

# Geography, B.A.

## Requirements

The Bachelor of Arts with a major in geography requires a minimum of 120 s.h., including at least 39-43 s.h. of work for the major. Credit required for the major depends on a student's choice of track. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core. Transfer students must earn a minimum of 15 s.h. for the major in residence at the University of Iowa.

Geography majors may not earn the minor in geographic information science.

The major in geography is appropriate preparation for advanced training or careers in geographical and sustainability sciences.

Students choose one of three tracks in the major: environmental studies, geographic information science (GISci), or health and society. All students majoring in geography complete a common set of foundation courses in addition to the requirements for their choice of track.

Consistent with the College of Liberal Arts and Sciences maximum semester hours rule, students may count a maximum of 56 s.h. earned in their major department toward graduation.

The B.A. with a major in geography requires the following work.

Code	Title	Hours
	Common Requirements	18-23
	Statistics Courses	3-4
	Track Courses	15-19

## Common Requirements

Students may not use a course to fulfill more than one major requirement.

Code	Title	Hours
All of these:		
GEOG:1020	The Global Environment	3
GEOG:1021	The Global Environment Lab	1
GEOG:1050	Foundations of GIS	4
GEOG:1090	Globalization and Geographic Diversity	3
One of these:		
GEOG:1060	Geography of Asia: From Japan to Pakistan	3
GEOG:1070	Contemporary Environmental Issues	3
GEOG:2110/ GHS:2110	Seven Billion and Counting: Introduction to Population Dynamics	3
GEOG:2910	The Global Economy	3
GEOG:2950	Environmental Conservation	4
One of these (not required for GISci track students):		
GEOG:3340	Ecosystem Services	3

GEOG:3500/ IGPI:3500	Introduction to Environmental Remote Sensing	3
GEOG:3520/ IGPI:3520	GIS for Environmental Studies	3
GEOG:3540/ IGPI:3540	Geographic Visualization	3
GEOG:3570	Light Detection and Ranging (LiDAR): Principles and Applications	3
GEOG:4010	Field Methods in Physical Geography	3
GEOG:4150/ GHS:4150/ IGPI:4150	Health and Environment: GIS Applications	3
GEOG:4650	Simulation in Environmental Geography	3
One of these:		
GEOG:4030	Senior Project Seminar	3
GEOG:4995	Honors Thesis (must enroll for 3 s.h.)	3
One of these (at least 1 s.h. required):		
GEOG:3400	Iowa Environmental Policy in Practice	3
GEOG:3992	Undergraduate Research (including ICIGO or independent research)	arr.
CCP:1201	Academic Internship	1-3

Senior Project Seminar (GEOG:4030) is offered only in spring semesters. Students who choose GEOG:4995 Honors Thesis must make arrangements with a faculty advisor.

The Department of Geographical and Sustainability Sciences is a participant in the University's internship program, which provides opportunities for students to participate in paid and unpaid activities related to their academic programs. The Pomerantz Career Center works with students to develop appropriate internships.

## Statistics Courses

Students must earn a minimum of 3 s.h. in statistics by completing one of the following courses or a statistics course equivalent to or numbered above one of these.

Code	Title	Hours
GEOG:1065	Introduction to Spatial Analysis: Patterns and Processes	3
PSQF:4143/ STAT:4143	Introduction to Statistical Methods	3
STAT:1020/ PSQF:1020	Elementary Statistics and Inference	3
STAT:1030	Statistics for Business	4
STAT:2010	Statistical Methods and Computing	3
STAT:2020	Probability and Statistics for the Engineering and Physical Sciences	3
STAT:3510/ IGPI:3510	Biostatistics	3

## Tracks

All geography majors must complete one of the three tracks described below: environmental studies, geographic information science (GISci), or health and society. Students should pay close attention to prerequisites for the upper-level courses in each track in order to develop a study plan that allows them to complete their major in a timely way.

Students in the environmental studies or health and society track who wish to gain additional experience in theory and application of geographic information systems (GIS) should take GIS-based courses offered by the Department of Geographical and Sustainability Sciences, as described for each track below.

Students may use GEOG:3001 Special Topics to fulfill a track requirement if the course content is applicable.

### Environmental Studies Track

The environmental studies track requires a minimum of 15 s.h. It is designed for students interested in the interrelationships among social and natural processes that affect the environment. The track prepares students for careers or pursuit of personal interests in resource management, landscape ecology, water resources, environmental policy or law, global environmental change, sustainable development, or other complex environmental issues. Graduates may find employment in an environmental profession such as conservation, environmental planning and regulation; or environmental law, policy, and politics.

The environmental studies track offers training in field observation, remote sensing, geographical information systems, quantitative analysis/computing, and cartographic representation. It also provides a sound foundation for graduate or professional-level studies in the natural or social aspects of the environment.

In addition to the common requirements, students in the environmental studies track complete a common track course (3 s.h.) and at least 12 s.h. of upper-level geographical and sustainability sciences courses.

Code	Title	Hours
Common course—all environmental studies track students take this:		
GEOG:1070	Contemporary Environmental Issues	3

Students choose a total of four upper-level courses (at least 12 s.h.) from the following, in consultation with their advisor. Those who wish to gain additional experience in theory and application of GIS systems should take GEOG:3520 GIS for Environmental Studies and GEOG:4520 GIS for Environmental Studies: Applications, or they should earn 6 s.h. in other GIS-based geographical and sustainability sciences courses.

