning to Emily Dickinson. (3 cr)

ENG 4520 The American Novel to 1895 The genesis of the American novel. (3 cr)

ENG 4530 The American Renaissance Pre Civil War texts, primarily from 1850-1855. (3 cr)

ENG 4605 American Poetry: 1900-1950 American poets of the first half of the twentieth Century, including Robinson, Frost, Stevens, Cummings, Williams, Millay, Pound, Eliot, and others. (3 cr)

ENG 4615 American Poetry Since 1950 American poets since 1950, including Lowell, Plath, Sexton, Snodgrass, Ginsberg, Rich, Snyder, Baraka, and others. (3 cr)

ENG 4619 The Works of Edith Wharton Socio-sexual tensions in the world of Edith Wharton. The external world she knew: upper class New York society, its totems and taboos, tribal aspects, and sexual tension; and the internal world of Wharton herself with its repressive sexuality and psychological complexities. (3 cr)

ENG 4620 The American Novel: 1895-1950 Representative novelists from Crane to Steinbeck. (3 cr)

ENG 4621 The American Novel Since 1950 Novels of the late Modern Period and of the early Post-modern period. (3 cr)

ENG 4630 Twentieth-Century American Drama Major plays of the period. (3 cr)

ENG 4635 Contemporary American Poetry Focused study of contemporary American poetry emphasizing gender, ethnicity, aesthetic principles or genre. (3 cr)

ENG 4636 Contemporary American Women's Poetry The work of American women poets from the last forty years. (3 cr)

ENG 4640 Contemporary American Women's Literature Writings by women from WW II to the present. Works by Ann Petry, Maxine Hong Kingston, Toni Morrison, Joyce Carol Oates, Kathy Acker, Bobby Ann Mason, and others. (3 cr)

ENG 4645 Postmodern American Fiction

Experimental narratives by American writers of the last four decades. Works by Vladimir Nabokov, Thomas Pynchon, Ishmael Reed, Don DeLillo, Joanna Russ, and others. **(3 cr)**

ENG 5000 Senior Seminar Capstone experience combining immersion in primary and secondary materials with an intensive writing experience. Limit of 15 students. **(3 cr)**

ENG 4646 Race and Ethnicity: American

Novel Introduction to a variety of canonical texts that treat questions of race and ethnicity. The critical role language and literature play in determining how racial categories are constructed and deconstructed. **(3 cr)**

ETHICS

Director: Wall

Office: 105 St. Augustine Center, tel. 519-4600

The University believes that issues of ethics and values are at the heart of every human endeavor. In addition to regular requirements in the sciences and humanities, the College of Liberal Arts and Sciences and the College of Commerce and Finance require each student to take a special multidisciplinary course in ethics, typically in the sophomore year. The purpose of this course is to give students the opportunity to examine and discuss both ethical theories and their applications to contemporary moral issues. This course is designed to contribute to the implementation of Villanova's mission statement which states that, as a Catholic institution Villanova both emphasizes the values of the Jewish and Christian humanistic traditions and concerns itself with all value systems.

CONCENTRATION: The Ethics Concentration offers students an opportunity to pursue in-depth an intellectual discipline that studies human character and conduct. Each student in the concentration selects one of four tracks and takes ETH 2050, two required track courses, two additional electives from that track, and ETH 3000. Concentrators must also fulfill the service requirement.

Service component: a minimum of 100 hours of approved service, including work with the poor or otherwise marginalized members of our society and/or work related to building a sustainable world environment. This component affords students the opportunity to engage in practical moral inquiry. The student, in conjunction with the program director, will arrange and design the service with the goal of enhancing comprehension of applied ethical issues in the track selected by the student.

TRACKS:

Villanova University

A. Ethics and Health Care

REQUIRED TRACK COURSES:

PHI 2115 Ethics for Health Care Professionals
THL 4200 Ethics of Life and Death or THL
5950 Death and Dying

TRACK ELECTIVES:

BIO 3341 Genetics
BIO 3905 General Microbiology
NUR 4130 Issues in Health Care Delivery
NUR 4800 Women's Health Issues
NUR 4802 Issues and trends in Gerontology
PHI 2125 Death and Dying
PHI 3525 Philosophy of Human Sexuality
PHI 2950 Topic in Philosophy: Feminism,
Ethics and Medicine
THL 4100 Christian Ethical Traditions and
Contemporary Life

B. Ethics, Politics and Law.

REQUIRED TRACK COURSES:

PHI 3650 Philosophy of Law
PJ 5000 Meanings of Justice

TRACK ELECTIVES:

PHI 2140 Philosophy of Criminal Justice
PHI 2130 Business Ethics
PJ 5100 Discrimination, Justice and the Law
PSC 3500 Civil Rights and Civil Liberties
PSC 3800 Environmental Law
SOC 3000 Criminology
SOC 3010 Crime and Criminal Justice
THL 4300 Ethical Issues in Peace and Justice
THL 4600 North/South: Development Ethics

C. Ethics, economics, and public policy.

REQUIRED TRACK COURSES:

ECO 4207/PJ 5200 Poverty and the American
Economy
THL 4320 The Social teachings of the
Christian Churches

TRACK ELECTIVES:

PHI 1600 Business and Society
PHI 2130 Business Ethics
PHI 2400 Social and Political Philosophy
PHI 3820 Environmental Ethics
PHI 2410 Ethics of War
PHI 2170 Ethical and Social Issues in Mass
Media
PHI 2150 Engineering Ethics
PJ 2500 Education and Social Justice
PJ 2400/THL 4350 Service and Education for
Justice
PJ 3400/THL 4310 War and Morality
PJ 5400/THL 4340 Ethics, Justice and the
Family
PJ 5000 The Meaning of Justice
PJ 2600 Catholic Social Thought and Analysis
PSC 2600 Public Policy
PSC 3800 Environmental Law and Regulation
PSC 3500 Civil Rights and Civil Liberties
THL 4600 North/South: Development Ethics
THL 4300 Ethical Issues in Peace and Justice

D. Ethics, Science, Technology, and
Environment.

REQUIRED TRACK COURSES:

PJ 2200 Caring for the Earth
PHI 3820 Environmental Ethics

TRACK ELECTIVES:

BIO 3255 Introductory Ecology
BIO 3351 Genetics
ECO 1104 The Environment and the Economy
HIS 3321 Science and Technology in Modern
History
PHI 2180 Ethical Issues in Computer Science
PHI 3825 Technology and Society
PHI 4050 Philosophy of Natural Science
PHI 2430 Eco-Feminism
PHI 2150 Engineering Ethics
PHI 2950 (Topics in Philosophy) Philosophy
of Biology

College of Liberal Arts and Sciences

PSC 3800 Environmental Law and Regulation
THL 4600 North/South: Development Ethics

THL 5400 Science and Religion

ETH 2050 Ethics Major Western ethical traditions as they apply to selected contemporary ethical problems, with special consideration of Jewish and Christian perspectives. Satisfies the Arts and Sciences Writing Enriched requirement. **(3 cr)**

meet one hour each week for reflection/critique of required service commitment. **(1 cr)**
Permission of the instructor.

ETH 2051 Service Learning Practicum
Ethics Service Learning Practicum that will

ETH 3000 Integrating Seminar: This is a capstone course which integrates many of the themes of the concentration. It is required for all concentrators in addition to the course requirements listed above. **(3 cr)**

GENERAL ARTS PROGRAM

Director and Professor: Schrems

Office: 451 St. Augustine Center, tel. 519-4661

MAJOR: The General Arts major is an interdisciplinary major within the College of Liberal Arts and Sciences. Students in the program select a General Arts concentration in one of the following areas: (1) Humanities, (2) Social Sciences, or (3) Independent Studies. Within the selected concentration the student plans a course of study which cuts across normal academic lines.

GENERAL REQUIREMENTS: A minimum of eight advanced courses must be chosen for the General Arts major. Courses which may not be used for the major in General Arts include all courses numbered from 1000 to 1999 (except AAH) as well as certain specific courses numbered 2000 and above found listed in the Enchiridion or at the Office of Special Programs. The General Arts degree may not be part of a double major. The normal fourth Core Writing Intensive course is satisfied with the General Arts Seminar (GEN 5001). Under special circumstances outlined by the Director and upon written request a student may substitute a research project (GEN 6001) for the seminar.

