

339B: A thorough analysis of selected passages from important authors of the 17th century. *Prerequisite: FR 320.*

339C: A thorough analysis of selected passages from important authors of the Age of Enlightenment. Instruction is in French. *Prerequisite: FR 320.*
FR 351. French/English Translation. 3 credits.

An intensive course in writing and translation from and into English and French. Contemporary topics taken from various fields. Comparative terminology. *Prerequisite: FR 300.*

FR 375. Business and Society in France. 3 credits.

This course explores the development of French society in the historical, political, and economic context. In this course several aspects will be investigated: agricultural, textile, fashion, wine industry, and motion picture, music, media industries, and import and export products. In addition, the this course will include the study of banking and financial institutions, health and education systems. *Prerequisite: FR 320.*

FR 400. Advanced Conversation. 3 credits.

Discussions deal with topics of current interest. *Prerequisite: FR 320.*

FR 405. Nineteenth-Century French Literature. 3 credits.

405A: French literature of the first half of the 19th century with special emphasis on the works of Hugo, Lamartine, Vigny and Musset. *Prerequisite: FR 320.*

405B: French literature of the second half of the 19th century with special emphasis on the works of Balzac, Stendhal, Flaubert and Zola. Instruction is in French. *Prerequisite: FR 320.*

FR 420. Advanced Genre Studies. 3 credits.

420A: A study of French theatre from the Middle Ages to the 20th century. *Prerequisite: FR 320.*

420B: A study of French poetry from the Middle Ages to the 20th century. *Prerequisite: FR 320.*

420C: A study of French narrative fiction from the Middle Ages to the 20th century. Instruction is in French. *Prerequisite: FR 320.*

FR 425. Twentieth-Century French Literature. 3 credits.

425A: A study of the works of major French writers of the first half of the 20th century. *Prerequisite: FR 320.*

425B: A study of contemporary French novels written since 1950 with the emphasis on current fiction. Instruction is in French. *Prerequisite: FR 320.*

FR/ENG 435. Studies in French Literature. 3 credits.

A study of selected works of French literature. Instruction is in English. May be repeated for credit when course content changes.

FR 446. Special Topics in French Literature. 3 credits.

Study of a particular topic in French literature. It may cover one or more genre of French literature. Course may be repeated if content varies. *Prerequisite: FR 320.*

FR 447. Special Topics in French Civilization and Culture. 3 credits.

Students will study a particular topic in the civilization and/or culture of Francophone countries. Course may be repeated if content varies. *Prerequisite: FR 320.*

FR 448. Special Topics in French Linguistics. 3 credits.

Students will study a particular topic of French linguistics. Topics could include an introduction to French sociolinguistics and psycholinguistics. Course may be repeated if content varies. *Prerequisite: FR 320.*

FR 465. French Cinema 1930-1980. 3 credits.

A study of French cinematography from 1930 to 1980. Emphasis given on the following directors: Renoir, Pagnol, Carné-Prévert, Cocteau, Vadim, Chabrol, Resnais, Godard, Rohmer, Lelouch, Truffaut and Malle. Instruction is in French. Counts as a culture course, not as a literature course. *Prerequisite: FR 320.*

FR 466. Contemporary French Cinema. 3 credits.

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

General Business

College of Business

GBUS 160. Business Decision Making in Modern Society. 3 credits.

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

General Education

The Human Community

A "G" in bold and italics or an asterisk (*) preceding the course prefix and number indicates a course which potentially meets general education requirements.

GAFST 200. Introduction to Africana Studies. 3 credits.

An introductory survey of basic theoretical concepts to analyze the Black experience, with special focus on the general historical process common to Africa and the African Diaspora.

GAMST 200. Introduction to American Studies. 3 credits.

This interdisciplinary course will highlight the student's role in interrogating the cultural and political function of representations of America in literature, history, philosophy, religion, popular culture, music and art. Students will gain an understanding of why definitions of American identity matter and learn about the contemporary debates that inform the discipline of American Studies today. Questions about the changing role of national studies in the face of globalization are central.

GANTH 195. Cultural Anthropology. 3 credits.

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

GANTH 196. Biological Anthropology. 3 credits (B,R).

An introduction to the origins, evolution and genetic variability of humans and their relationship to nonhuman primates. Examination of the fossil record, the relationship between biology and culture and human genetics are included. Theories and methods used in the study of biological anthropology are also introduced.

