

# Geography (GEOG)

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## **GEOG 1101** Phys Geography Meteorology Lab **1 SCH (0-2)**

A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes greater understanding of concepts of meteorology presented in GEOG 1301. Prerequisite: credit or registration in GEOG 1301.

Fee: \$5.00

## **GEOG 1301** Physical Geography Meteorology **3 SCH (3-0)**

Earth motions and their meanings; system of location and time; composition and structure of the earth's atmosphere. Meteorology and weather prediction, including storms. Air pollution meteorology. Field trips will be arranged.

## **GEOG 1302** Phy Geog Climate and Mankind **3 SCH (3-0)**

Climatic classification, types and world regions. Climatic change, fluctuations and their effects on human ecology (e.g., droughts). Agricultural and urban climatology. Microclimates. The distribution of soils and natural vegetation as related to climate. Field trips will be arranged.

## **GEOG 1303** World Geography **3 SCH (3-0)**

Major geographic regions of the world. Landscapes and peoples of continents; major culture realms and nations, resources, land-use and industries. Contrasts between developed and emerging nations.

## **GEOG 2472** Intro to Geographic Info Sys **4 SCH (3-3)**

Principles and experience of Geographic Information Systems. Acquisition, management, processing, and interpretation of geographic data. Spatial data structure and the display, manipulation, and analysis of geographic data. Field trip required. Field trip fee required. Prerequisite: 3 hours of natural science or permission of instructor. Field Trip Fee required.

Fee: \$40.00

## **GEOG 3305** Environmental Geography **3 SCH (3-0)**

The nature, geographic distribution, use and misuse of global resources with emphasis on those of North America. Ecosystems, air, water, soil, mineral and energy resources will be considered. Prerequisites: 3 semester credit hours of Geography or a science course (see General Education Requirements natural sciences component).

## **GEOG 3421** Geomorphology **4 SCH (3-3)**

Description, classification and quantitative analysis of landforms and surface processes in relation to human development. Regional physiography of the United States and topographic map interpretation. May be used as geology credit. Field trip required. Field trip fee required. Prerequisite: GEOL 1302/GEOL 1102 or GEOL 1303/GEOL 1103, MATH 1316. Field Trip Fee will be required.

Fee: \$5.00

Fee: \$40.00

## **GEOG 3450** Field Mapping Cartography **4 SCH (3-3)**

The principles and practice of plane surveying and the global positioning system (GPS) and their interface with geographic information systems (GIS). Basic principles of cartography and use of cartographic tools and software. Management of cartographic data and GPS data. Local field trips required. Field trip fee required. Prerequisite: MATH 1316 or MATH 1324. Field Trip Fee will be required.

Fee: \$5.00

Fee: \$40.00

## **GEOG 3460** GIS in Nat Res and Envir Mgmt **4 SCH (3-3)**

GIS and other geospatial technologies (including GPS and remote sensing) as applied to natural resources and environmental management. Technologies and techniques used to acquire geographic information, spatial data and location analysis, and applications of geospatial technology within the natural and environmental sciences. Case studies, labs, and field exercises. Prerequisite: GEOG 2472 (preferred), or six hours of physical or life science, or permission of instructor.

## **GEOG 4429** Advanced GIS **4 SCH (3-3)**

Advanced techniques and applications of Geographic Information Systems. GIS data structure and conversions, advanced spatial analysis, data visualization, hydrological modeling. Basic and intermediate GIS programming for customizing and manipulating GIS applications. May be used as a geology credit. Prerequisite: GEOG 2472 or permission of instructor.

## **GEOG 4435** Remote Sensing **4 SCH (3-3)**

The technology and interpretation of aerial photography and satellite imagery, including multi-spectral, thermal and radar images. Digital image processing using a raster geographic information system. Applications of remote sensing and guided projects in areas of student interest. May be used as a geology credit. Prerequisite: MATH 1314 and 6 hours of science, engineering or agriculture.

Fee: \$5.00

## **GEOG 4436** Advanced Remote Sensing **4 SCH (3-3)**

Advanced topics in remote sensing. Recently emerged remote sensing systems, including high-resolution multi-spectral imaging systems, thermal remote sensing and airborne LiDAR remote sensing systems. Cutting-edge remote sensing data processing and analysis techniques. May be used as Geology credit. Prerequisite: GEOG 4435 or equivalent.