The Elementary Education certification program is coordinated through the General Arts office. Incorporated into General Arts major may be such specialized concentrations as Africana Studies, Arab and Islamic Studies, Criminal Justice, Irish Studies, Latin American Studies, Russian Area Studies, Peace and Justice, and Women's Studies. Other concentrations of the student's own making are possible, and are commonly pursued within the major.

CONCENTRATIONS:

1. *The Humanities Concentration:* (1) seven non-excluded upper level electives beyond the core requirements from within the following disciplines: Art History, Classical Studies, Communication, Education, English, French, German, History, Peace and Justice, Philosophy, Religious Studies, Spanish, Theatre, and appropriate Honors courses; (2) the General Arts Seminar (GEN 5001).
2. *The Social Sciences Concentration:* (1) seven non-excluded upper level electives beyond the core requirements from within the following disciplines: Criminal Justice, Economics, Geography, Political Science, Psychology, Sociology, and appropriate Honors courses; (2) the General Arts Seminar (GEN 5001).
3. *Independent Studies Concentration:* (1) seven non-excluded upper level electives beyond the core requirements from within a combination of the humanities and social sciences. This affords the student freedom to define an intellectually challenging and coherent program. Students interested in this concentration submit to the Director of General Arts an essay describing the goals and proposed program of study. With the approval of the Director and in cooperation with the student, a faculty mentor will be assigned. (2) Unless waived in lieu of a special seminar or research project (GEN 6001) the student must also take the General Arts Seminar.

College of Liberal Arts and Sciences

GEN 1903 Internship Elective Permission of Program Director. Junior or seniors with a 3.0 overall QPA only. **(3 cr)** *Sem 1&2.*

GEN 1906 Internship Elective Permission of Program Director. Juniors and seniors with 3.0 overall QPA only. **(6 cr)** *Sem 1&2.*

GEN 1909 Internship Elective Permission of Program Director. Juniors and seniors with a 3.0 overall QPA only. **(9 cr)** *Sem 1&2.*

GEN 2993 Internship Credits may be applied to requirements for the major in General Arts in the required General Arts elective slots. Permission of Program Director. Juniors and seniors with an overall QPA of 3.0 only. **(3 cr)** *Sem 1&2.*

GEN 2996 Internship Credits may be applied to requirements for the major in

General Arts in the required General Arts elective slots. Permission of Program Director. Juniors and seniors with an overall QPA of 3.0 only. **(6 cr)** *Sem 1&2.*

GEN 5001 General Arts Seminar Integrative seminar dealing with the relation of the social sciences and the humanities. May be viewed as similar to a **Core Seminar III** combining ancient, modern, and contemporary thought. **(3 cr)** *Sem 1.*

GEN 6001 Research Individual students with specific interdisciplinary study projects will work with a particular professor on a tutorial basis. Students must have senior status. The final research paper must be approved by the professor and the director. **(3 cr)** *Sem 1.*

GEOGRAPHY

Chair and Associate Professor: Leaman

Assistant Professors: Hu

Office: 304 St. Augustine Center, tel. 519-4640

The geography major focuses on the interaction of human and physical environments within a spatial context. Individual programs are formed around major geographic problems and world regions. The department offers course work in four areas (1) human systems analysis; (2) geographical techniques; (3) regional analysis; and (4) environmental analysis. Students are encouraged to explore closely related academic fields and interests.

MAJOR: At least 24 credits in geography. The distribution of these credits is: GEO 1000 introductory courses (6 credits); GEO 3000 regional courses (3 credits); GEO 4000 techniques courses (3 credits); GEO 6000 seminar and independent study courses (3 credits); and 9 credits for any combination remaining of the 1000, 2000, 3000, 4000, 5000, and 6000 series courses.

Majors and Minors who meet certain academic standards are eligible for membership in The Eta Lambda chapter of Gamma Theta Upsilon, the International Geography Honors Society, which annually sponsors activities, lectures and field trips. Internships designed for geography majors are also available.

MINOR: Requirements are: GEO 1000 introductory courses (3 credits); GEO 3000 regional courses (3 credits); and 9 credits from any combination of the 1000, 2000, 3000, 4000, 5000, and 6000 series courses.

INTRODUCTORY COURSES

GEO 1001 International Approaches to Geography The human and physical realms of Geography. Focus on current geographic problems facing specific regions of the world. (3 cr) *Sem 1&2.*

GEO 1500 Physical Geography World climates, water, landforms, soil, and vegetation form the basis of this global environmental approach. (3 cr) *Sem 1&2.*

GEO 1700 Cartography From the concept of mental mapping to computer cartography,

integrated with a series of hands-on map-making experiences. (3 cr) *Sem 1&2.*

HUMAN SYSTEM ANALYSIS

GEO 2000 Political Geography Spatial attributes of political process and structure, with an emphasis on current geo-political issues in the world. (3 cr)

GEO 2100 Economic Geography Locational analysis of the major agricultural, manufacturing, and service industries in an increasing interdependent world. (3 cr) *Sem 1&2.*

GEO 2200 Urban Geography The location, structure, functions and growth problems of cities; possible solutions for preserving or restoring a livable urban environment. (3 cr) *Sem 1&2.*

GEO 2300 Population Geography Spatial patterns of human population; population size, growth, and characteristics; vital statistics, projection and forecasting techniques, the relationship of population to environmental problems. (3 cr) *Sem 2.*

REGIONAL ANALYSIS

GEO 3500 North America The physical and cultural environments of the United States and Canada. (3 cr) *Sem 1.*

GEO 3600 Europe The strengths and weaknesses and the human and natural resources of Europe and the Common Market. (3 cr)

GEO 3700 Africa Major geographic problems facing contemporary Africa, with a special emphasis on spatial planning within a number of national contexts. (3 cr) *Sem 1&2.*

GEO 3800 Geography of the Islamic World
The physical environments and life patterns of the Islamic peoples in Asia and Africa. The historical and contemporary interrelationship between the Islamic World and the West. (3 cr)

GEO 3900 Asia A regional study of physical environment, culture and development of Asia. (3 cr)

GEOGRAPHICAL TECHNIQUES

GEO 4050 Air Photo Interpretation

Basic skills necessary to identify a variety of phenomena on aerial photographs employing a number of film types. (3 cr) *Sem 1&2.*

GEO 4101 Geographic Information Systems Principles and applications of Geographic Information Systems (GIS), with an emphasis on vector data structures and relational data base management systems. Pc-based GIS provides experience with methods to store, retrieve, manipulate and manage spatial and associated attribute information in solving geographic problems. (3 cr) *Sem 1&2.*

GEO 4250 Remote Sensing The technology used to produce reliable interpretive data about objects and environmental phenomena by recording, analyzing, and interpreting wave/force fields and patterns of transmitted, reflected, and emitted energy. New developments in imaging techniques, particularly those related to satellite, thermal infrared and radar sensor systems. (3 cr) *Sem 2.*

GEO 4300 Advanced Cartography The study and practical experience map production from conception to color proofing. Students design and execute maps of publishable quality. (3 cr) *Prereq: GEO 1700*

ENVIRONMENTAL ANALYSIS

GEO 5100 Resource Management and Conservation Problems and policies arising from the use and misuse of the environment; assessment of the consequences of applying various policies, and the development of an environmental/resource ethic. (3 cr)

GEO 5200 Geography of Land-Use Management Land-use decisions and policies: agricultural, recreational, nuclear,

urban, and industrial environments. (3 cr)

Sem 1.

GEO 5300 Disasters: Natural Hazards and Risk Assessment

Environmental hazards that threaten health and safety at national and global levels. Mechanics, distributions, risks, mitigation control and case histories for each major hazard: earthquakes, tsunamis, volcanoes, coastal erosion, avalanches, tornadoes, hurricanes, flooding, and subsidence.