GANTH 205. Buried Cities, Lost Tribes: The Rise and Fall of Early Human Societies. 3 credits.

This course takes an archaeological and comparative perspective on the origins of human institutions, including art, architecture, religion, centralized political formations and urban life. The development and collapse of early societies in multiple world regions, including Mesopotamia, Egypt, the Indus Valley, Mesoamerica and the Andes will be explored.

GART 200. Art in General Culture. 3 credits.

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

GARTH 205. Survey of World Art I: Prehistoric to Renaissance. 3 credits.

An introduction to the art and architecture of the world from cave painting through European pre-Renaissance art. Includes ancient through medieval art in Europe and the Near East as well as Asian and African arts.

GARTH 206. Survey of World Art II: Renaissance to Modern. 3 credits.

An introduction to the art and architecture of the world from the Renaissance through Modern ages. Includes European Renaissance, Baroque, Enlightenment, 19th and 20th centuries as well as Asian and African arts.

***ASTR 120. The Solar System.** 3 credits.

An introductory course in astronomy, which includes the following topics: motions of celestial objects, eclipses, historical development, the nature of light, telescopes, properties and evolution of the solar system. Students may not receive credit for ASTR 120/121 and PHYS 120/121.

***ASTR 121. Stars, Galaxies and Cosmology.** 3 credits.

An introductory course in astronomy which includes the following topics: the Sun, stellar properties, stellar evolution, black holes, the Milky Way, galactic evolution, quasars, cosmology. Students may not receive credit for ASTR 120/121 and PHYS 120/121.

GBIO 103. Contemporary Biology (3, 0). 3 credits.

An in-depth exploration of selected biological concepts, connected to current, relevant topics and emphasizing an understanding of science as a way of obtaining knowledge. Not available for major or minor credit in biology.

***BIO 114. Organisms (3, 3).** 4 credits.

An exploration of how diverse life forms carry out fundamental processes that sustain life, including acquiring and using essential molecules, growing and reproducing, responding to environmental stimuli, and maintaining a stable internal environment. Labs will introduce students to the scientific method in a series of investigative lab and field experiences. Biology and biotechnology majors receive registration priority in the fall.

*** BIO 222. Interdisciplinary Biology for Engineering and Physical Sciences.** (3, 0) 3 credits

Case studies and an issues-based approach will provide a framework to understand the science of biology, to stimulate critical thinking, and to appreciate the interdisciplinary nature of biological investigations. This interdisciplinary biology course is intended for students who have at least sophomore status and who are physical science, engineering or mathematics majors. This course is not available for credit toward the major or minor in biology or biotechnology. *Prerequisite: MATH 231 or MATH 235.*

***BIO 270. Human Physiology** (3, 2). 4 credits.

An introduction to basic physiological principles using humans as the primary organism. Physiological adaptations will be examined at the molecular through organismal levels. Intended for students in health-related fields and Cluster 3 of the General Education program. Not available for biology or biotechnology major credit. *Prerequisites or corequisites: CHEM 120 or CHEM 131 or equivalent, and MATH 220 or equivalent.*

GBUS 160. Business Decision Making in a Modern Society. 3 credits.

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

***CHEM 120. Concepts of Chemistry.** 3 credits.

A one-semester introduction to the fundamental principles, laws and applications of chemistry. Examples relating to the health sciences are emphasized. Not available for major or minor credit in chemistry.

***CHEM 131. General Chemistry I.** 3 credits.

The first of a two-course general chemistry sequence for science majors. It is designed to introduce students to basic chemical concepts including atomic structure, periodic properties of the elements, nomenclature, basic stoichiometry, theories related to reactivity and bonding, and the behavior of materials. *Corequisite: CHEM 131L or CHEM 135L.*

***CHEM 131L. General Chemistry Laboratory.** 1 credit.

This laboratory course is designed to complement and supplement the CHEM 131 lecture course. The laboratory and lecture portions must be taken concurrently. Chemistry majors are to take CHEM 135L and 136L.

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

GCOM 122. Fundamental Human Communication: Individual Presentations. 3 credits.

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

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

GECON 200. Introduction to Macroeconomics. 3 credits.

