

4380. Latin American and Spanish Film for Advanced Oral and Written Practice. 3 hours. Spanish-language films are used as a platform for advanced oral, written and listening comprehension, with an emphasis on critical thinking skills through analysis of linguistic and cultural variety in the Spanish-speaking world. Prerequisite(s): one of the following: SPAN 3030, 3050, 3060, 3070, or 3160.

4430. Sexualities in Contemporary Spanish Cinema. 3 hours. Study of sexualities in contemporary Spanish cinema in the light of the socio-political and historical context of Spain, carried out in relation to topics such as gender, identity, class, politics, feminism. Prerequisite(s): 6 hours of advanced Spanish or native proficiency.

4500. Spanish for Teachers. 3 hours. Emphasizes the Spanish language skills needed in the teaching field to communicate with Spanish speaking students and their parents/guardians. Includes specialized vocabulary, scenarios, sample dialogues and information related to a variety of school-related settings. Prerequisite(s): SPAN 2050 or equivalent.

4900-4910. Special Problems. 1–3 hours each.

4951. Honors College Capstone Thesis. 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

4970. Contemporary Spanish Culture Through Cinema. 3 hours. Study of different cultural topics relevant in contemporary Spain. Topics include women in contemporary Spanish cinema, religion and Spain in contemporary Spanish cinema, globalization, Spain and Spanish cinema. Prerequisite(s): 6 hours at Spanish 3000 level (advanced Spanish) or Spanish native speaker. May be repeated for credit as topics vary.

French

see Foreign Languages and Literatures

General Music

see Music

Geography

Archaeology, ARCH

2500. Introduction to Archaeology. 3 hours. A survey of the techniques, methods and theories of archaeology. An important focus of the course is on the reconstruction of the culture and ecology of prehistoric societies in both the Old World and the New World. (Same as ANTH 2500.)

2800. Archaeological Science. 3 hours. (3;2) Human prehistory and methods of scientific investigation; emphasizes archaeological cultures from early hominid sites in East Africa to entry of peoples into the New World. Course

stresses methods of interdisciplinary research, including geology, paleoenvironmental reconstruction, paleodiet and artifact-faunal analysis. Labs employ artifacts and bones for study. *May be used to satisfy a portion of the Natural Sciences requirement of the University Core Curriculum.*

2900. Special Problems. 1–3 hours.

3650. Origins of Civilization. 3 hours. Comparative study of the cultural, technological and ecological patterns of change leading to urban civilizations. Surveys the archaeological evidence for the domestication of plants and animals, and the emergence of villages. The art, architecture, economic and sociopolitical characteristics of early civilizations in the Near East and Mesoamerica are examined. Prerequisite(s): ANTH 1010 or 2250 or ARCH 2500, or consent of department. (Same as ANTH 3650.)

4620. Topics in Archaeology. 3 hours. Selected topics of interest and significance in archaeology. Subjects such as historic archaeology, Texas archaeology, New World archaeology, Old World archaeology and Meso-American archaeology are potential topics offered during different terms/semesters. Prerequisite(s): ARCH 2500 or consent of department. May be repeated for credit as topics vary. (Same as ANTH 4620.)

4810. Archaeological Field School. 6 hours. Comprehensive training in site survey, excavation techniques, laboratory processing, restoration and analysis of archaeological materials through direct participation in an archaeological field project. Prerequisite(s): ARCH 2500 or consent of department. Held off campus; room and board fees may be required. Usually offered only during the summer months and based on the availability of field projects. This course is taught in cooperation with the Institute of Applied Sciences. (Same as ANTH 4810.)