(3 cr) *Sem 2.*

SEMINARS AND
INDEPENDENT STUDY

GEO 6000 Geography Seminar Student research on the historical development of geographic thought. (3 cr) *Sem 1&2. Prereq: Permission of Instructor.*

GEO 6001 Seminar in Geographic Education

Readings on teaching and learning, historic and contemporary, with emphasis on geographic education. Students assist in some lower division courses and evaluate teaching philosophies and methodologies. Restricted to geography majors. (3 cr)

GEO 6100 Geography Seminar

Student research on trends in current geographic literature. (3 cr) *Prereq: Permission of Instructor.*

GEO 6200 Independent Study

Individual projects or studies in geography. (3 cr) *Sem 1&2. Prereq: Permission of Instructor.*

HISTORY

Chair and Associate Professor: Lindenmeyr

Professor: Bergquist, Greene

Associate Professors: Burke, Gallicchio, Haas, Johnson, Keita,
Kiley, Koven, McLaughlin, Schweitzer

Assistant Professors: Dorley, Ener, Little, Mires, Ryan, Sullivan, Winer

Office: 403 St. Augustine Center, tel. 519-4660

MAJOR: HIS 1050 plus 27 additional credits in history including: HIS 5501 or HIS 5515 (Independent Research); at least six credits in United States history--1000 and 1001 or 2000 level courses; at least six credits in European history (ancient, medieval, modern)--1020 and 1021 or 3000 level courses; and at least three credits in Latin American, Middle Eastern, African, or Asian history--4000 level courses. One of the European history courses must be in a period before 1750.

MINOR: At least 18 credit hours in history. For students in the College of Liberal Arts and Sciences, the 18 credit hours must include HIS 1050.

HIS 1000 The United States to 1877

American colonial beginnings, the Revolution, formation of the new nation, Jeffersonianism and Jacksonianism, expansion, the slavery crisis, the Civil War and Reconstruction. Fulfills Arts and Sciences core history requirement for Education majors only. (3 cr)
Sem 1.

HIS 1001 The United States since 1877 The settlement of the West, industrialization, agrarian and labor unrest, Progressivism, the New Deal, the two world wars, the Cold War, recent domestic and international problems. Fulfills Arts and Sciences core history requirement for Education majors only. (3 cr)
Sem 2.

HIS 1020 History of Western Civilization I

Formation of Western Civilization from the Ancient World through the mid-seventeenth century. Emphasis on the interaction of the classical, Christian, and Germanic elements in

the formation of medieval and early modern Europe. Does not fulfill Arts and Sciences core history requirements. (3 cr)

HIS 1021 History of Western Civilization

II Evolution of the West in the world from the mid-seventeenth century to the present with attention to cultural and social themes as well as political and international developments. Does not fulfill Arts and Sciences core history requirements. (3 cr)

REQUIRED HISTORY SURVEY

HIS 1050 Themes in Modern World

History Major historical moments and themes in the political, economic, and cultural transformation of diverse nations and regions of the world during the past several centuries. A topical and interpretive approach designed to provide a historical and cross-cultural context while exploring the origins and implications of the changes that have come to

characterize the "modern" world. (3 cr)
Sem 1&2.

HIS 1903 History Department Internship

An internship in an elective area of concentration. (3 cr)

HIS 1909 History Department Internship

A more extensive internship in an elective area of concentration (9 cr)

NORTH AMERICAN CIVILIZATION

HIS 2151 Colonial America The political, economic, social, and intellectual life of the American colonies and the clash of racial and ethnic groups in America to 1763. (3 cr)

HIS 2161 Revolutionary and Federalist

America The forces that brought about the American Revolution; the successes and failures of the Confederation government; the domestic and foreign problems of the Federalist era to 1800. (3 cr)

HIS 2171 Early 19th Century America

The development of the Republic from the presidency of Jefferson through the Mexican War; the struggle of nationalism and sectionalism; the impact upon American life of an emergent democratic spirit, the ferment of reform, and Manifest Destiny. (3 cr)

HIS 2181 American Civil War and

Reconstruction The "irrepressible conflict"; its causes, progress, and termination; the settlement of the Reconstruction; the historiographic controversies to which the era has given rise. (3 cr)

HIS 2191 America in the Gilded

Age/Progressive Era, 1870-1920 Causes and results of industrialization and urbanization; responses to economic and social change,

including popular protest movements and governmental regulation; rise of an urban culture of consumption. (3 cr)

HIS 2201 The United States and Two

World Wars, 1914-1945 Major problems and domestic developments in the United States in World War I, the 1920s, the Great Depression and World War II. (3 cr)

HIS 2202 The United States since 1945

Major problems and domestic developments in the United States since 1945: reconversion, Cold War, the "Good Society" of the 1950s, turmoil of the 1960s, Vietnam War and its aftermath, contemporary challenges and problems. (3 cr)

HIS 2251 United States Foreign Relations

1776-1914 The completion of independence, hemispheric diplomacy, expansion, Civil War, and imperialism. (3cr)

HIS 2252 United States Foreign Relations

1914-Present Diplomatic history from World War I to the present, including involvement in European and Asian struggles, cooperation in international organizations. (3 cr)

HIS 2261 The Frontier in the History of

the United States Westward expansion from the American Revolution to 1900; the influence of expansion upon society, culture, and politics. (3 cr)

HIS 2265 American Military History to

1900 The wars of America from their European antecedents to 1900; relations between the military and society; role of the military in national development. (3 cr)

HIS 2272 American Economic History to

1880 The American colonial economy; the

economic causes and consequences of the American Revolution and the movement for a national constitution; the transportation revolution; the first industrial revolution; the beginnings of wage labor and workingmen's organizations; the transition to sustained economic growth; the separate economic system of the South and slavery; and the economic consequences of the Civil War. **(3 cr)**

HIS 2273 American Economic History since 1880 The American economy since 1880; urbanization; immigration; the decline of farming; the labor movement; the beginnings of government regulation; the effect of World War I on the economy; the deceptive prosperity of the 1920s; the stock market crash of 1929 and the Great Depression; the New Deal; the economic effects of World War II; post-war recovery; the Great Society; economic effects of the Vietnam War; stagflation; the Reagan years; and the national deficit. **(3 cr)**

HIS 2281 Immigration and Minorities in American History Population factors in the development of the American nation; the processes of migration, assimilation and intergroup relations and their effects in society and politics; intensive study of selected ethnic groups. **(3 cr)**

HIS 2286 Irish-American Saga Pre-famine Irish emigration to North America; the famine; post-famine movement; Irish-American labor, politics, urban and suburban developments. **(3 cr)**

HIS 2291 African American History during Slavery The forced migrations of Africans to the New World, the institution of slavery, and the struggle of Afro-Americans to gain equality in American society. **(3 cr)** *Sem 1.*

HIS 2292 African American History since the Emancipation Themes of resistance and creativity with the development of the African-American communities in the era following the Civil War. Reconstruction, Northern migration, Jim Crow and segregation, and protest thought and civil rights. **(3 cr)** *Sem 2.*

HIS 2296 Changing Roles of Women in American Society The variety of beliefs in America regarding the differences between the sexes, and the behaviors appropriate to each, from the seventeenth century to the present; gender within the context of changing forms of production, methods of social organization, and ideas about human nature and society. **(3 cr)** *Sem 1&2.*

HIS 2303 History of Philadelphia An investigation of the city's past and present through reading historical accounts and exploring today's city. Changes and continuity in politics, economy, and social composition from 1682 to today, paying particular attention to social structures and the changing physical environment of the city. **(3 cr)**

HIS 2306 The Culture of Industrializing America, 1820-1920 Cultural sources of American expansion and economic development; the effects of industrialization on patterns of life and thought and the responses of different groups to these changes. **(3 cr)**

HIS 2993 History Departmental Internship
An internship in a local historical archive, museum, park, or library. **(3 cr)** *Sem 1&2.*

HIS 2996 History Departmental Internship
A more extensive internship in a local historical archive, museum, park, or library. **(6 cr)**

Athens during the 5th and 4th centuries. (3 cr)

HIS 2998 Topics in American History

Selected topics in American history of interest to faculty and students. (3 cr)