Behavior of systems at the national and international levels. Topics include the methodology of economics as a social science, supply and demand, definition and measurement of important macroeconomic variables, and theoretical models of growth, inflation, interest rates, unemployment, business cycles, stabilization policy, exchange rates and the balance of payments. Not open to students who are enrolled in or who have received credit for ECON 332.

GENG 221. Literature, Culture, Ideas. 3 credits.

This course will take a thematic approach to literature by examining multiple literary texts that engage with a common course theme concerned with the human experience. Themes address cultural, political, social, religious, or philosophical aspect ideas through literature. Specific topics will vary.

GENG 222. Genre(s). 3 credits.

An examination of representative works in a literary genre, in a set of related literary subgenres, or in both a literary genre and one or more closely connected genres in other humanities disciplines.

GENG 235. Survey of English Literature: From Beowulf to the 18th Century. 3 credits.

A general survey presented chronologically.

GENG 236. Survey of English Literature: 18th Century to Modern. 3 credits.

A general survey presented chronologically.

GENG 239. Studies in World Literature. 3 credits.

Introduction to masterpieces of world literature with emphasis on non-Western literature. (May be focused regionally or topically.)

GENG 247. Survey of American Literature: From the Beginning to the Civil War. 3 credits.

A general survey presented chronologically.

GENG 248. Survey of American Literature: From the Civil War to the Modern Period. 3 credits.

A general survey presented chronologically.

GENG 260. Survey of African-American Literature. 3 credits.

Survey of literature by African-American authors from the 18th century to the present.

GGEOG 200. Geography: The Global Dimension. 3 credits.

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

GGEOL 102. Environment: Earth (3, 0). 3 credits.

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

***GEOL 110. Physical Geology (3, 2).** 4 credits.

A systematic study of earth materials and the internal and external processes that affect earth structure and landforms. Topics include the genesis/properties of rocks and minerals, plate tectonics and the agents of change that drive surface processes and land form development.

GGEOL 115. Earth Systems and Climate Change. 3 credits.

This course explores cycles, trends and abrupt events in the Earth system. Analyses of the geologic record and global climate models provide perspective for understanding paleoclimate and future climate changes, including global warning. Current hypotheses for causes of climate change are evaluated, including plate tectonics, orbital cyclicity, variations in the sun's strength and human activities. The two reoccurring questions of this class are: What are Earth's climate stories? How do we know?

***GEOL 200. Evolutionary Systems (3, 2).** 4 credits.

An investment of a theoretical principle behind evolutionary systems of all types based on mathematical modeling in chaos, complexity theory and artificial life studies with extensive computer experimentation and examples drawn from physical, chemical, biological, economic and social systems. The purpose is to explore what is common and universal to all evolutionary processes.

***GEOL 210. Applied Physical Geology.** 3 credits.

A problem-based study of earth materials and the processes that affect earth structure and landforms. Topics include plate tectonics, the genesis/properties of rocks and minerals, and agents of change that drive surface processes and landform development. Quantitative problem-solving skills will be applied to case studies that address 3D visualization and time-based processes, such as earth materials, solid earth and surface processes, natural hazards and engineering applications. *Prerequisites: Either PHYS 140 or PHYS 240 or CHEM 131 or by permission of the instructor. Corequisites: MATH 205 or MATH 220 or MATH 235 or by permission of the instructor.*

***GEOL 211. Introduction to Oceanography.** 3 credits.

An introduction to the oceanography of coastal environs including barrier islands, estuaries and tidal marshes. The physical, geological and biochemical characteristics of coastal waters will be discussed in the context of the economic and social pressures brought to bear on these areas by an increasing global population.

GHIST 101. World History to 1500. 3 credits.

A survey of important historical developments from prehistoric times to 1500. Emphasis is given to the rise and decline of great world civilizations and their lasting contributions to humanity.

GHIST 102. World History Since 1500. 3 credits.

A survey of important historical developments from 1500 to the present. Emphasis is given to the growth of nationalism, the development of colonialism, and to world events, problems, and conflicts of the present century.

GHIST 150. Critical Issues in Recent Global History. 3 credits.

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

GHIST 225. U.S. History. 4 credits.

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

GHTH 100. Personal Wellness. 3 credits.

Emphasizes lifestyle behaviors contributing to health promotion and disease prevention. General areas affecting health status are identified. Suggestions are made as to how health-related behaviors, self-care and individual decisions contribute to health and influence dimensions of wellness.

