General Music

see Music

General Engineering Technology

see *Undergraduate Catalog*

Geography

Archaeology, ARCH

5260. Topics in Archaeology. 3 hours. Selected topics of interest and significance in archaeology. Subjects such as archaeological methods, historic archaeology, Texas archaeology, New World archaeology, Old World archaeology and meso-American archaeology are potential topics offered during different semesters. May be repeated for credit as topics vary. Prerequisite(s): consent of department. (Meets with ARCH 4620).

Geography, GEOG

5000. Graduate Seminar. 1 hour. Case study presentations in geography, archaeology and geology, demonstrating research applications, methods and communication strategies. Research presentations by faculty, staff and students from UNT and other organizations. Also a forum for thesis proposals and defenses. Prerequisite(s): graduate standing. May be repeated for credit.

5030. British Isles Field School. 6 hours. Applying geographical field techniques in a foreign setting – the British Isles and Ireland. The field school is centered on five base 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 function 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 fieldwork is approximately three weeks.

5040. Ghana Field School. 6 hours. Geography of health and economic development in Ghana. The 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 fieldwork is approximately three weeks.

5050. Cartography and Graphics. 3 hours. (1:2) Construction and interpretation of topographic maps; thematic mapping of geographically referenced data; field mapping and survey techniques; introduction to geographic information systems and computer graphics.

5060. Applied GIS: MapInfo Professional® 3 hours (1;2) Introduction to conceptual and practical aspects of geographic information systems. Emphasis on applications, using sociodemographic and business examples. Topics include: importing and mapping census data, creating and editing map attribute databases; geocoding, buffering, aggregating data, thematic maps, applications.

5110. Research Design and Geographic Applications. 3 hours. Themes in geographical research, application of scientific method in spatial problem-solving and analysis.

5120. Research in Physical Geography. 3 hours. Study of physical processes manifest at or near the earth's surface. Topics will focus on atmosphere, hydrologic, geomorphic, and tectonic processes and associate phenomena. May be repeated for credit as topics vary.

5130. Research in Human Geography. 3 hours. Study of spatial and ecological relationships with cultural, demographic, political, economic and social forces shaping human settlement patterns. May be repeated for credit as topics vary.

5150. Water Resources Seminar. 3 hours. Topics will be considered from ecology, ground water hydrology and fluvial geomorphology. Special consideration is given to energy flows within the watershed, and the economic, political, legal and ecological consequences of ground water depletion. May be repeated for credit as topics vary.

5170. Map-Air Photo Analysis and Remote Sensing. 3 hours. Evaluation and interpretation of maps and aerial photographs, including infrared imagery and remote sensing techniques.

5190. Advanced Quantitative Techniques. 3 hours. Application of advanced statistical procedures including multivariate techniques to analysis of point and areal patterns and spatial data. Prerequisite(s): GEOG 3190 or consent of department.

5210. Seminar in Urban Geography. 3 hours. Study of current perspectives on geographic inquiry as they relate to metropolitan development and change; the economic, social and political production of space; economic restructuring; segregated spaces; spatial conflicts; corporate and urban hierarchy; urban physical environment. Prerequisite(s): either ECON 4650, GEOG 4210, PSCI 4020 or SOCI 3300.

5250. Climatology. 3 hours. Description and analysis of world climates; major classifications, controls, regional distribution and change. Prerequisite(s): consent of department.

5350. Geomorphology. 3 hours. Processes of land form analysis. Glacial, desert, fluvial and other settings are reviewed along with basic processes of construction, erosion and weathering.

5400. Environmental Modeling. 3 hours. (2;2) Modeling of environmental processes and human impacts on the environment to include topics on sensitivity, calibration and evaluation, watersheds, non-point source pollution, hydrological models, GIS, water and air quality models, pollutant transport and fate, and ecotoxicology. Prerequisite(s): graduate standing or consent of department.

5410. Location-Allocation Modeling. 3 hours. 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): consent of department.

5500. Introduction to Geographic Information Systems. 4 hours. (2;4) Introduction to the concepts and applications of computer-based spatial data handling, known as Geographic Information Systems (GIS) technology. Illustrates the essential methods of GIS and applications in fields including geography, business, administration, planning and environmental science. Students gain application skills via a series of laboratory exercises illustrating problem solving strategies using up-to-date GIS software packages. Prerequisite(s): consent of department.