GENERAL THEMES ON
EUROPE AND ITS RELATIONSHIP WITH
THE WORLD

HIS 3005 Individual and Community in the Ancient World, 3000 BC to AD 500

The formation of diverse Mediterranean societies and the emergence of the individual within those societies. Egypt, Mesopotamia, ancient Israel, and the broader Mediterranean cultures of Greece and Rome. (3 cr)

HIS 3006 Medieval Europe and its Neighbors, 500-1500 The evolution of the European West from its classical origins, the influence of Christianity upon the development of its institutions and culture, and relations and mutual influences of the European West with its neighbors, the new world of Islam in the Near East and North Africa, and the Christian Byzantine East of Europe and Russia. (3 cr)

HIS 3007 Early Modern Europe and Expansionism 1500-1750 The rise of Protestantism, the emergence of national monarchies, the growth of science and technology, colonial expansionism and the impact of the New World on the West, the clash of cultures with Islam and other civilizations on the peripheries. (3 cr)

EUROPEAN CIVILIZATION

HIS 3011 Greek Civilization from the Bronze Age to Philip II The rise of Greek civilization from Mycenaean times to the Macedonian conquest of Greece by the father of Alexander the Great: Homer, the emergence of the polis, the Persian and Peloponnesian wars, and the flowering of Greek culture at

HIS 3014 The Mediterranean World from Alexander to Caesar The interaction of cultural forces between the conquests of Alexander the Great and the consolidation of Roman rule under Caesar: Hellenistic civilization, the rise of Rome in Italy, Rome and the Greek world, and the fall of the Roman Republic. (3 cr)

HIS 3017 The Roman Empire The achievement of the Pax Romana from the reforms of Augustus to the break-up of the western Empire in the fifth century A.D. Topics treated include life in the provinces, the romanization of indigenous peoples, the legions and society, culture and decadence in the capital, and the rise of Christianity. (3 cr)
Sem 2.

HIS 3018 Pagans, Jews, and Christians in the Roman Empire Society and religion between Alexander the Great and the coming of Islam. The classical pantheon, domestic religion, magic, the imperial cult; the variety of Judaism in Palestine and the Diaspora, Judaism and the state; the rise of Christianity, the persecutions, Constantine and the conversion of the empire. (3 cr)

HIS 3019 The Fall of Rome: The world of Late Antiquity The end of the ancient world—ancient sources and modern theories. A multi-faceted analysis of Mediterranean society from AD 200 – 750: politics, economy, religion, urban life, art, social relations, and literature. (3 cr)

HIS 3095 Topics in Ancient History Selected topics in Ancient history of interest to faculty and students. (3 cr)

HIS 3101 Early Medieval History Europe from the fall of Rome to the end of the Viking Age. (3 cr)

HIS 3108 The Crusades The medieval conflict between the rival cultures and religions of Christendom and Islam. (3 cr)

HIS 3115 The High Middle Ages The major western European institutions that took form during the classical period of medieval civilization and were bequeathed to modern European society. (3 cr)

HIS 3121 The Renaissance The decline of society in the Late Middle Ages and the emergence of commercial capitalism; the disintegration of the Holy Roman Empire and the evolution of city-states and new monarchies in the fifteenth century; the crisis of the Papacy and the emergence of humanism; the Italian universities in the Late Middle Ages and the development of new tastes in literature, art, and architecture. (3 cr)

HIS 3131 The Reformation Catholic, Protestant, and popular reform theories and religious upheaval, and the revolution of the common people in the 16th century, with emphasis on the material "structures of everyday life" and the economic, social, and political background of the "crisis of feudalism" and critique of the church and early modern state. (3 cr)

HIS 3151 European Powers and Nationalism, 1815 to 1914 Emergence of nationalism as force in European affairs; the nature of nationalism; Italy, Germany, France, Great Britain, and Eastern Europe. (3 cr)

HIS 3161 Western Europe Since World War I Western Europe from the outbreak of the First World War to the present. (3 cr)

HIS 3200 Medieval Britain and Ireland The debts England owes to the Celtic, particularly the Irish, world; changed relations, from fruitful cultural exchange to antagonism, after the Norman Conquest of England. Irish missionary and educational importance; relations between Celtic peoples; why monarchy developed in England and Scotland, but not in Wales and Ireland. (3 cr)

HIS 3202 Britain in the Age of Revolutions, 1660-1815 Emergence of Britain as preeminent global capitalist economy and political power from the glittering court of Charles II to Britain's loss of its American colonies and its victory over revolutionary France. Connections between political-economic developments and social and cultural change including industrialization; war, economic growth and state formation; smuggling, gin, and criminality; empire; domesticity, women and the novel; high and low art in London. (3 cr)
Sem 2.

HIS 3203 Great Britain since 1815 British politics, society and culture from the triumph of Waterloo to youth culture in the post-industrial world of the Beatles. Topics include Liberalism; industrial conflict, urban poverty and radical politics; Anglo-Irish relations; degeneration and fin-de-siecle sexual anarchy; rise of Labour and Women's movements; imperialism and decolonization; race and ethnicity; film and social change. (3 cr)

HIS 3214 Early Ireland 1300-1800 Early Ireland from the Norman invasions to the Action of Union (1800); cultural history and early struggles for independence. (3 cr)

HIS 3216 Ireland Since 1800 The social and political history of the Irish state in the 19th and 20th centuries. (3 cr)

HIS 3221 The French Revolution and Napoleon Causes, nature and course of the French Revolution, including a study of its historical interpretation, and the Napoleonic aftermath of the Revolution. (3 cr)

HIS 3222 History of Modern France Major developments, problems, and policies connected with the evolution of the French nation and its empire from 1815 to the present. (3 cr)

HIS 3233 Hitler and Nazi Germany Germany from the rise of Hitler to the end of the Second World War. (3 cr)

HIS 3234 Divided Germany to Union, 1945-1990 The end of the Second World War, the division of Germany, the Cold War, Detente, reunification, and contemporary problems. (3 cr)

HIS 3241 Imperial Russia, 1700 to 1914 Major political, economic and social changes from the end of the Muscovite tsars and the rule of Peter the Great to the outbreak of World War I. Topics include Russia's industrial revolution and revolutionary movements. (3 cr)

HIS 3242 Russia and the Soviet Union in the 20th Century Russia from the 1917 Revolution to the present; the radical transformation of a state, economy and society in revolution and civil war, the Stalin dictatorship, the trial of World War II, and the patterns of reform and continuity in the post-Stalin and post-Soviet eras. (3 cr)

HIS 3321 Science and Technology in Modern History Non-technical survey of the origins and impact of developments in science and technology during the modern era. Special attention to the Scientific Revolution, the theory of evolution, synthetic chemicals, modern physics and the dilemmas of nuclear power, and molecular biology and biomedical technology. (3 cr)

HIS 3323 Science, Art, and Invention since 1790 Interactions among science, technology and art that have shaped modern culture since the industrial revolution of the late 18th century. Special attention to the sources, styles, and contexts of creativity in various fields. (3 cr)

HIS 3325 From Frankenstein to Biomedical Engineering The origins of artificial life forms by modern science, the perspective of involved scientists, literary observers, politicians and businessmen, and society as a whole. Topics include cloning, transplantation, artificial organs, genetic engineering, and artificial intelligence. (3 cr)

HIS 3351 19th Century European Society and Thought Social impact of the Industrial Revolution, Liberal and Marxist critiques, scientific impact on social and religious thought, imperialism and Social Darwinism, challenges to gender and sexual traditions. (3 cr)

HIS 3352 Seminar on European Thought in the 20th Century A survey of ideas about the individual and society, with attention to Freud, Kafka, Einstein and Sartre; theories of Communism, Nazism and Democracy; the holocaust; emergence of the welfare state; internationalism through EEC, the United

Nations; ecumenism in religion, and ecology. (3 cr)

HIS 3360 European Women's History to 1800 Roles of women from the Ancient world to revolutionary France, including analyzes of the status of women in Biblical, Greek, Roman, medieval, early modern and Enlightenment cultures and times. Themes of motherhood, women's work, women in literature and women's ways of exerting control over their lives. (3 cr)