Geography, GEOG

1170 (GEOG 1302). Culture, Environment and Society. 3 hours. (*Regional Science*) Exploration of the dynamic relations between culture and environment addressing ethnic diversity and conflict, development and underdevelopment, settlement patterns, movement of commodities and people (including refugees), and environmental degradation. *Satisfies the Social and Behavioral Sciences requirement of the University Core Curriculum.*

1200 (GEOG 1303). World Regional Geography. 3 hours. (*Regional Science*) Geographical characteristics, major problems and role of major world regions; emphasis on Central and South America, Africa, Middle East and Asia. *Satisfies a portion of the Understanding the Human Community requirement of the University Core Curriculum.*

1710 (GEOG 1401). Earth Science. 3 hours. (3;2) (*Earth Science*) Principles and processes of physical geography. Introduction to mapping, weather and climate, soil and vegetation, and landforms of rivers, coasts and deserts. *May be used to satisfy a portion of the Natural Sciences requirement of the University Core Curriculum.*

2900. Special Problems. 1–3 hours. Individual readings and laboratory research projects in geology, earth and regional sciences.

3010. Economic Geography. 3 hours. (*Regional Science*) Geographic principles applied to understanding regional specialization of economic activity. National and international variations in agriculture, energy, manufacturing, service activities and commodity flows. Prerequisite(s): GEOG 1170 or 1200 or consent of department.

3100. Geography of the United States and Canada.

3 hours. (*Regional Science*) Regional analysis of the physical and human geography of the United States and Canada. Satisfies a portion of the Understanding the Human Community requirement of the University Core Curriculum.

3190. Quantitative Methods in Geography.

3 hours. Application of statistical techniques and mathematical models to spatial analysis, including both point and areal patterns. Examples drawn from both earth and regional science. Prerequisite(s): MATH 1680 or consent of department.

3750. Geography of Contemporary Sub-Saharan Africa.

3 hours. (*Regional Science*) Deals with the problems and prospects of development in Sub-Saharan Africa; examines the opportunities, constraints and dilemmas of Sub-Saharan Africa's physical and cultural landscape, contemporary problems and the challenge and prospect of development and globalization. Satisfies a portion of the Understanding the Human Community requirement of the University Core Curriculum.

3800. Geography of Texas. 3 hours. (*Regional Science*) The physical geography of Texas and the human response to the physical environment.

4030. British Isles Field School. 6 hours. Application of geographical field techniques in the British Isles and Ireland. The field school is centered on five basic sites – Plymouth, Cork, Galway, Aberystwyth and Edinburgh. At each site, students conduct one-day human and physical geography field exercises. Topics include mapping historic changes in commercial functions in Plymouth; combining field mapping, air photo and map analysis to measure coastal erosion in Cork; field survey of rural service provision in Tipperary County; physical and human dimensions of flood hazard in Aberystwyth; comparison of medieval, Georgian and modernist town planning in Edinburgh. Duration of field work is approximately three weeks. Prerequisite(s): GEOG 1710 or GEOL 1610, and GEOG 1170 or GEOG 1200, or consent of department.

4040. Ghana Field School.

6 hours. (*Regional Science*) Geography of health and economic development in Ghana. Trip includes visits to herbalists, hospitals and rural clinics, a gold mine, slave castles, and industrial sites such as cocoa processing plants and timber mills. Duration of field work is approximately three weeks. Prerequisite(s): GEOG 3750 or consent of department.

4050. Cartography and Graphics.

3 hours. (1;2) Construction and interpretation of topographic maps; thematic mapping of geographically referenced data; field mapping and surveying techniques; introduction to global positioning systems and computer cartography.

4060. Applied GIS: MapInfo Professional®. 3 hours. (1;2) An introduction to conceptual and practical aspects of geographic information systems. Emphasis on applications, using socio-demographic and business examples. Topics include: importing and mapping census data, creating and editing map attribute databases, geocoding, buffering, aggregating data, thematic maps and applications.

4120. Medical Geography.

3 hours. (*Regional Science*) Locational aspects of disease and health care, spatial patterns of diseases, health facilities, health care policies and problems. Prerequisite(s): GEOG 1170 or 1200 or consent of department.

4170. Map-Air Photo Analysis. 3 hours. Evaluation and interpretation of aerial photography and satellite images from the most common sensing devices. Digital processing of satellite data on microcomputer. Prerequisite(s): GEOL 1610 or GEOG 1710 or consent of department.

