

tion of the physical and cultural complexes of various environmental regions. Regions to be discussed include the Humid Tropics, Arid Lands, Polar Lands, Coastal Lands, Mountain Environments, Island Environments. (Formerly GEOG 145T)

### ***Geographic Information Systems and Remote Sensing (GEOG)***

**GEOG 140. Computer Cartography (3)**  
Introduction to computer applications in geography. Fundamental concepts of computers, Internet, word processing, programming, database, computer mapping, remote sensing, and GIS applications. No computer and statistical experience required. (2 lecture, 2 lab hours) (Formerly GEOG 102) **S odd**

**GEOG 141. GIS I: Data Display and Manipulation (3)**  
Prerequisite: GEOG 30 (or equivalent) or permission of instructor. Use of computers in mapping and geographic information systems applications. Operational knowledge of boundary and attribute data manipulation, spatial query, geocoding, and layout using state-of-the-art mapping and geographic information systems software. (2 lecture, 2 lab hours) (Formerly GEOG 101) **F**

**GEOG 142. GIS II: Data Creation and Project Implementation (3)**  
Prerequisite: GEOG 141 or permission of instructor. Fundamental concepts of acquisition, structure, manipulation, and analysis of GIS data. Practice in the design, management, and implementation of GIS. Specific operational knowledge may include georegistration, boundary and attribute file creation, map development, spatial query, and spatial analysis. (2 lecture, 2 lab hours) (Formerly GEOG 107) **S**

**GEOG 143. GIS III: Spatial Analysis and Modeling (3)**  
Prerequisite: GEOG 142 or permission of instructor. Spatial analysis and modeling in a GIS environment. Spatial geometry, pattern analysis, terrain analysis, path analysis, network analysis, surface modeling, spatial autocorrelation, and spatial interpolation. (2 lecture, 2 lab hours) (Formerly GEOG 108) **F odd**

**GEOG 148. Cartography (3)**  
Prerequisite: GEOG 30 or permission of instructor. Theory map communication. Practical experience in compilation, generalization, symbolization, and design to produce original maps. Teaches the skill of presenting tabular data in map form,

using pen-and-ink and computer-assisted drafting. (2 lecture, 2 lab hours) (Formerly GEOG 100) **F even**

**GEOG 149. Technical Field Geography (3)**  
Prerequisite: geography major or permission of instructor. Gathering and analysis of data pertaining to topics in physical or human geography. Includes an on-campus seminar to discuss issues and concepts. (1 lecture, 4-8 field hours) (Formerly GEOG 109) **S odd**

**GEOG 150. Map Interpretation (3)**  
Prerequisites: G.E. Foundation B4, MATH 5 (or equivalent), GEOG 7, and GEOG 30 or permission of instructor. Reading and interpretation of USGS-type topographic maps. Emphasis on interpretative inference concerning both physical and cultural landscapes. (2 lecture, 2 lab hours) (Formerly GEOG 104) **F**

**GEOG 151. Aerial Photograph Interpretation (3)**  
Prerequisites: G.E. Foundation B4, MATH 5 (or equivalent), GEOG 7, GEOG 30 (or equivalent) or permission of instructor. Introduction to aerial imagery interpretation, videography, and multispectral scanner technology; computer-based digital processing; monitoring and mapping of terrain features; georeferencing (GPS); GIS applications. (2 lecture, 2 lab hours) (Formerly GEOG 105) **S**

**GEOG 152. Remote Sensing I: Introduction to Remote Sensing of Environment (3)**  
Prerequisites: G.E. Foundation B4, MATH 5 (or equivalent), GEOG 7, GEOG 30 (or equivalent) or permission of instructor. Introductory techniques of remote sensing, including digital image processing, and advanced GIS applications. (2 lecture, 2 lab hours) (Formerly GEOG 106) **S even**

### ***International Development Studies (GEOG)***

**GEOG 160. Urban Geography (3)**  
Prerequisite: G.E. Foundation and Breadth Area D. The city environment. An understanding of the changing urban environments from ancient through medieval to modern times; the relationship of the urban center to its surrounding hinterland; the interdependence of its functional parts; its problems and future. **F even**

**GEOG 161. Historical Geography of the United States (3)**  
Prerequisite: G.E. Foundation and Breadth Area D. Regional settlement of the United

States; peopling of physiographic regions, creation of economic (cultural) regions, and geographic factors related to broad trends in American history. **F**

**GEOG 162. Political Geography (3)**  
Prerequisite: G.E. Foundation and Breadth Area D. Systematic treatment of the nature and structure of states, boundary problems, political policy for the oceans, international power, air space. **F even**

**GEOG 163. World Crises (3)**  
Prerequisite: G.E. Foundation and Breadth Area D. Current major political, economic, and environmental crises occurring on either a global or a regional level. **S odd**

**GEOG 164. American Ethnic Geography (3)**  
Prerequisite: G.E. Foundation and Breadth Area D. Geographical analysis of selected American ethnic groups to include their cultural hearths, cultural landscapes, cultural evolutions, migrations, and current spatial distributions. Economic, social, and political correlates will be explored. **F odd**

**GEOG 165. Medical Geography (3)**  
Prerequisite: G.E. Foundation and Breadth Area D. Examination of spatial patterns of diseases worldwide, with special emphasis on diffusion patterns for infectious diseases. Analysis of global health care delivery systems including health care resources, accessibility, and uses. (Formerly GEOG 155) **S even**

**GEOG 166. Geography of World Economy (3)**  
Prerequisite: G.E. Foundation and Breadth Area D. An examination of the organization of world economy and human economic activities from a geographical perspective. Discussion of contemporary economic issues may include industrial restructuring, technological innovation, foreign trade and investment, Pacific Asia dynamism, Third World crisis, new international economic order, regional inequality, and local area development. (Formerly GEOG 130) **F odd**

**GEOG 167. People and Places — A Global Perspective (3)**  
Prerequisites: G.E. Foundation and Breadth Area D. Contrasting characteristics of a diverse world; influence of major social, cultural, economic, and political forces on societal behavior and institutions; impacts of geographical factors including location, climate, natural resources, urbanization, diffusion/adoption of innovations, and rural/urban life styles on development. G.E. Multicultural/International MI. **FS**