HIS 3361 Women and Society in Modern Europe The changing roles of women in society and politics in Europe from the 18th to 20th centuries. Topics include women and the household economy; women and revolution; feminism and feminist movements; the rise of female professions; women's literature and feminist critical theory. (3 cr)

HIS 3995 Topics in European History Selected topics in European history of interest to faculty and students. (3 cr)

NON-WESTERN CIVILIZATIONS

HIS 4031 Islamic Civilization to 1800 The Islamic World from the seventh century through the eighteenth century with special emphasis on its cultural, social, and political history and contributions. (3 cr)

HIS 4041 History of the Modern Middle East The political, economic and social history of the Middle East with emphasis on the passing of imperial institutions and emergence of republics, trade and commerce, colonialism, and revolutionary movements. (3 cr)

HIS 4045 Middle Eastern Political Structures Transformation in the political

and administrative structures of the Middle East from the seventh century through the twentieth century. Emphasis on the functioning of dynastic empires and household bureaucracies, and the emergence of military cadres and democratic republics. (3 cr)

HIS 4076 Jewish History The relation of the Jews to the historical process; the Jews in relation to the larger civilizations in which they have lived; Jewish intellectual and moral contributions; Jewish history in the Christian world; the Holocaust; formation of a Jewish homeland, Israel. (3 cr)

HIS 4090 Women in the Middle East Roles of Middle East women from the seventh century to the present era. Women's lives and experiences, with emphasis on their influence and contribution to the economy, politics, and literature and the arts. Attention to the effects of regional, ethnic, class, and religious differences on women's status and activities. (3 cr)

HIS 4095 Topics in Middle Eastern History Selected topics in Middle Eastern history of interest to faculty and students. (3 cr)

HIS 4115 The Roots of African Culture Early African history and anthropology culminating in the emergence of Africa as an arena of European economic penetration, the rise of the African slave trade, and the impact of early European colonization. (3 cr)

HIS 4120 The Emergence of Modern Africa The impact of 19th century European colonialism on Africa; the division of Africa into European dependencies; change and continuity in African culture; the emergence of independent African nation states after World

War II; their difficulties and opportunities. (3 cr)

HIS 4130 Southern Africa in Historical Perspective Development of southern Africa, with particular emphasis on the formation of South Africa; Interaction of the various African peoples and the Europeans who came to settle the region and the way in which that interaction led to the establishment of, and resistance to, the system of apartheid. The collapse of apartheid. (3 cr)

HIS 4195 Topics in African History Selected topics in African history of interest to faculty and students. (3 cr)

HIS 4315 China and Japan to 1850 The traditions and influences that formed the civilization of China before modern times. (3 cr)

HIS 4320 China and Japan since 1850 Contact with the West, evolutions of the modern states of East Asia, and the background of contemporary international problems. (3 cr)

HIS 4330 China in the 20th Century China during its republican and Communist periods. (3 cr)

HIS 4335 Japan in the 20th Century The development of the modern industrial Japanese state. (3 cr)

HIS 4395 Topics in Asian History Selected topics in Asian history of interest to faculty and students. (3 cr)

HIS 4410 Colonial Latin America Indigenous cultures of the Americas; Spanish conquest and colonization; revolution of multi-

cultural societies; political and economic institutions; Catholicism and popular religion; Enlightenment and the struggle for independence. Emphasis on the enduring legacy of the colonial experience. (3 cr)

HIS 4415 Latin American since Independence Common Challenges and diverse national experiences in Latin America since independence, with emphasis on issues of race, class, and national identity; political stability and democracy; economic development and revolutionary change; popular and institutional religion; poverty and progress; migration and urbanization. (3 cr)

HIS 4420 Latin American Revolutions Twentieth century social movements and ideologies designed to challenge the colonial legacy of economic dependency, underdevelopment, and notions of class, race and gender. Themes include violent social revolution (Mexico, Cuba), democratic revolution (Chile), alternative visions (Liberation Theology), and forces outside the region that contribute to their success or failure. (3 cr)

HIS 4425 Mexico Indigenous civilizations and Spanish conquest; evolution of a mestizo society; independence, liberal democracy, and dictatorship; the Mexican Revolution and the one-party state; the contemporary transition to democracy and neo-liberalism. (3 cr)

HIS 4495 Topics in Latin American History Selected topics in Latin American history of interest to faculty and students. (3 cr)

COMPARATIVE HISTORY

HIS 4520 The World in the Twentieth Century I The political, diplomatic, economic, and social upheavals from 1900 to the Munich Conference. (3 cr)

HIS 4525 The World in the Twentieth Century II The Second World War, its aftermath, the Atomic Age, the emerging nations. (3 cr)

HIS 4620 20th Century Military History The major wars of the 20th century: World War I, World War II, Korea and Vietnam, cold war, wars of liberation. (3 cr)

HIS 4660 The World at War, 1939-1945 The origins of World War II; the collapse of collective security and the Stalin-Hitler pact; Soviet-German relations, 1939-1941; the war in the West, 1940-1941; the German-Russian war, 1941-1945; Allied and Axis war aims; Europe under German occupation; Grand-Alliance strategy, 1941-1945; the war in the air and on the seas; the Pacific theater, 1941-1945. (3 cr)

HIS 4700 The AWar Lords® of World War II The military leaders of the Second World War in both the European and Pacific theaters. (3 cr)

HIS 4800 Third World Revolution Comparative social analysis of the effects of European colonialism, especially underdevelopment and national liberation struggles. India, China, Vietnam, Black Africa, Cuba, and the Arab World. (3 cr)

HIS 4850 The War in Vietnam The War in Vietnam in historical perspective from colonialism to the Cold War and national liberation. (3 cr)

HIS 4995 Topics in Comparative History Selected topics in non-Western and world history of interest to faculty and students. (3 cr)

ADVANCED SEMINARS AND
INDEPENDENT STUDY

HIS 5501 Seminar in Historical Methodology Student research and reports. Seminar format. (3 cr) **Two hours a week.** *Sem 1&2. Prereq: History major with junior standing.*

HIS 5515 Independent Research An intensive research project under individual direction; may be taken in place of the HIS 5501 requirement. (3 cr) *Sem 1&2. Prereq: History major with junior standing; permission of the chair required.*

HIS 5551 Senior Thesis I An intensive research course under individual direction. May be taken in place of HIS 5501. (3 cr) *Sem 1&2. Prereq: History major with senior standing and permission of the chair.*

HIS 5552 Senior Thesis II A continuation of HIS 5551. May be taken in conjunction with HIS 5551 in one semester or sequentially with it in two semesters. (3 cr) *Sem 1&2. Prereq: History major with senior standing and permission of the chair.*

The following courses may also be taken for credit in History:

AAH 1101 Beginnings to Renaissance

AAH 1102 Renaissance to Contemporary World

PSC 4200 South Asia: People and Politics

PSC 4300 Southeast Asia: People and Politics

PHI 3700 Philosophy of History

HONORS PROGRAM

Director and Associate Professor: Goff

Assistant Director: Nancy Hensler

Office: 103 St. Augustine Center, tel. 519-4650

The Villanova Honors Program is a comprehensive four-year curriculum of small seminars designed to foster the free and open exchange of ideas among students and faculty. Honors courses emphasize extensive reading and writing, and attempt to develop the critical abilities of judgment and analysis. Innovative courses include team-taught seminars and seminars given by visiting professors. All Honors courses are enriched by a variety of lectures, cultural events, and social activities. Students in the College of Liberal Arts and Sciences may receive the degree of B.A. or B.S., Honors Program. The Honors Program Sequence in Liberal Studies (the Honors Program concentration) is open to students in all colleges.

B.A.H. DEGREE: Twelve Honors courses, including the Humanities or Social Science Seminar, a five-credit or six-credit senior thesis, and three upper-level courses (HON 2500 or above) not used to fulfill core requirements.

B.S.H. DEGREE: Ten Honors courses, including the Natural Science Seminar, a five-credit senior thesis, and three upper-level courses which may be used to fulfill core requirements. (Two Honors laboratory sections are the equivalent of one course.)

