Introduction to the geographical distribution of select contemporary diseases and their relationships to other health care issues. Distribution of, and access to, scarce health care resources along with impacts of gender, race, and class on human life chances at global (especially developed versus developing countries), regional and local (such as urban versus rural) scales are evaluated.

GEOG 226: 3 s.h.
Political Geography (D, G3, W)
Political boundaries of the world map. Covers violent conflicts from which countries were formed. Colonization (1400-1900), decolonization (1800-1970) and the Cold War are discussed. Offered in fall, spring. Prereq: ENGL 110.

GEOG 226H: 3 s.h.
Hnrs: Political Geography (D, G3, W)
Hnrs: Political Geography. Offered in fall.

GEOG 227: 3 s.h.
Cities (G3)
City development is described and explained in a global context. The US city system is explained and compared to European, Asian and African urban systems. Contemporary city problems (gentrification, urban decline, segregation, etc.) are discussed.

GEOG 228: 3 s.h.
Geography of Sport (G3)
Using a geographical basis, the course will examine a variety of topics, including landscapes of modern sport; place and space in sport; institutions and spatial organization of sport; and sport, politics and development. Offered periodically.

GEOG 229: 3 s.h.
Sustainable Tourism (G3)
An investigation of the areal distribution of recreation and tourist activities and their positive and negative impacts; emphasis on environmental and economic aspects of leisure within a locational framework. Planning methodology to alleviate problems and create higher-quality recreational experiences. Offered infrequently.

GEOG 230: 3 s.h.
Physical Geography (G2)
Study of the Earth's physical environment, including atmosphere, hydrosphere, lithosphere and biosphere. Viewing the Earth as an integrated system, global patterns and processes are analyzed. Offered annually.

GEOG 242: 3 s.h.
London (G3)
Using London as the core of the class, students will be introduced to basic geographic concepts and methods of analysis. Despite the focus on one city, London, the course will take a thematic approach towards geographical inquiry (map interpretation, urban planning, migration, segregation, industrial development, political geography and empire building) London's twentieth century industrial decline will be used to illustrate broader themes of global economic competition.

GEOG 245: 3 s.h.
Geography of Pennsylvania (G3)
Introduction to the geography of Pennsylvania, using the tools and concepts of regional geography. Physical, cultural and economic landscapes and resulting social and environmental issues are examined.

GEOG 245H: 3 s.h.
Hon: Geog of Pennsylvania (G3)

GEOG 248: 3 s.h.
Geography of Africa (D, G3)
The course uses a thematic approach to examine many of the subfields of geography as they pertain to Africa. Topics include the physical landscape, climate, vegetation, environmental issues, precivilization and colonial history, politics, culture, population, urbanization, agricultural and economic development, and medical gender issues. Offered periodically.
GEOG 248H: 3 s.h.
Hon: Geography of Africa  (D, G3)

GEOG 278: 3 s.h.
Transportation Geography  (G3)
Transportation is defined as the movement of goods and people from place to place. This course introduces the principles underlying these movements, with discussion of the economic, social, and environmental impacts. Offered periodically.

GEOG 279: 3 s.h.
Experimental
Experimental Course in Geography

GEOG 281: 3 s.h.
Maps and GIS  (G3)
Thorough examination of maps as tools for representing Earth dimensions, depicting landscapes and displaying data. Use Geographic Information Systems (GIS) mapping software to make a variety of effective maps.

GEOG 289: 3 s.h.
Field and Research Methods in Geography  (W)
Introduction to the theory, process, and methodology used to collect and analyze data, and conduct and communicate research within the multidisciplinary context of geographic inquiry.

GEOG 292: 3 s.h.
Quantitative and Spatial Analysis  (G2)
Analysis of spatial and other geographical data using descriptive statistical measures, probability and sampling, and inferential statistical methods. Emphasis on geographical problem solving. Prereq: GEOG 281, and MATH 130 or higher, or MPT 151 or higher, or MATH 101.

GEOG 295: 3 s.h.
GIS I: Vector Data Analysis  (G2)
Introduction to Geographic Information Systems (GIS) computer technology, theory, and methodology focusing on vector data models. Combines understanding of geographic data and research with experience in digital mapping, geographic databases, and spatial analysis. Offered in fall, spring. Prereq: GEOG 281.

GEOG 296: 3 s.h.
GIS II: Raster Data Analysis
Introduce students to the fundamental concepts of Raster GIS. Topics will include: the physical basis for remote sensing, the extraction of information contained within energy, remote sensing instrumentation, aerial photography, photogrammetry, digital image processing, data structure, database design, and spatial data analysis. Land-based environmental resources and sustainability applications.

