Geography (GEOG)

GEOG 1100. Introduction to Geography. 3 Hours.
A broad introduction to the field of geography, with its various traditions, subfields, and associated technologies. Topic areas covered include the multiple aspects of cultural and physical geography and tools used in the discipline, such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS).

GEOG 1101. Introduction to Human Geography. 3 Hours.
A survey of global patterns of resources, population, culture and economic systems. Emphasis is placed upon the factors contributing to these patterns and the distinctions between the technologically advanced and less advanced regions of the world.

GEOG 1102. World Regional Geography. 3 Hours.
Examination of the interaction among the developed and developing regions of the world. Particular emphasis is placed on the interrelationships of historical, cultural, economic and political elements in critical areas of the world.

GEOG 1103. Geographic Perspectives on Multiculturalism in the U.S.. 3 Hours.
Geographic factors underlying multiculturalism and ethnic relationships in the U.S. Three interrelated themes are emphasized: the spatial development and organization of culture; population growth, migration, and urbanization; and the spatial dimensions of political, economic, and social processes.

GEOG 1105. Health Geography and Pandemics. 3 Hours.
An introduction to human-environment interactions and the influence these interactions have on public health and pandemics. The focus of this course will be on geographical patterns of health and pandemics from the viewpoint of populations rather than individuals.

GEOG 1110. Our Hazardous Environment. 3 Hours.
Also offered as GEOL 1110. A detailed examination of physical environmental hazards that influence human health and habitation. Lectures focus on the causes, processes, and results of naturally occurring and human-induced geologic, hydrologic, and atmospheric events, such as earthquakes, mudflows, floods, hurricanes, soil erosion, and nuclear and toxic waste. Some mathematics is used.

GEOG 1112K. Introduction to Weather and Climate. 4 Hours.
prerequisites: MATH 1001 or higher. Weather components, processes, and their measurements. Climatic elements and their control factors and geographic classification of climatic and vegetation types are also discussed.

GEOG 1113. Introduction to Landforms. 3 Hours.
Prerequisite or corequisite: MATH 1101 or higher. Introductory analysis and classification of major types of land surfaces, stressing geographic characteristics. Study and interpretation of relationships between landforms and other phenomena through maps, aerial photos, and field observations. World coverage with emphasis on North America.

GEOG 1113K. Introduction to Land Forms. 4 Hours.
Prerequisite or corequisite: MATH 1001 or higher. Introductory analysis and classification of major types of land surfaces, stressing geographic characteristics. Study and interpretation of relationships between landforms and other phenomena through maps, aerial photos, and field observations. World coverage with emphasis on North America.

GEOG 1113L. Introduction to Landforms Lab. 1 Hour.
Prerequisite or corequisite: GEOG 1113. A laboratory course to accompany GEOG 1113, with exercises on the geographic nature of landforms and the analysis of landforms using topographic maps.

GEOG 1120. Introductory Oceanography. 3 Hours.
An introductory examination of the physical, chemical, biological, and geological characteristics of the Earth’s oceans. Effects of human activity on marine environments and resources as well as management of coastal resources will be discussed. Development of geographic skills and map interpretation through charts, graphs, and ocean models will be included.

GEOG 1125. Resources, Society, and Environment. 3 Hours.
Interactions between physical systems and human activities and their effects on environmental quality and stability. Topics include geography of population and resource consumption, food production, water and air quality, energy policy, land/biotic resource management. Contrasting social, ethical, and technological perspectives on environmental concerns are explored.

GEOG 2010. Tools of Environmental Geoscience. 3 Hours.
Also offered as GEOL 2010. An introduction to research techniques for the incoming environmental geoscience majors. This course includes an overview of the discipline and the tools used in geoscience research. Topics may include laboratory safety, research methods, exploration of resources (library and Internet), methods of data collection, data analysis, and scientific reporting of results.

GEOG 2011. Introduction to Geographic Information Science. 3 Hours.
Prerequisite: GEOG 2010 or permission of instructor. Introduction to principles and applications of Geographic Information Science (GIS). This course will examine spatial data acquisition, management, retrieval, analysis, and output. Instruction will involve computer examples and exercises that emphasize real-world problem solving.

GEOG 3020. Global Climate Change. 3 Hours.
Also offered as GEOL 3020. Prerequisites: GEOG 1112K and either GEOG 1113K or GEOL 1121K. An overview of global climate change based on changes to the Earth's atmosphere, lithosphere, and hydrosphere. This course provides an analysis of past climates in the geologic, biologic, and hydrologic record, the impact of fossil fuel utilization on climate over the last 250 years, and links to ice sheets and oceans. The course examines implications of global climate change on the human population, including diseases and severe weather, as well as biogeography, including the extinction of threatened species.

GEOG 3050. Computer Cartography and Image Analysis. 3 Hours.
Prerequisite or corequisite: GEOG 2010 or GEOL 2010. An introduction to digital production of general and thematic maps. Lectures and laboratory exercises cover principles of cartography and remote sensing as well as the manipulation and visualization of spatial data and imagery.