HONORS PROGRAM SEQUENCE IN LIBERAL STUDIES (CONCENTRATION): Eight courses in Honors, at least three of which must be upper-level.

All Honors Program certifications require a minimum overall QPA of 3.25. Honors classes may be used to fulfill liberal arts requirements and electives. For first- and second-year students, the Program offers Honors seminars in place of the core curriculum introductory courses in the humanities, social sciences, and natural sciences. Some students are invited to take multi-credit, team-taught interdisciplinary seminars (HON 1000, 1050, 2000 series) which examine the major works of Western Civilization in place of regular core requirements. This Honors core culminates with specially-designed seminars on methodology, current issues, and ethical questions in the humanities, social sciences, or natural sciences.

On the advanced level, the Honors Program offers a variety of seminars that include traditional themes of enduring significance, timely issues of concern, and interdisciplinary studies not available elsewhere in the college. All have in common small student enrollment, active class participation, and intensive writing requirements. Specific offerings change from semester to semester to reflect the interests of faculty and students in the Program. All upper-level seminars also fulfill major and minor requirements in specific academic disciplines.

Admission to the Honors Program is by invitation or by application to the Director. Members of the Program are expected to take Honors courses at least every other semester, and to maintain high academic standards. Individual Honors courses are open to all Villanova students who have at least a 3.0 overall QPA or will bring a special expertise to the course, contingent upon class size limitations. Admission to all Honors courses requires the permission of the Director.

FIRST/SECOND YEAR
COURSE OFFERINGS

HON 1000 Interdisciplinary Humanities I:

Philosophy Major works and ideas from the classical Graeco-Roman and Christian traditions. Emphasis on philosophical ideas. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1. Two coreq: HON 1001, 1002, 1003.*

HON 1001 Interdisciplinary Humanities I:

Literature Major works and ideas from the classical Graeco-Roman and Christian traditions. Emphasis on literature and drama. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1. Two coreq: HON 1000, 1002, 1003*

HON 1002 Interdisciplinary Humanities I:

History Major works and ideas from the classical Graeco-Roman and Christian traditions. Emphasis on historical development. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1. Two coreq: HON 1000, 1001, 1003.*

HON 1003 Interdisciplinary Humanities I:

Religion Major works and ideas from the Graeco-Roman and Christian traditions. Emphasis on religious thought and development. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1. Two coreq: HON 1000, 1001, 1002.*

HON 1050 Interdisciplinary Humanities

II: Philosophy Major works and ideas from the Medieval period to the French Revolution.

Emphasis on the evolution in philosophy from medieval to modern. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 2. Two coreq: HON 1051, 1052, 1053, 1054.*

HON 1051 Interdisciplinary Humanities II:

Literature Major works and ideas from the Medieval period to the French Revolution. Emphasis on the evolution in literature from medieval to modern. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 2. Two coreq: HON 1050, 1052, 1053, 1054.*

HON 1052 Interdisciplinary Humanities

II: History Major works and ideas from the Medieval period to the French Revolution. Emphasis on the historical evolution from medieval to modern in thought and institutions. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 2. Two coreq: HON 1050, 1051, 1053, 1054.*

HON 1053 Interdisciplinary Humanities

II: Religion Major works and ideas from the Medieval period to the French Revolution. Emphasis on the evolution from medieval to modern in religious thought and institutions. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 2. Two coreq: HON 1050, 1051, 1052, 1054.*

HON 1054 Interdisciplinary Humanities

II: Political Science Major works and ideas from the Medieval period to the French Revolution. Emphasis on the evolution in

political thought from medieval to modern.
Extensive reading and writing requirements.
Team-taught. **(3 cr)** *Sem 2. Two coreq: HON 1050, 1051, 1052, 1053.*

HON 1070 Biology for Today See BIO 1505. Lecture with BIO 1505; Honors laboratory section. **(4 cr)** *Sem 1.*

HON 1073 Concepts of the Gene Thematic development of concepts of the gene. Laboratory exercises include exploration of issues through problem-based learning methods. **(4 cr)** *Sem 2. Prereq: HON 1070 or BIO 1505.*

HON 1075 General Biology I & Laboratory See BIO 2105. Lecture with BIO 2105; Honors laboratory section. **(4 cr)** *Sem 1.*

HON 1076 General Biology II & Laboratory See BIO 2106. Lecture with BIO 2106; Honors laboratory section. **(4 cr)** *Sem 2.*

HON 1080 Principles of Microeconomics The price system; demand and supply analysis; the production process; analysis of market structures. **(3 cr)** *Sem 1&2.*

HON 1081 Principles of Macroeconomics The economic system and its fundamental principles; economic functions of government, monetary and fiscal policy, and international trade. **(3 cr)** *Sem 1&2.*

HON 1090 The Legal Environment of Business and Society The sources, nature and substantive principles of American law; its moral and ethical dimensions; the judicial process; comparison with other legal systems; impact of government regulations. **(3 cr)** *Sem 1&2.*

HON 1219 Artificial Intelligence Formal systems, modeling of intelligent processes by computer programs, representation of knowledge; Natural Language Processing. Historical and philosophical foundations of AI. **(3 cr)** *Sem 1&2.*

HON 1241 Ancient, Medieval and Renaissance Thought Core Humanities Seminar based principally on texts and readings drawn from primary sources up to 1650. Extensive written work and seminar discussions. Required readings: Hebrew and Christian scriptures, selections from the works of Augustine, Greek and Renaissance works. Readings from different genres and disciplines. Themes developed by the instructor in accordance with the selected readings. **(3 cr)** *Sem 1&2.*

HON 1242 Modern Thought: Enlightenment to the Present Core humanities seminar based principally on texts and readings drawn from primary sources, 1650 to the present. Extensive written work and seminar discussions. Reading from each of the following five historical eras: Early Modern, Enlightenment, Romantic, Modernist, Contemporary. Readings from different genres and disciplines. Themes developed by the instructor in accordance with the selected readings, including a specific Augustinian theme. **(3 cr)** *Sem 1&2.*

HON 1331 The Literary Experience Introduction to literature and methods of literary analysis. Close readings of texts from a variety of perspectives; includes works from a range of genres and periods. Extensive writing requirements. **(3 cr)** *Sem 1&2.*

HON 1380 Ethics Major Western ethical traditions as they apply to selected contemporary ethical problems, with special consideration of Jewish and Christian perspectives. This course satisfies the Arts and Sciences Writing Enriched requirement. (3 cr) *Sem 1&2.*

HON 1433 Themes in Ancient and Medieval History Significant themes in classical and medieval history, including cultures that gave rise to the civilizations of Western Europe: Israel, Greece, Rome, early Christianity. Emphasis on primary sources. (3 cr) *Sem 1&2.*

HON 1435 Themes in Modern World History Major historical moments and themes in the political, economic, and cultural transformation of diverse nations and regions of the world during the past several centuries. A topical and interpretive approach designed to provide a historical and cross-cultural context while exploring the origins and implications of the changes that have come to characterize the “modern” world. (3 cr) *Sem 1&2.*

HON 1501 Language and Computation Introduction to linguistics and its role in the development of computer languages and technologies. Topics include conceptual issues in linguistics, computation, and grammars as generative devices for computer languages. Philosophical and historical perspectives on the Cognitive revolution. (3 cr)

HON 1601 Mathematical Ideas Mathematical ideas that have influenced other disciplines and the field of mathematics. Designed for students not intending further study in mathematics. Calculus not required. (3 cr) *Sem 1.*

HON 1755 Introduction to Philosophy Issues of God, persons and nature, and knowledge. Special consideration of classical and Christian perspectives. (3 cr) *Sem 1&2.*

HON 1771 General Physics I Laboratory Experiments in mechanics, heat, and sound with emphasis on individual and group research. (1 cr) *Sem 1. Coreq: PHY 1100.*

HON 1772 General Physics II Laboratory Experiments in light and electricity with emphasis on individual and group research. (1 cr) *Sem 2. Coreq: PHY 1102.*

HON 1801 Introduction to American Government Fundamentals of American government: foundation in political thought, separate and collective functions of government structures, policy, role of individual in system. (3 cr) *Sem 1&2.*

HON 1802 Introduction to International Relations Factors in relations between states; the nature, elements, and role of power; problems faced by the modern state system. (3 cr) *Sem 1&2.*

HON 1811 General Psychology Fundamental concepts of psychology, with emphasis on the description of normal human behavior and its underlying factors. (3 cr) *Sem 1&2.*

HON 1825 Christianity: Traditions and Transitions Major themes of the Christian traditions from historical, scriptural, and theological perspectives. (3 cr) *Sem 1&2.*

HON 1911 Introduction to Sociology Fundamental concepts of sociological behavior, with emphasis on development of the social

individual, collective and group behavior, social institutions and culture. (3 cr) *Sem 1.*

HON 2000 Interdisciplinary Humanities

III: Philosophy Major works and ideas of the 19th and 20th centuries, with emphasis on philosophy. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1.*
One Coreq: HON 2001, 2002, 2003, 2004.