5520. Intermediate Geographic Information Systems. 4 hours. (2;4) Step-by-step approach to spatial data integration and analysis, and cartographic presentation. Topics include data models and structures, map algebra, surface analysis, three-dimensional rendering, network analysis, sharing and distributing maps, and design and implementation of GIS project in an area pertinent to the student's interests. Prerequisite(s): GEOG 5500 or consent of department.

5550. Advanced Geographic Information System. 3 hours. (1;3) 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 analyses, model building, internet mapping, and project presentation. Students gain advanced application skills through laboratory exercises and implementation of a GIS project in the area of pertinent to the student's interests. Prerequisites: GEOG 5520 or consent of the department.

5560. Visual Programming for Geographic Information Systems. 3 hours. (1;2) 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 using Visual Basic (VB) and Visual Basic for Applications (VBA). Students gain programming skills in accessing maps, data layers, features and geometric objects in GIS. Prerequisite(s): GEOG 5500 or consent of department.

5600. Seminar in Environmental Policy. 3 hours. Analysis and evaluation of environmental policy, including spatial, historical, economic, ecological and institutional dimensions of contemporary resource management issues.

5630. Soils Geomorphology. 4 hours. (3;3) 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 changes and land-use planning are emphasized. Prerequisite(s): consent of department.

5650. Environmental Geology. 3 hours. Geologic aspects of land-use planning; earthquakes, landslides, coastal processes, streams and flooding, soils, groundwater and waste disposal; planning for the future.

5700. Global Dynamics. 3 hours. (2;2) Biosphere-geosphere models on a global scale. Topics include past global changes and climate variability, assessing impacts of global change, dynamic biogeography, interdisciplinary approaches, economics and policy issues, and applications of GCM, GIS and remote sensing. Prerequisite(s): graduate standing or consent of department.

5850. Introduction to Groundwater Hydrology. 3 hours. Topics 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.

5900. Special Problems. 1–3 hours. Research by graduate students in fields of special interest. Prerequisite(s): consent of department.

5950. Master's Thesis. 3 or 6 hours. To be scheduled only with consent of department. 6 hours credit required. No credit assigned until thesis has been completed and filed with the graduate dean. Continuous enrollment required once work on thesis has begun. May be repeated for credit.

5960. 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 – see *Undergraduate Catalog*

Geology
see *Undergraduate Catalog*

German
see Foreign Languages and Literatures

Health Promotion
see Kinesiology, Health Promotion and Recreation

Hebrew
see *Undergraduate Catalog*

Higher Education
see Counseling, Development and Higher Education

History

History, HIST

5040. Studies in Modern European History. 3 hours. Extensive readings and study in one of the topical areas of modern European history. May be repeated for credit as topics vary.

5060. Seminar in Recent and Contemporary European History. 3 hours. Studies in European history since World War I.

5080. Seminar in Modern European History. 3 hours. Research seminar in modern European history. May be repeated for credit as topics vary.

5100. Seminar in United States History. 3 hours. Research seminar in United States history. May be repeated for credit as topics vary.

5110. Studies in United States History. 3 hours. Extensive readings and study in United States history. May be repeated for credit as topics vary.

5130. Studies in World History: Latin American or Asian. 3 hours. Extensive readings and study in either Latin American or Asian history. May be repeated for credit as topics vary.

5150. Seminar in World History: Latin American or Asian. 3 hours. Research seminar in either Latin American or Asian history. May be repeated for credit as topics vary.

5190. Studies in Near East/African History. 3 hours. Extensive readings and study in one of the topical areas of Near East/African history. May be repeated for credit as topics vary.

5220. Studies in United States Military/Diplomatic History. 3 hours. Extensive readings and study in either United States military or diplomatic history. May be repeated for credit as topics vary.

5230. Seminar in United States Military/Diplomatic History. 3 hours. Research seminar in either United States military or diplomatic history. May be repeated for credit as topics vary.

5240. Studies in European Military/Diplomatic History. 3 hours. Extensive readings and study in either European military or diplomatic history. May be repeated for credit as topics vary.