GEOG 3051. Introduction to Geographic Information Systems. 3 Hours.
Prerequisite: Junior standing or permission of the instructor. An examination of geographic information systems, including methods of capture, storage, analysis, and display of spatially-referenced data. Laboratory exercises provide experience with typical GIS operations and applications.

GEOG 3052. Advanced Geographic Information Systems. 3 Hours.
Prerequisite: GEOG 2011 or 3051. Advanced applications of GIS including: overlay analysis, writing short macros for repetitive operations, spatial modeling and technical support of complex land use and natural resource management decision making. Laboratory exercises designed to form a cartographic and software portfolio for students.

GEOG 3053. Application Issues in Geographic Information Systems. 3 Hours.
Prerequisite: GEOG 3051. Operational and planning issues in GIS. Students will learn which issues need to be considered when proposing and implementing software/hardware GIS and will have opportunities to evaluate how a GIS can be used to solve specific planning problems.

GEOG 3054. Introduction to GPS. 2 Hours.
Prerequisite: Junior standing or permission of the instructor. An introduction to global positioning systems (GPS) including reference systems, mapping, positioning methods, sources of error, data collection methodologies, and field procedures. Hands-on exercises will provide experience with typical GPS operation and application.

GEOG 3100. Regional Planning and Environmental Management. 3 Hours.
Prerequisite: Consent of instructor. Introduction to planning for economic development, service provision and resource management at scales larger than municipalities with an emphasis on the environmental impacts of planning policy and regulation.

GEOG 3120. Geosciences Field Trip. 3 Hours.
Also offered as GEOL 3120. Prerequisite: GEOG 1113K or GEOL 1121K. A study of the geology and geography of a selected region during the first week, followed by a two-week field trip to points of interest. The interactions among geology, surficial processes, and organisms and how those interactions impact humans will be emphasized. Field trip destination is different each summer. Student fee required. Offered only during Summer Session I.

GEOG 3150. Meteorology and Climatology. 3 Hours.
Prerequisites: GEOG 1112K. A detailed examination of atmospheric motions and climatic controls including, the Earth's radiation and energy balance, air mass dynamics, weather systems, and past and present climates of the Earth.

GEOG 3200. History of Life. 3 Hours.
Also listed as GEOL 3200. Prerequisites: Sophomore standing and consent of instructor. Principles of paleontology with emphasis on the history of life including vertebrates. Includes an account of the outstanding forms of life from the beginning of earthtime to the present, and those paleontologically significant groups that are uncommon, different, or extinct today.

GEOG 3210. Introduction to Hydrology. 4 Hours.
Also listed as GEOL 3210. Prerequisites: GEOL 1121K or GEOG 1112K, and GEOG 1113K. An introduction to surface and sub-surface hydrology, examining components of the hydrologic cycle. Topics include local and global water balance, precipitation, interception and infiltration, runoff, stream flow, water storage, and groundwater. This course makes use of some mathematical equations.

GEOG 3240. Hydrogeology. 4 Hours.
Also listed as GEOL 3240. Prerequisites: GEOL 1121K or GEOG 1112K, and GEOG 1113K. Introduction to the hydrology of groundwater. Study of the subsurface part of the hydrologic cycle and description of the occurrence, movement, and management of groundwater as a renewable resource. Special emphasis on surface water-groundwater interactions, sensitivity of karst aquifers to environmental stresses, water quality, groundwater contaminations, and field methods that are applied in groundwater studies. Weekend field trip(s) required.

GEOG 3300. Process Geomorphology. 4 Hours.
Also listed as GEOL 3300. Prerequisite: GEOL 1121K, or GEOG 1112K and GEOG 1113K. An introduction to process geomorphology examining landforms and their formative processes. Topics include weathering and slope, fluvial, coastal, aeolian, glacial, and periglacial processes, and the application of soils to geomorphology. This course makes use of some mathematical equations. Field trip required.

GEOG 3310. Physiography of North America. 3 Hours.
Prerequisites: GEOL 1121K, or GEOG 1112K and GEOG 1113K, or consent of the instructor. The physiographic description, including the landforms, soils, structural framework, climate, plant and animal geography, natural resources, and the unique environmental problems of each major physiographic province of the United States and Canada, including Alaska, Hawaii, and Puerto Rico.

GEOG 3320. Geomorphology of Fluvial and Coastal Environments. 3 Hours.
Also listed as GEOL 3320. Prerequisite: GEOG 3300. An examination of processes and landforms in fluvial (river) and coastal environments. Fluvial topics include channel geometry and pattern, characteristics of flow, sediment load, bedforms, and floodplains. Coastal topics include the study of waves and tides, coastal sediment transport, beaches, and the effects of changing sea level. This course makes use of some mathematical equations.