HON 2001 Interdisciplinary Humanities

III: Literature Major works and ideas of the 19th and 20th centuries, with emphasis on literature. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1.*
One Coreq: HON 2000, 2002, 2003, 2004.

HON 2002 Interdisciplinary Humanities

III: History Major works and ideas of the 19th and 20th centuries, with emphasis on historical developments. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1.*
One coreq: HON 2000, 2001, 2003, 2004.

HON 2003 Interdisciplinary Humanities

III: Religion Major works and ideas of the 19th and 20th Centuries, with emphasis on religious thought. Extensive reading and writing requirements. Team taught. (3 cr) *Sem 1.*
One coreq: HON 2000, 2001, 20002, 2004.

HON 2004 Interdisciplinary Humanities

III: Social Science Major works and ideas of the 19th and 20th centuries, with emphasis on social science thought. Extensive reading and writing requirements. Team-taught. (3 cr) *Sem 1.*
One coreq: HON 2000, 2001, 2002, 2003.

HON 2550 Humanities Seminar

Interdisciplinary study of distinctiveness of

humanistic knowledge, humanist perspectives on the social and natural sciences, hermeneutics and interpretation, objectivism and relativism. (3 cr) *Sem 2.*

HON 2560 Social Science Seminar

Methodology of empirical and statistical analysis in the social sciences. Computer applications to data analysis, model designs and theory testing. (3 cr) *Sem 2.*

HON 2570 Natural Science Seminar

Methods and issues related to scientific research, including representation and evaluation of data, value questions, and the nature of scientific certainty. (3 cr) *Sem 2.*

UPPER-LEVEL COURSE OFFERINGS

Upper division courses and colloquia are offered by announcement. The specific topics for courses and colloquia appear in the master schedule for each semester.

HON 2993, 2996 Internship

HON 3000, 3050 Art History (3 cr)

HON 3100, 3150 Classics (3 cr)

HON 3200, 3250 Economics (3 cr)

HON 3300, 3350 Education (3 cr)

HON 3400, 3450 Communication (3 cr)

HON 3600, 3601, 3650, 3651, 3652, 3653
Literature (3 cr)

HON 3800, 3850 Geography (3 cr)

HON 4000, 4001, 4002, 4050, 4501, 4052
History (3 cr)

HON 4100, 4101, 4150, 4151 Mathematics
(3 cr)

HON 4300, 4301, 4302, 4350, 4351, 4352
Philosophy (3 cr)

HON 4500, 4501, 4502, 4550, 4551, 4552
Political Science (3 cr)

HON 4700, 4701, 4750, 4751 Psychology
(3 cr)

HON 4800, 4801, 4850, 4851 Theology and
Religious Studies (3 cr)

HON 4900, 4901, 4950, 4951 Sociology
(3 cr)

*The courses listed below are representative of
upper division courses taught in the Honors
Program:*

Abnormal Behavior Causal theories and
social distribution of specific behaviors
considered deviant or abnormal in the American
population.

American Sign Language Structure and
production of ASL; linguistic expression
through face and body; diverse sensory
experience and ways of knowing; Deaf
literature and culture.

American Ethnic Folklore Cultural
continuity, adaptation, and change in ten U.S.
ethnic cultures and subcultures. Perspectives
from cultural anthropology, sociology,
ethnohistory, and folklore. Fieldwork projects.

**Aristocrats, Intellectuals, and Regicides:
Painting in France and England in the 18th
Century** Artistic response to changing
intellectual and political climates of 18th

century: art as propaganda, Golden age of
British Art, art as heritage, professional status
of artists.

**Black and Irish: Explorations in the
Construction of Identity; Interpretations of
Shared Time and Space** Early medieval
British/Celtic identity formation and
interaction with peoples of African descent;
construction of "African" and "white" in the
context of western hemisphere colonization
and contemporary America.

Concord Writers Emerson, Thoreau,
Hawthorne, Alcotts in their literary and social
contexts; social and cultural dynamics in 1840s
small-town New England. Field trip to
Concord, MA.

Constitutional Criminal Law Case studies
of United States Supreme Court decisions
regarding rights and protections of persons
charged with criminal violations: search and
seizure, right to counsel, right against
self-incrimination, line-ups, habeas corpus.

Critical Pedagogy Educational philosophies
which address empowerment of students.
Paulo Freire, Ira Shor, Kathleen Weiller.

Dark Ages Common themes of late Bronze
and early Iron Ages of Greece, and early
Medieval period: reliance in kinship groups,
formal exchange of gifts as social bonds,
frequent blood feuds, localized household
economics, status of women.

Deconstruction and Religion Application
of Deconstruction, the movement associated
with Jacques Derrida, to such issues as the
question of God, ethics, and the New
Testament.

Feminist Philosophy of Science Language of reproductive biology; views of objectivity in science; universality of scientific norms; constructions of bodies in scientific practices; gender and taxonomic systems; gender, race and colonialist ideologies in the sciences.

Feminist Theories Gender oppression theories: socialist feminist, radical feminist, Black feminist, Third World feminist, and postmodernism. Issues of weight and body, sexuality, racism, and the new feminist epistemology.

Hunger in Our Own Backyard: The United States & Philadelphia Physical and psychological effects, location, scope, contributing factors of hunger. Fieldwork activity integral to course.

Introduction to Ecology Factors affecting the distribution, abundance, and interactions of organisms. Climate patterns, biomes, physiological and behavioral adaptations, population dynamics, species interactions, community structure, ecosystem function, and environmental problems. Hypothesis testing using statistical analysis of data. Emphasis on discussion of ecological applications and on collaborative approaches to lab/field exercises. Required overnight field trip.

Joyce's *Ulysses* Textual exegesis of *Ulysses*: Homeric parallel; organizational schemes; extrinsic contexts: literary Modernism, modern linguistic thought, Irish political and religious culture.

Labor, Work and Unions Labor in a capitalist society; history of U.S. labor movement in its global context; class consciousness and alienation; labor laws; labor and politics;

working conditions; Catholic social thought and labor; future of unions.

Latin American Themes Historical and contemporary analyses of complexities and contradictions of Latin American culture, institutions, and values through four themes: traditional vs. modern, race and class, economic development models, Catholicism.

Madness and Imagination Literary representations of madness as metaphor and reality. History of medical psychology and the reason/imagination dichotomy in artistic traditions.

Mass Media Portrayal of Political & Social Reality Critical analysis of mass media representation of political and social events.

Mathematical Epidemiology Mathematical modeling and study of disease epidemics: threshold effects, equilibrium and stability, oscillations in prevalence, ecology and epidemiology; role of disease in history of civilizations.

Medical Machines: Ethical Issues in Medicine, Technology, and Public Policy Ethical and policy questions of medical technology: selection of recipients, informed consent, regulation and financing. Case studies include artificial heart, kidney dialysis, drug testing.

Metropolitan Cultures: London, New York, and Paris Interdisciplinary approach to themes of space, work, play, and sex in three world centers of the 19th and early 20th centuries, using literature, journalism, art history and photography, historical geography and history. Metropolises as crucibles for formation and destabilization of individual and

group identities; as sites for analysis of Victorian and Modernist responses to modernization.