GHUM 102. God, Meaning and Morality. 3 credits.

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

GHUM 200. Great Works. 3 credits.

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

GHUM 250. Foundations of Western Culture. 3 credits.

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

GHUM 251. Modern Perspectives. 3 credits.

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

GHUM 252. Cross-Cultural Perspectives. 3 credits.

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

GISAT 100. Environmental and Energy Sustainability. 3 credits.

This course explores scientific and technical issues important to environmental and energy sustainability. Students study fundamental chemistry and physics and then apply this knowledge to better understand air quality, water quality, and conventional and alternative energy processes. The class also explores the societal impacts of our energy choices and the potential impact we as individuals can have through personal initiative.

GISAT 112. Environmental Issues in Science and Technology (2, 3). 4 credits.

This course integrates the study of biology, chemistry and statistics within the context of environmental issues that include ozone depletion, acid rain, global warming, waste management and biodiversity.

GISAT 113. Biotechnology Issues in Science and Technology: (2, 2). 4 credits.

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

GISAT 141. Analytical Methods. 4 credits.

This course introduces the student to science and the scientific method; introductory statistics and graphical data analysis, with emphasis on using the computer for managing data and for empirical modeling; functions for modeling real-world systems; critical thinking skills for analyzing arguments involving data; project management.

GISAT 151. Topics in Applied Calculus in ISAT. 4 credits.

This course introduces the concepts of differential and integral calculus and ordinary differential equations to model real-world applications in science, business, technology and economics. This course includes a computer laboratory component emphasizing modeling and numerical methods. Course assumes familiarity with algebra and trigonometry.

GISAT 160. Problem Solving Approaches in Science and Technology. 3 credits.

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

GISAT 251. Topics in Applied Statistics in ISAT. 3 credits.

This course introduces statistical thinking – the discipline and methods for collecting, analyzing, and interpreting data for making decisions, doing science, and understanding our world. Topics covered include an introduction to data analysis methods, probability and chance, statistical reasoning and inference, and experimental design. The course includes a laboratory component emphasizing hands-on analysis of data taken from a variety of applications in ISAT. *Prerequisite: Sophomore standing or permission of the instructor.*

GJUST 225. Justice and American Society. 4 credits.

This course introduces the student to the concept and reality of justice in America. It is a broad-based, interdisciplinary consideration of justice: What it is, what it means, and how it intersects with society and social institutions in American. Philosophical and theoretical underpinnings of the notion of justice and the historical context of justice in American society will be considered.

GKIN 100. Lifetime Fitness and Wellness (2, 2). 3 credits.

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

GMADE 150. Mediated Communication: Issues and Skills. 3 credits.

Study of how mediated communication shapes the content, meaning and impact of spoken, written and pictorial messages. Emphasis on the skills required to integrate speech, text and imagery into mediated presentations. Consideration of issues involving the critical evaluation of mass-mediated communication, their effectiveness and influence.

***MATH 103. The Nature of Mathematics.** 3 credits.

Topics such as geometry, computing, algebra, number theory, history of mathematics, logic, probability, statistics, modeling and problem solving intended to give students insight into what mathematics is, what it attempts to accomplish and how mathematicians think.

***MATH 105. Quantitative Literacy and Reasoning.** 3 credits. *Offered fall and spring.*

Applications and interpretation of numerical information in context. Selection and use of appropriate tools: scientific notation, percentages, descriptive summaries, absolute and relative changes, graphs, normal and exponential population models, and interpretations of bivariate models. Making informed decisions and effectively communicating them. Identifying limitations of information sources, assessing reasonableness of results, and basic concepts of confidence amid uncertainty. Not open to majors in mathematics or statistics

MATH 107*-108. Fundamentals of Mathematics I-II. 3 credits each semester.