4210. Urban Geography. 3 hours. (*Regional Science*) The urban geography of advanced nations. Specific topics include urban systems analysis, the internal geography of cities and contemporary spatial and social changes in urban areas. Prerequisite(s): GEOG 1170 or 1200 or consent of department.

4220. Applied Retail Geography. 3 hours. (*Regional Science*) Survey of the geographic principles and techniques used in the analysis of retail markets and locations. Examines the key characteristics of modern urban markets and commercial economies, and how geography makes a contribution to effective planning for retail firms. Prerequisite(s): GEOG 1170 or 1200 or consent of department.

4240. Meteorology. 3 hours. (*Earth Science*) Weather elements and controls; air masses and upper air wind flow; emphasis on atmospheric storm systems. Prerequisite(s): GEOG 1710 or consent of department.

4250. Climatology. 3 hours. (*Earth Science*) Description and analysis of world climates; major classifications, controls, regional distribution and change. Prerequisite(s): GEOG 1710 or consent of department.

4350. Geomorphology. 3 hours. (*Earth Science*) Processes of landform analysis. Glacial, desert, fluvial and other settings are reviewed along with basic processes of construction, erosion and weathering. Prerequisite(s): GEOL 1610 or GEOG 1710 or consent of department.

4400. Introduction to Remote Sensing.

3 hours. (2;1) Principles of remote sensing technology, including the physical principles of remote sensing, aerial photography, airborne and space-borne multispectral and hyperspectral imaging, and thermal and microwave imaging. Analytical techniques and applications of remotely sensed data in geography and other fields. Teaches skills for handling both analog and digital remote sensing data through visual interpretation and computer-based digital image processing. Prerequisite(s): GEOG 1710 or GEOL 1610 or consent of department.

4410. Location-Allocation Modeling. 3 hours. (*Regional Science*) Introduction to location-allocation models for service delivery. Covering, p-median, p-center and hierarchical models and their applications; data accuracy, aggregation and distance problems in location-allocation modeling. Prerequisite(s): CSCE 1010 or consent of department.

4420. Conservation of Resources. 3 hours. (*Regional Science*) Designed to encourage an awareness of the need for wise use and proper management of the natural resources on which human welfare depends; how resources management operates in the framework of laws and policies, technical resource knowledge, education, and economics.

4500. Introduction to Geographic Information Systems.

3 hours. (1;0;2*) *These hours are combined lab and lecture. Introduces the concepts and applications of computer-based spatial data handling, known as geographic information systems (GIS) technology. Illustrates the essential methods of GIS and its applications in fields including geography, business, administration, planning and environmental science. Students gain application skills via a series of practical exercises illustrating problem solving strategies using up-to-date GIS software packages. Prerequisite(s): consent of department.

4520. Intermediate Geographic Information Systems.

3 hours. (1;0;2*) *These hours are combined lab and lecture.

Step-by-step approach to spatial data integration and analysis, and cartographic presentation. Topics include data models and structures, map algebra, surface analysis, 3-dimensional rendering, network analysis, sharing and distributing maps, and design and implementation of a GIS project in an area pertinent to the student's interests. Prerequisite(s): GEOG 4500 or consent of department.

4550. Advanced Geographic Information Systems.

3 hours. (1;0;2*) *These hours are combined lab and lecture.

Advanced spatial analysis through the use of specialized software and the design and development of spatial databases and applications. The course includes project planning, database development, data manipulation and analysis, model building, internet mapping, and other advanced topics in spatial analysis. Students gain advanced application skills through practical exercises and implementation of a GIS project in an area pertinent to the student's interests. Prerequisite(s): GEOG 4520 or consent of department.

4560. Visual Programming for Geographic Information Systems.

3 hours. (1;0;2*) *These hours are combined lab and lecture.

Modern GIS embraces the concept of open systems, which means GIS software can be customized to fit specific requirements of individual implementation environments. To meet the high demand of this kind, this course introduces basic concepts and skills of object-oriented programming and GIS customization. Students gain programming skills in accessing maps, data layers, features and geometric objects through laboratory exercises. Prerequisite(s): GEOG 4500 or consent of department.