Poverty and the American Economy Extent and incidence of poverty over the past thirty years, using alternative measurement methods; underlying causes of poverty; policies to combat poverty including welfare reform, job training programs, and school reform.

Political Campaigns and Elections Modern political campaigns, political rhetoric and images, campaign financing, mass media, and ethical issues. Frequent guest speakers.

Political and Social Thought of African Americans, 1890-1940 Development of African American social and political theory as response to the era's increased institutionalized racism. Washington, DuBois, Garvey, Locke; effectiveness of their rhetoric and actions.

Political Identity in the Arab World Influence of political patterns, ethnicity, minorities, and religion on political identity. Interaction between secular nationalism and political Islam through ideas and actions of key political thinkers and organized political movements.

Powers of the Court Discretionary powers exercised by the courts in resolving complex constitutional issues. Use of injunctions to address civil disturbances, labor union strikes, divorces.

Sex Determination: Genetics and Environment Interplay of genetic, physiological, environmental and critical timing factors in determining sex. Data collection from primary literature within subdisciplines of biology; development of models and testable

hypotheses; laboratory problem-based learning approach.

Representations of the Tragic Ethical and political dimensions of the tragic explored in Western philosophy, Literature, opera, film, and painting. Themes of fate and destiny, love and passion, suffering and happiness, luck and chance.

Spirituality in the North American Context Spiritual traditions, theories, and movements from 1500 to the present, and their influence on modern North American Christian spirituality.

Technology and Society Effect of new technologies on thought, social institutions, and cultural values; optimistic/pessimistic visions; interrelationships of technology and: gender, war, medicine, and engineering.

Urban Realities/ Suburban Perspectives Crime, drugs, police review board, public housing, public welfare; impact of media on cities. Reality versus rumor in suburban views of city life.

W.E.B. DuBois: Rac(ing) History DuBois's discourse on race in context of Enlightenment and German Idealism; critical analysis of his work by contemporary African American philosophers Anthony Appiah, Bernard Boxill, Tommy Lott, and Lucius Outlaw.

HON 5200 Ideas and Texts Six professors from as many disciplines analyze a text of significance that has had an impact on their own intellectual development. May be repeated for credit. **(3 cr) Sem1&2.**

ONE-CREDIT COURSES

One credit courses are offered by announcement; specific topics appear in the Honors Program subcatalog and master schedule each semester. These workshops are intensive experiential courses directed toward reflexive understanding of one's self as engaged in the processes of creativity and self-discovery.

HON 5300 Psychology

HON 5400 Performing Arts: Dance

HON 5410 Performing Arts: Instrument

HON 5420 Performing Arts: Theatre

HON 5430 Performing Arts: Voice

HON 5440 Literary Arts: Poetry

HON 5450 Literary Arts: Prose

HON 5460 Plastic Arts: Painting

HON 5470 Plastic Arts: Sculpture

HON 5480 Language Arts: American Sign Language

HON 5500 Independent Study and Research (3 cr) *Sem 1.*

HON 5501 Independent Study and Research (3 cr) *Sem 2.*

HON 5506 Independent Study and Research in Science (3 cr) *Sem 1.*

HON 5507 Independent Study and Research in Science (3 cr) *Sem 2.*

HON 5600 Seminar Reserved for Visiting Professors An open seminar to be used as deemed appropriate by visiting professors

teaching in the Honors Program. **(3 cr)** *Sem 1&2.*

HON 5700, 5701, 5702, 5703, 5750, 5751, 5752, 5753 Colloquia Topics, themes, and treatment originated through student request or faculty interest; specific topics to be announced. **(3 cr)** *Sem 1&2.*

HON 5999 Proseminar: Research Strategies and Methods Fundamental concepts, terms, and practices of scholarly research in the humanities, including strategies for conducting exhaustive literature reviews, annotated bibliographies, and work-in-progress class presentations. Emphasis upon individual research projects in the specific disciplines of projected Senior Thesis topics. Required of students in the humanities and history who intend to pursue the six-credit Senior Thesis option. **(3 cr)** *Sem 2.*

HON 6000 Senior Thesis I Major independent research project under the direction of a thesis adviser. The first semester includes a comprehensive proposal and bibliography, research design, detailed outline, and substantive writing sample. **(3 cr)** *Sem 1&2. Prereq: HON 5999.*

HON 6001 Senior Thesis I Major independent research project under the direction of a thesis adviser. The first semester includes a comprehensive proposal and bibliography, research design, and preliminary outline. **(2 cr)** *Sem 1&2.*

HON 6002 Senior Thesis II Major independent research project under the direction of a thesis adviser. In addition to completing the thesis, students must participate in the Senior Research Conference and thesis defense. **(3 cr)** *Sem 1&2.*

HON 7050 Game Theory and the Law

Game theoretical frameworks for rational interaction in legal decision-making.

Appropriate game strategies for selected legal

problems. Solution concepts in game theory and applications to legal cases. (3 cr)

IRISH STUDIES

Director: Murphy

Office: 467 St. Augustine Center, tel. 610/519-4676

Irish Studies explores the history and culture of the Irish people from different perspectives -- literature, history, art, politics, and folklore. The program is open to students from all colleges. Interested students may also study in Ireland either in a Semester Abroad program or with the Villanova-in-Ireland Summer program at University College Galway. Details are available in the Irish Studies Office.

Concentration: Fifteen credits including two core courses, ENG 2500 and HIS 3216, and any three of the following: AAH 3007; ENG 2450, 2460, 2500, 2700, 3615; HIS 3215, 3216; HON 5601; PSC 4950, 6875; or SOC 6500.

LATIN AMERICAN STUDIES

Director and Associate Professor: Pattnayak

Office: 273 St. Augustine Center, tel. 519-4773

The Latin American Studies Program is an interdisciplinary program providing courses, a minor and a concentration in Latin American Studies. It is open to students in all degree programs.

MINOR: Two courses in Spanish language training at or above the intermediate level and five additional courses (15 credits) as follows: HIS 4410, 4415, 4420, 4425, or 4495; PSC 4750 or ECO 4200; LAS. 1100 and two electives which can be taken either from the program core or from the list of electives.

Concentration: Two courses in Spanish language training beyond the intermediate level and six additional courses (18 credits) as follows: HIS. 4410, HIS. 4415, HIS. 4420, HIS. 4425 or HIS. 4495; PSC. 4750 or ECO. 4200; LAS. 1100; one course in Latin American literature and two electives, which can be taken either from the program core or from the list of electives.

Program Core:	HIS 4420	Latin American Revolutions
ECO 4200 Special Topics: The Economics of Latin American and the Caribbean	HIS 4425	Mexico
HIS 4410 Colonial Latin America	HIS 4495	Topics in Latin American History
HIS 4415 Latin America since Independence	HON 4000	Latin American Themes
	LAS 1100	Latin American Seminar

College of Liberal Arts and Sciences

LAS 3412 Special Topics
PSC 4750 Latin American Politics
S OC 6500 Seminar in Sociology: Third
World Development: Latin America
SPA 1121 Intermediate Spanish I
SPA 1122 Intermediate Spanish II
SPA 1131 Conversation and Composition
SPA 1132 Advanced Conversation and
Composition
SPA 1138 Advanced Grammar
SPA 2143 Spanish American Civilization
SPA 2212 Survey of Spanish American
Literature
SPA 2213 Spanish American Theater
SPA 2214 Spanish American Novel
SPA 2215 Spanish American Short Story
SPA 3822 Spanish American Poetry

Elective courses:

HIS 4490 Topics in World History: Racism
and Justice in the Americas
PSC 5800 Politics of International
Economics
PSC 6875/HIS 4490* Modern Political
History of the Southern Cone*
SOC 3600 Race and Ethnic Relations
SOC 3750 Human Populations
SOC 4000 Social Change In South America*
SPA 1133 Business Spanish I
SPA 1134 Business Spanish II
THL 3740 Liberation Theologies
THL 4600 North/South Development Ethics
* Offered only through Villanova Summer
Program in Valparariso, Chile