These courses, along with MATH 207, form a sequence that covers the topics of sets, logic, numeration systems, development of real numbers, number operations, number theory, geometry, measurement, algebra, functions, probability and data analysis. Sequence is required for early childhood, elementary, or middle school teacher licensure. *Prerequisite for MATH 107: Prerequisite for MATH 107: MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam. Prerequisite for MATH 108: MATH 107.*

***MATH 220. Elementary Statistics.** 3 credits.

Descriptive statistics, frequency distributions, sampling, estimation and testing of hypotheses, regression, correlation and an introduction to statistical analysis using computers. *Prerequisite: MATH 105 or sufficient score on the Mathematics Placement Exam.*

***MATH 231. Calculus with Functions I.** 4 credits.

MATH 231 and MATH 232 form a sequence that combines first-semester calculus with algebra and trigonometry. The sequence is designed for students whose pre-calculus skills are not strong enough for MATH 235. Calculus material in MATH 231 includes limits and derivatives of algebraic functions and their applications. *Prerequisite: MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam. NOTE: MATH 231-232 together are equivalent to MATH 235 for all prerequisites. Not open to students who have already earned credit in MATH 235.*

***MATH 235. Calculus I.** 4 credits.

Differential and integral calculus of functions of one variable. Sequences and infinite series. *Prerequisite: Sufficient score on the Mathematics Placement Exam. MATH 235 is not open to students who have already earned credit in MATH 232.*

GMUS 200. Music in General Culture. 3 credits.

Designed to increase the student's perceptual ability in listening to music and to encourage an interest in both familiar and unfamiliar music. Primary study will be on music from the classic, Western heritage. Folk, jazz, popular and non-Western music may also be considered.

GMUS 203. Music in America. 3 credits.

Knowledge and skills to increase the student's perceptual ability in music listening with a survey of American music; examining relationships between popular and classical music styles.

GMUS 206. Introduction to Global Music. 3 credits.

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

GPHIL 101. Introduction to Philosophy. 3 credits.

An introduction to the basic problems and concepts of philosophy – the nature of man and the self, ethics, theories of knowledge, philosophy of religion, etc., as revealed in the writings of the major philosophers.

GPHIL 120. Critical Thinking. 3 credits.

An introduction to the techniques for analyzing and evaluating information in everyday experience. The functions of language will be discussed. Techniques for judging the strengths of arguments and the probable truth of the arguments' premises will be examined. This course does not meet the philosophy requirement for the B.A. degree.

GPHIL 150. Ethical Reasoning. 3 credits.

An introduction to the principles and techniques of critical thinking in ethics, including analysis of arguments and fallacies, ethical theories, and applications of moral principles to moral issues. This course does not meet the philosophy requirement for the B.A. degree.

***PHYS 140. College Physics I.** 3 credits.

The first semester of a non-calculus sequence in general physics. Topics include principles of mechanics, thermal properties of matter, wave motion and sound. A working knowledge of algebra and trigonometry is required.

***PHYS 140L. General Physics Laboratory.** 1 credit.

This laboratory course is designed to complement and supplement the PHYS 140 and PHYS 240 lecture courses. *Prerequisite or corequisite for PHYS 140L: PHYS 140 or PHYS 240.*

***PHYS 215. Energy and the Environment.** 3 credits.

Energy use, sources and trends; fossil fuels, heat-work conversions, thermodynamic restrictions and electric power production; nuclear fission reactors and fusion energy; solar energy and technologies; alternative energy sources; energy storage; energy conservation; issues of waste and safety. Environmental, social and economic aspects will be discussed. Not open to ISAT majors scheduled to take ISAT 212 as part of their degree requirements. *Prerequisites: One college course in science and one in mathematics.*

***PHYS 240. University Physics I.** 3 credits.

Kinematics, dynamics, energy and momentum conservation, oscillatory motion, fluid mechanics and waves. *Corequisite: MATH 232 or MATH 235.*

GPOSC 200. Global Politics. 3 credits.

An exploration of political, social and economic issues and structures existing within and between states in the contemporary global community. Students are introduced to alternative approaches to analyzing these issues in diverse cultures and political settings.

GPOSC 225. U.S. Government. 4 credits.

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

GPSYC 101. General Psychology. 3 credits.

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

GPSYC 122. The Science of Vision and Audition. 3 credits.

A study of human interaction with light and sound waves. Topics include physiological and perceptual mechanisms for processing light and sound, along with connections to real-world applications (e.g., human factors and careers within vision science and audition). Includes activities designed to provide students with in-depth, hands-on experience with course topics.

GPSYC 160. Life Span Human Development. 3 credits.

An introduction to human development. Emphasis is on life span processes within physical, emotional, cognitive, psychosexual, social, personality and moral development.

GREL 101. Religions of the World. 3 credits.

An investigation of the world's major religions which will give attention to their origin, history, mythology and doctrines.