GEOG 3330. Geology, Hydrogeology, and Environmental Issues in Georgia. 3 Hours.
Also listed as GEOL 3330. Prerequisite: GEOL 1121K. An overview of the geologic framework of Georgia and surrounding states, with emphasis on topical hydrogeologic and environmental issues that impact Georgia's environment. Students receive the appropriate geologic background necessary for careers that address environmental issues in the southeastern United States. One or more field trips to locations in the area will be included.

GEOG 3410. Cultural Geography. 3 Hours.
Prerequisite: consent of the instructor. A study of the Earth as the home of humankind, emphasizing the spatial and functional complexes of human geography. Topics to be considered are population, settlement form, settling processes, resources, and economic, political, and societal organizations.

GEOG 3510. Urban Community Planning. 3 Hours.
Principles and applications of planning for neighborhoods, towns and cities with an emphasis on the United States. Topics covered include: public services, landuse decision making, economic development, growth management and the role of nongovernment organizations.

GEOG 3610. Economic Geography. 3 Hours.
Prerequisites: GEOG 1102K or GEOG 1112K, and GEOG 1113K, or consent of the instructor. A study of areal variations in human economic activities as related to production, exchange, and consumption of economic goods and services. Emphasis is placed on location of economic activities and related theories.

GEOG 3710. Environmental Soil Science. 4 Hours.
Also offered as GEOL 3710. Prerequisites: CHEM 1211 and CHEM 1211L; GEOG 1113K or GEOL 1121K. Soil properties, distribution and classification, factors of soil formation, and the relationships among soils, geomorphology, and the environment, stressing analysis and use of soils and soil databases for proper urban, agricultural, and environmental land use.

GEOG 3810. Introduction to Biogeography. 3 Hours.
Also offered as BIOL 3810. Prerequisites: Three of the following courses: GEOG 1112, GEOG 1113, BIOL 2010, BIOL 2230, or BIOL 2270. An overview of factors controlling the distribution of plants and animals on the Earth. Topics discussed include ecological and evolutionary processes, geophysical and climatic phenomena, and historical and anthropogenic events that have influenced current distributions.

GEOG 3910. European Geography. 3 Hours.
A survey of European geography, with a special emphasis on the European Union. Topic areas covered include physical, economic, political, and cultural geography of Europe.

GEOG 3920. Geography of the Middle East. 3 Hours.
A survey of the nations of the Middle East, with a special emphasis on the Arab-Israeli conflict. Topic areas covered include physical, economic, political, and cultural geography of the Middle East.

GEOG 4700. Field Methods in Environmental Geography. 4 Hours.
Prerequisites: Junior standing and consent of instructor. Study of field techniques and field problems in physical geography. Course includes classroom presentations, field projects, field trips, and writing technical reports.

GEOG 4710. Statistics for Geoscientists. 3 Hours.
Prerequisite: MATH 1401 or permission of instructor. A survey of statistical methods used by geoscientists to solve real-world problems. The course will examine the various quantitative methods available to collect, analyze, and interpret geographic data; enable students to read and understand statistical results presented by geoscientists; help students to apply the correct statistical methods for the collection, analysis, and interpretation of their own data.

GEOG 4800. Internship in Environmental Geosciences. 3-6 Hours.
Prerequisite: Consent of instructor and Department Head. Graded "Satisfactory" or "Unsatisfactory." A supervised, practical experience using environmental geosciences skills in an appropriate organization. The course provides students with an opportunity to apply skills learned during pursuit of the environmental geosciences degree to real world situations.

GEOG 4860. Geosciences Senior Seminar. 1 Hour.
Also offered as GEOL 4860. Prerequisites: Junior or Senior standing and consent of the instructor. Graded "Satisfactory" or "Unsatisfactory". Exploration and selection of which option of experiential learning students will pursue as a senior. Each student will submit a proposal for approval by their supervising faculty member(s).

GEOG 4861. Senior Thesis. 3 Hours.
Also offered as GEOL 4861. Prerequisite: GEOG 4860 or GEOL 4860. Part of a two-course sequence in which a research project is designed by the student and supervising faculty member(s) in an approved area of interest. Students will collect sample data, conduct data analysis,and write a thesis.

GEOG 4862. Thesis Presentation. 2 Hours.
Also offered as GEOL 4862. Prerequisite: GEOG 4861 or GEOL 4861. The third course in a three-semester research project designed by the student and supervising faculty member(s) in an approved area of interest. Students will present their senior thesis project in both oral and poster form to the department or at an approved professional meeting.

GEOG 4900. Special Topics in Geography. 1-6 Hours.
Prerequisite: consent of instructor. Topic to be assigned by instructor; the course may be repeated more than once if the topics are different.

GEOG 4990. Directed Study in Geography. 1-6 Hours.
Prerequisites: at least Junior standing and permission of advisor, instructor, and Department Head. Study in area or subject not normally found in established courses offered by the department; may also allow students to explore in more detail and/or depth an area or subject covered by the department.