

GEOGRAPHY

Geography is the study of how people relate to their natural and human surroundings. Geography is a bridge discipline, an environmental science which brings together principles of physical sciences and other social sciences; a social science which examines the spatial characteristics of culture, history, politics, economics and business decisions; and a liberal arts discipline which provides background for study in art, languages, literature, music, education and many other subjects. Geographers can bring to analyses of current issues an understanding of global interrelationships and specialized geospatial technology skills. Many geographers develop professional skills in map interpretation, cartography, geographic information systems (GIS), and remote sensing. Geographic understanding and skills create the potential for employment in such diverse areas as planning and other government agencies, environmental and cartographic service companies, and the business community. Contact the department chairperson for more detailed information on career opportunities.

The Bachelor of Arts program in Geography offers major concentrations in environmental studies, geospatial applications, global studies, and sustainability studies. The major program requires 42 credit hours of study and a minor program of study outside the department.

The Bachelor of Science program in Environmental and Spatial Sciences provides advanced training in geospatial technologies, including: geographic information science (GIS), global positioning system (GPS) technology, remote sensing, data management, and cartography. Graduates of the program are well-positioned for careers in environmental analysis and mitigation of environmental problems. The program prepares students to assess environmental and human-environment systems, identify and evaluate environmental problems, and design innovative and sustainable solutions.

The Bachelor of Science in Education (B.S.Ed.) program in secondary education, providing certification for social studies teaching with a geography emphasis, serves students who are interested in a robust and well-rounded social studies preparation for their future teaching careers.

Minor programs of study in environmental geography, geospatial applications, global geography, sustainability studies, and general geography each require 18 credits and may be studied by those students in major programs other than the B.A. Geography.

the programs

- Environmental & Spatial Sciences, B.S. (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/environmental-spatial-sciences/>)
- Environmental Geography Minor (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/environmental-geography-minor/>)
- General Geography Minor (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/general-geography-minor/>)
- Geography B.A., - Environmental Studies Option (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/geography-ba-environmental-studies-option/>)
- Geography, B.A. - Geospatial Applications Option (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/geography-ba-geospatial-applications-option/>)

- Geography, B.A. - Global Studies Option (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/geography-ba-global-studies-option/>)
- Geography, B.A. - Sustainability Studies Option (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/geography-ba-sustainability-studies-option/>)
- Geospatial Applications Minor (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/geospatial-applications-minor/>)
- Global Geography Minor (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/global-geography-minor/>)
- Social Studies, B.S.Ed. - Geography Advised (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/social-studies-bsed/>)
- Sustainability Studies Minor (<https://catalog.millersville.edu/undergraduate/college-science-technology/geography/sustainability-studies-minor/>)

the faculty

Cuthbert, Angela; Professor
College of Science and Technology
B.E.S., University of Waterloo (Canada), 1995; M.E.S., Ibid., 1996; Ph.D., McMaster University (Canada), 2001

Frost, Ethan; Assistant Professor
College of Science and Technology
B.A., Clark University, 2002; M.S., University of Delaware, 2006; Ph.D., Ibid., 2011

Geiger, Charles; Associate Professor
College of Science and Technology
B.S., Edinboro University, 1976; M.A., Kent State University, 1978; Ph.D., University of Toronto (Ontario), 1984

Kelly, Jessica; Associate Professor
College of Science and Technology
B.A., Boston University, 2003; M.A., Ibid., 2003; Ph.D., Rutgers University, 2009

Schreiber, Kathleen; Professor
College of Science and Technology
B.A., University of Delaware, 1983; M.S., Ibid., 1990; Ph.D., Ibid., 1996

the courses

GEOG 101: 3 s.h.

The Global Environment (G3)

Global survey of human environment interactions focusing on people's use of natural resources and major related issues, including scarcity and environmental impacts. Comparisons between developing and developed countries and across cultures.

GEOG 120: 3 s.h.

Human Geography (D, G3)

Cultural geography of race, ethnicity, gender and political systems. Emphasis on processes that create and maintain cultures and the geographies that these processes produce. Offered in spring.