GSCI 101. Physics, Chemistry and the Human Experience. 3 credits.

A survey of the fundamental concepts, principles and ideas of chemistry and physics. Particular emphasis is placed on understanding the development of the principles and their application in understanding the world around us. *Prerequisite or corequisite: One of the following: MATH 103, MATH 107, MATH 205, MATH 220, MATH 231 or MATH 235.*

GSCI 104. Scientific Perspectives. 1 credit.

A study of topics selected to allow students to participate in mathematical and scientific problem solving approaches to knowledge. *Prerequisite or corequisite as indicated on MyMadison.*

GSCI 121. The Physical Nature of Light and Sound (3, 1). 4 credits.

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

GSCI 161. Science Processes. 1 credit.

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

GSCI 162. The Science of the Planets. 2 credits.

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

GSCI 163. The Matter of Matter. 1 credit.

This course will focus on the topic of matter: particle theory, forms, characteristics, properties, atomic theory and models, conservation of mass and energy, nuclear reactions, heat transfer within matter, chemical bonds and chemical structures.

GSCI 164. Physical Science: Learning Through Teaching. 2 credits.

A hands-on conversation on how technology, science and engineering come together to describe our world. The course will cover many of the traditional concepts presented in an introductory physics course. The course will treat coordinate systems and their use in describing motion, forces and energy conservation, thermodynamics (temperature, pressure, heat), light (color, ray model, wave model), waves (sound), magnetism, and electricity. The course will indirectly reinforce skills developed in other courses in the cluster including scientific tools (mathematics, graphing, diagramming, experimenting and analyzing data) and using informational resources. *Corequisite: GSCI 163.*

GSCI 165. The Way Life Works. 1 credit.

Patterns, energy, information, life's machinery, feedback, community and evolution. These are major themes in how life works. This course will use these themes as a backdrop for looking at the way life works.

GSCI 166. Environment in Context. 2 credit.

This course will use environmental issues and topics as a unifying concept to introduce ecology, environmental chemistry and evolution. Topics such as resource utilization and conservation, air and water quality issues, ecological succession, community processes, biological diversity and evolution may be used to illustrate the concepts and to demonstrate the relationship between science and public policy.

GSOCI 110. Social Issues in a Global Context. 3 credits.

This course introduces the discipline of sociology from a macrosociological perspective, emphasizing large-scale changes in social organization and institutions. We examine the global forces that shape societies, and the historical, political, social, cultural and economic origins of contemporary social problems. We consider competing theoretical models used in the study of social change as well as the conceptual and methodological challenges in analyzing societies different from one's own.

GSOCI 140. Microsociology: The Individual in Society. 3 credits.

This course introduces the discipline of sociology and the subfield of microsociology. We examine the mutually constitutive relationship between the individual and society. Questions addressed include: How does society influence how we think, feel, believe, act, and interact with others? What influences the self, social identity, shared social meanings, social roles, and one's position in society? How do we, as individuals and as members of social groups, recreate, contest, and change society?

GTHEA 210. Introduction to Theatre. 3 credits.

Study of the theatre as an art form. Emphasis on introducing students to a broad spectrum of theatrical activity and opinion. Consideration of the components that comprise a theatre event including acting, directing, design, costuming, lighting and playwriting.

GWRTC 103. Critical Reading and Writing. 3 credits.

Fosters reflective, critical reading, writing, and research in public discourse, culture, humanities, technology, and science. Challenges students to consider cross-disciplinary modes of inquiry through multiple genres with an attention to enlightened, global citizenship. Emphasizes revising for rhetorical effectiveness. *GWRTC 103* fulfills the General Education Cluster One writing requirement and is a prerequisite for all WRTC courses numbered 200 or above.

Geographic Science

Department of Integrated Science and Technology**GEOG/HUMN 301. Introduction to Natural Disasters.** 3 credits.

This course is designed to give students an overview of the various types of natural disasters; a look at the world regions that are most vulnerable to each type of disaster; and, a preview of disaster planning, management, relief and response as related to natural disasters.

GEOG 161. Geospatial Tools and Techniques. 1-6 credits, variable.

An introduction to the use of geospatial tools, such as geographic information systems (GIS), global positioning systems (GPS) and remote sensing, applied to a variety of areas, including cultural geography, environmental science, ecology, geology and public planning.