4570. Special Topics in GIS.

3 hours. (2;1) Current topics and techniques in geographic information systems to complement core course work. Examples include multiuser geospatial data management, web-based map delivery, GIS programming, spatial statistics, applications for specific careers fields and other topics. Course content reflects recent trends in GIS research and the job market. Topics vary by semester. Prerequisite(s): GEOG 4550 or departmental consent. May be repeated for credit.

4750. Fluvial Geomorphology.

3 hours. (Earth Science) Examines the role of rivers as geomorphologic agents. Includes discussion of the systems approach to fluvial geomorphology, fluid mechanics of open-channel flow, sediment and solute transport, channel morphology and river adjustments to environmental change at various time scales. Prerequisite(s): GEOL 1610 or GEOG 1710 or consent of department.

4800. Applied Geography.

3 hours. Capstone course required of all geography majors. Requires comprehensive research paper. Problem solving by application of geographic concepts, methodologies and techniques. Examples drawn from physical and human geography. Prerequisite(s): GEOG 3190 plus 9 advanced hours in geography, and junior or senior standing.

4900-4910. Special Problems.

1-3 hours each.

4920. Cooperative Education in Geography.

3 hours. Job experience in a government agency and/or business for geography majors. Requires participation in a formal project. Prerequisite(s): a minimum of 12 hours completed in the major, a 2.5 GPA in the major and consent of the internship director. May apply toward Group A, Group B or Techniques group at discretion of advisor. May be repeated for credit.

4951. Honors College Capstone Thesis.

3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard

thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

4960. Geography Institute.

3 hours. For students accepted by the university as participants in special institute courses. May be repeated for credit as topics vary.

Geology, GEOL**1610 (GEOL 1403). Introductory Physical Geology.**

3 hours. (3;2) A systematic introduction to geology; internal and external processes that contribute to the earth's rock record; includes consideration of minerals, the earth's interior, volcanoes, mountain building, and terrestrial and oceanic sedimentation. *May be used to satisfy a portion of the Natural Sciences requirement of the University Core Curriculum.*

3000. Geology of Texas.

3 hours. Rocks, minerals, fossils and geologic history of Texas; the state's stratigraphic sequence, structural geology and mineral resources; field trips. Prerequisite(s): GEOL 1610 or GEOG 1710 or consent of department.

3020. Historical Geology.

3 hours. Topics to include stratigraphy, sedimentology, plant and animal fossils, geologic time, continental drift, tectonics, former seas and past environments. Emphasis on geologic history of North America. Field trips. Prerequisite(s): GEOL 1610.

4630. Soils Geomorphology.

4 hours. (3;2) Methods and applications of soils and landform analysis. Soils classification, formation processes and relationships to landforms and vegetation are stressed. Methods of soils description, mapping and physical-chemical analysis are taught, and applications to study of landscape change and land-use planning are emphasized. Prerequisite(s): GEOG 4350 or consent of department.

4650. Environmental Geology.

3 hours. Geologic aspects of land-use planning; earthquakes, landslides, volcanoes, coastal processes, streams and flooding, soils, groundwater, and waste disposal; planning for the future. Prerequisite(s): GEOL 1610 or GEOG 1710 or consent of department.

4710. Geoecology.

3 hours. The structure and function of geoeosystems, examining the dynamic interrelationships of geologic, biologic, climatic and human factors, as components of the global system. Investigates the development of different ecosystems from an evolutionary perspective, while specific processes are considered by integrating concepts and methods from physics, chemistry, biology and geology. The human components of geoeosystems are addressed with perspectives from ecological anthropology and human geography. A significant part of the course is an individual project culminating in a research paper. Prerequisite(s): GEOG 1710 and 8 hours in each field of physics, chemistry and biology, and consent of department.

4850. Introduction to Groundwater Hydrology.

3 hours. Topics to include principles of groundwater flow; aquifer properties and characteristics; geology of groundwater occurrence; groundwater development and methods for assessing and remediating groundwater contamination. Emphasis on application of basic principles. Prerequisite(s): MATH 1100 or equivalent; GEOL 1610 or GEOG 1710 or consent of department.