GEOG 123: 3 s.h.**Place and Identity (G1)**

Introduction to humanistic geography through an examination of the foundational geographical concepts of place and human identity. 'Place', and its close corollary 'identity', are explored chronologically beginning with the philosopher-geographers of ancient Greece and Rome, through to modern social and political philosophies of the 19th and 20th centuries. Cross cultural examples are used to illustrate the nature of place as a fundamental element of everyday human experience of the world.

GEOG 130: 3 s.h.**Intro to Environmental Science (G2)**

Introduction to the scientific concepts, principles, and methodologies that underlie environmental change and environmental sustainability. Emphasis on the spatial scale and interconnection of multiple environmental processes, the effects of human activities on environmental processes, and the technical and scientific methods for their assessment and analysis.

GEOG 130H: 3 s.h.**Hon: Intro to Environ Science (G2)****GEOG 141: 3 s.h.****World Regional Geography (G3)**

Spatial patterns of environmental, cultural, social, economic and political developments in selected regions of the world. Emphasis on developed and less developed parts of the world.

GEOG 202: 3 s.h.**Environmental Sustainability (G3)**

Investigation of problems that have arisen through human use of earth's resources, and the technical, economic, policy, and social options available to us. Offered in fall, spring.

GEOG 222: 3 s.h.**Economic Geography (G3)**

Location of economic activities in different environmental settings. The growth of global economic interdependence. Economic growth and development strategies in a regional framework. Economic versus environmental trade-offs. Offered in summer.

GEOG 223: 3 s.h.**Health, Gender, Race & Class (G3)**

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, precolonial 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 307H: 3 s.h.**Hon:US Environmental Policy (G3)****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.

GEOG 343: 3 s.h.**Latin America & the Caribbean (P)**

A thematic study of the physiographic and cultural regions of Latin America and the Caribbean. Historical, economic, political, social, and environmental geography approaches to studying regional characteristics. Select topics include population change, land use change, urban development, economic development, environmental sustainability, and human rights. Offered periodically. Prereq: COMM100; ENGL110; and junior or senior status.

GEOG 344: 3 s.h.**North America (G3)**

Geography of the U.S. and Canada using the tools and concepts of regional geography. Physical, population and economic patterns are merged in developing an understanding of regional characteristics and issues.

GEOG 350: 3 s.h.**Global Issues (G3)**

Issues related to urban, cultural and resource problems are analyzed globally. Emphasis on spatial nature of these problems and emerging global interdependence. Focus on a single current issue, which will be identified in advertised course title. Offered periodically.

GEOG 372: 3 s.h.**Urban and Regional Planning (G3)**

Introduction to land use and other types of planning in urban and rural areas. Assessment of development suitability and environmental impact. Techniques for implementing different types of plans. Offered annually.

GEOG 379: 3 s.h.**Experimental**

Experimental

GEOG 384: 3 s.h.**Cartography**

Introduction to concepts and techniques of mapmaking. Skill developed in computer-based compilation, layout and lettering of maps. Offered periodically. Prereq: GEOG 281, 295.

GEOG 395: 3 s.h.**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.

GEOG 396: 3 s.h.**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.

GEOG 397: 3 s.h.**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.

GEOG 400: 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 407: 3 s.h.**Glbl Envrnmtl 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 implementation, 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.

GEOG 408: 3 s.h.**Sustainable Development (D, P)**

Social, economic, and environmental aspects of global sustainable development. Class discussion integrated with research and service learning projects. Prereq: COMM 100, ENGL 110, and junior or senior standing.

GEOG 479: 3 s.h.**Experimental**

Experimental

GEOG 488: 1-3 s.h.**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.

GEOG 489: 1-4 s.h.**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.

GEOG 498: 1-3 s.h.**Independent Study**

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

GEOG 499: 1-4 s.h.**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.

GEOG 500: 3-12 s.h.**Co-Op Ed Experience in Geog**

Co-Op Ed Experience in Geog