GEOG 296H: 3 s.h.
H: GIS II: Raster Data Analysis

GEOG 300: 3-12 s.h.
Co-Op Ed Experience in Geog
Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

GEOG 302: 3 s.h.
Food System Sustainability  (G3, W)
Examines the attendant economic, social and environmental impacts of our food system. Key areas of policy influence on our food system and sustainable interventions for transforming our food system will also be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 130 or GEOG 202 or permission of instructor.

GEOG 304: 3 s.h.
Water Resources Management  (G3)
An interdisciplinary study of how we plan, manage and use water. Topics range from water law to hydrology. Offered periodically. Prereq: GEOG 101 or 202.

GEOG 305: 3 s.h.
Energy Sustainability  (G3, W)
Explores energy production and consumption from geographic and sustainability perspectives. The social, economic and environmental impacts of traditional and alternative energy resources will be examined. Options for a sustainable energy future in different geographic locations will be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 202 or permission of instructor.

GEOG 305H: 3 s.h.
Hon: Energy Sustainability  (G3, W)

GEOG 306: 3 s.h.
Environmental Impact Assessment
The various regulatory requirements and technical methods for developing federal environmental-impact statements for air, water, biological and socioeconomic environments. Offered periodically. Prereq: GEOG 202 and 230 or permission of instructor.

GEOG 307: 3 s.h.
US Environmental Policy  (G3)
Federal environmental legislation; the relationship between local, state and federal agencies in policy formation and implementation; industry responsibilities and options under existing law; the role of interest groups and the public in environmental decision making and U.S. engagement in emerging international environmental policy debates. Offered in fall of odd years. Prereq: junior or senior status; GEOG 101 or 202 or GOVT 205 or ECON 102 or permission of instructor.

GEOG 333: 3 s.h.
Biogeography  (G3)
Interactions between environmental, biological and human factors which have led to current geographical distributions of flora and fauna. Field trip required. Offered periodically. Prereq: GEOG 230 or BIOL 100 or permission of instructor.

GEOG 336: 3 s.h.
Climate And Society  (G3)
Human interrelationships with the atmospheric environment. Includes microclimatological applications in agriculture, water resources, human health and architecture to analysis of global climate-change issues. Offered periodically. Prereq: GEOG 230 or ESCI 107 or permission of instructor.

GEOG 342: 3 s.h.
Europe  (G3, W)
Introduction to Western Europe as a region. Emphasis on its delimitation and cultural, economic and political spatial patterns relating to the desire to form a European community. Europe within a global framework also considered. Offered in winter, spring, summer. Prereq: ENGL 110.
Assess data quality and long-term data management issues. and how they encapsulate all data types, characteristics and capabilities. Fully explore the GIS geodatabase model and related data structures, and how they encapsulate all data types, characteristics and capabilities. Assess data quality and long-term data management issues.

GIS for Web Development
Integrate GIS and Web development technologies. Implement data compilation and map design decisions to support an organization's internal and public information flows. Incorporate interactive maps and information retrieval to enhance Web content. Prerequisites: GEOG 295 or ESCI 281, and DESN 247 or CSCI 121.

GIS Modeling
Analyze and construct GIS-based models of various geographical scenarios. Strategize spatial and temporal problem solving in environmental, transportation, emergency management and other contexts. Adapt some models to computer algorithms used within GIS software. Prerequisites: GEOG 295 or ESCI 281, and GEOG 296, and CSCI 161 or ESCI 282, or permission. Offered fall of even-numbered years.

GIS Data Management
Fully explore the GIS geodatabase model and related data structures, and how they encapsulate all data types, characteristics and capabilities. Assess data quality and long-term data management issues.

Global Environmtl Policy/Negotiatn (G3, W)
Global political and economic forces and environmental change. Emphasis on spatial patterns and processes of transboundary environmental problems, the major pieces of international environmental policy, the negotiations process between states and nonstate actors in policy formation and implemention, and the dynamics of North-South relations on the changing physical landscape. Offered in spring of even years. Prereq: junior or senior status; ENGL 110, GEOG 307 or permission of instructor.

Senior Thesis
Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. For senior Geography majors only. Prereq: senior standing and completion of basic courses. Offered as needed.

Honors Thesis
Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

Independent Study
Investigation of selected topic with individual research assignment; focus varies.

Departmental Honors
Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

Co-Op Ed Experience in Geog
Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

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