GGEOG 200. Geography: The Global Dimension. 3 credits.

This course promotes global understanding through the study of humans, their institutions and processes, and the resulting interactions between humans and the environment. The course will include the study of Western and non-Western peoples and their social, cultural, political and economic relationships.

GEOG 210. Physical Geography (2, 2). 4 credits.

This introductory course is an examination of systems and processes that influence patterns of Earth's atmosphere, biotic communities, soils and landforms at multiple spatial and temporal scales. Included are classroom and laboratory experiences that are geared toward investigating interrelationships among atmospheric conditions, Earth's natural surface characteristics and human-induced modifications of Earth's features.

GEOG 215. Cartography and GIS. 3 credits.

An introduction to cartography and geographic information systems (GIS). Basic concepts will be illustrated with examples from a variety of application areas including cultural geography, environmental science, land use and planning and business.

GEOG 216. Earth Observation and GPS. 3 credits.

An introduction to remote sensing, global positioning system (GPS) and computer fundamentals in Geographic Science. Basic concepts will be illustrated with practical applications, including hands-on work collecting data with GPS units and exploring remote sensing images from a variety of different instruments. Environmental applications will be featured.

GEOG 230. Spatial Thinking and Problem Solving. 3 credits.

Introduction to the critical thinking skills associated with problems with inherent spatial components. Identification of the spatial elements of a given problem, the data requirements for addressing that problem, collections/acquisitions and organization of data, and use of geographic information systems to explore spatial patterns relevant to the problem of interest. *Prerequisites: GEOG 215 with a "C" or better, GEOG 216 with a "C" or better and an introductory course in statistics (GISAT 251 or equivalent) or permission of instructor.*

GEOG 260. Selected Topics in Geography. 3 credits.

Exploration of geographic topics, tools or techniques of current interest. Can be repeated as course content changes.

GEOG 280. Human Geography: The Cultural Landscape. 3 credits.

The course themes are human culture, cultural variations over the face of the Earth and how these variations are related to selected global issues. Topics covered include world demographics, world religions and languages, patterns of human migration, political systems and human conflict, agricultural systems, and impact on the physical world.

GEOG 290. Human-Environment Interactions. 3 credits.

This course evaluates human-environment interactions from a holistic point of view. It incorporates geographic perspectives of these interactions, which include political, cultural, social, economic, and ethical factors that influence how people perceive, impact, and manage the natural world. The course will emphasize geographic theories of resource use, humans as part of the landscape and human vulnerability to environmental changes. *Prerequisites: GEOG 210 with a "C" or better and GEOG 280 with a "C" or better.*

GEOG 300. Population Geography. 3 credits.

An introduction to population measurement, sources of population data and modern population problems. Topics include distribution, the changing age structure and migration issues affecting the U.S. At the global scale, topics include distribution, global migration patterns, the refugee crisis and prospects for feeding the rapidly increasing human population.

GEOG 305. History and Philosophy of Geography. 3 credits.

Topics from the classical period to the modern period include 20th century theories and paradigm shifts involving cultural geography, physical geography, human-environment traditions, regional geographies, and modeling. Diverse philosophies such as quantitative/positivist, qualitative/humanistic, social theory, and GIS are viewed for their contributions to the discipline of geography. *Prerequisite: A grade of "C" or better in GEOG 210 and GEOG 280, and junior standing or permission of the instructor.*

GEOG/GEOL 310. Environmental Issues. 1-4 repeatable credits, no limit.

Courses cover environmental issues such as air pollution, forest and wildlife management, water, resource management, soils and land use, and energy and the environment (among other topics). Courses examine the interface between humans and environmental systems while addressing the impact of social, economic and political systems and activities on the environment. May be repeated as course content changes.

GEOG 311. Endangered Environments. 3 credits.

In this course an investigation is made of a selected number of environmental problem areas around the world. Some examples include the temperate rainforest of Valdivia, South America, the tropical rainforests of Borneo and the Aral Sea of Eastern Europe. In the course, students will explore physical aspects of each environment and explore human impact and potential solutions to the problems.

GEOG 315. Field Studies in Geography. 3 credits.

This course exposes students to the methods and techniques commonly used by geographers while conducting fieldwork. The course will cover identifying and defining a researchable project, designing and testing data collection methods, and different methods of collecting, recording and presenting data. Students will also become familiar with various types of field equipment.