Code	Title	Hours
At least one of these:		
GEOG:2310/ EES:2310	Introduction to Climatology	3
GEOG:2374/ BIOL:2374	Biogeography	3
GEOG:2410	Environment and Development	3
GEOG:2930	Water Resources	3

GEOG:3500/ IGPI:3500	Introduction to Environmental Remote Sensing	3
GEOG:3520/ IGPI:3520	GIS for Environmental Studies	3
At least one of these:		
GEOG:3310	Landscape Ecology	3
GEOG:3315	Ecosystem Ecology	3
GEOG:3320/ EES:3260	Wetlands: Function, Geography, and Management	3
GEOG:3340	Ecosystem Services	3
GEOG:3350	Urban Ecology	3
GEOG:3400	Iowa Environmental Policy in Practice	3
GEOG:3760/ GHS:3760	Hazards and Society	3
GEOG:3920/ URP:3001	Planning Livable Cities	3
GEOG:4010	Field Methods in Physical Geography	3
GEOG:4200/ SUST:4200	Sustainability as a System Science	3
GEOG:4470	Ecological Climatology	3
GEOG:4500/ IGPI:4500	Advanced Remote Sensing	4
GEOG:4520/ IGPI:4520	GIS for Environmental Studies: Applications	3
GEOG:4650	Simulation in Environmental Geography	3
GEOG:4750/ URP:4750	Environmental Impact Analysis	3
GEOG:4770/ AFAM:4770/ GHS:4770	Environmental Justice	3

### Geographic Information Science Track

The geographic information science track (GISci) requires a minimum of 18-19 s.h. It is designed for students preparing for positions in government agencies, nongovernment organizations, international development agencies, and business. It also provides preparation for graduate study in geography, planning, and other disciplines. The track focuses on the design, implementation, and use of geographic information systems. Courses address how geographic data are acquired, stored, accessed, displayed, managed, and analyzed.

Students in the geographic information science track learn to address problems involved in modeling environmental systems, identifying the best locations for service facilities, assessing environmental impacts, and forecasting the populations of small areas. They use the department's Geographical Information Systems Instructional Lab (GISIL) extensively to develop expertise in using GIS software.

Coursework in the track covers methods of spatial analysis and geographical modeling and involves database management and computer programming.

In addition to the common requirements, students in the geographic information science track complete a common track course (3-4 s.h.) and at least 15 s.h. of upper-level geographical and sustainability sciences courses.

Code	Title	Hours
Common course—all GISci track students take one of these:		
CS:1110	Introduction to Computer Science	3
CS:1210	Computer Science I: Fundamentals	4
CS:2110	Programming for Informatics	4

Students choose a total of five upper-level courses (at least 15 s.h.) from the following, in consultation with their advisor. GISci track students are encouraged to add breadth to their degree by taking additional upper-level courses in the department. Students interested in the application of GIS to environmental issues should select additional courses from the department's environmental studies area; those interested in health or other socioeconomic issues should select additional courses from the department's health and society area.

Code	Title	Hours
At least one of these:		
GEOG:3050/ IGPI:3050	Geospatial Programming	3
GEOG:3500/ IGPI:3500	Introduction to Environmental Remote Sensing	3
GEOG:3520/ IGPI:3520	GIS for Environmental Studies	3
GEOG:3540/ IGPI:3540	Geographic Visualization	3
GEOG:4650	Simulation in Environmental Geography	3
At least one of these:		
GEOG:3340	Ecosystem Services	3
GEOG:3760/ GHS:3760	Hazards and Society	3
GEOG:4010	Field Methods in Physical Geography	3
GEOG:4150/ GHS:4150/ IGPI:4150	Health and Environment: GIS Applications	3
At least one of these:		
GEOG:3570	Light Detection and Ranging (LiDAR): Principles and Applications	3
GEOG:4500/ IGPI:4500	Advanced Remote Sensing	4
GEOG:4520/ IGPI:4520	GIS for Environmental Studies: Applications	3
GEOG:4580/ IGPI:4581	Introduction to Geographic Databases	3

### Health and Society Track

The health and society track requires a minimum of 15 s.h. It is designed for students interested in understanding the causes and consequences of social inequalities, the long-term effects that changing human/environmental interactions have on human health, and emerging transnational challenges to the sustainability of livelihoods. The track provides students with foundational knowledge and skills to support postgraduate employment in governmental or nongovernmental positions, graduate study in public health or

in health-related fields, and service experiences such as the Peace Corps and AmeriCorps.

Students gain understanding of the factors and processes that determine geographic patterns of health. They explore the effects of the social, built, and natural environments on the physical, social, and mental health of populations. Coursework in the track examines patterns and causes of infectious and chronic diseases; hazards, vulnerability, and environmental justice; and the spatial methods used to understand such issues.

Thematic content from courses is complemented by quantitative, spatial, and statistical analysis coursework, enabling students to analyze and understand geographic patterns of health. Students have opportunities to work on applied problems, such as assessing patterns of disease, identifying the underlying population and environmental drivers of good or poor health, and evaluating the social dimensions of environmental impacts.

In addition to the common requirements, students in the health and society track complete three common track courses (9 s.h.) and at least two upper-level geographical and sustainability sciences courses (6 s.h.).

Code	Title	Hours
Common courses—all health and society track students take these:		
GEOG:2110/ GHS:2110	Seven Billion and Counting: Introduction to Population Dynamics	3
GEOG:3110/ GHS:3111	Geography of Health	3
GEOG:4150/ GHS:4150/ IGPI:4150	Health and Environment: GIS Applications	3
At least two of these:		
GEOG:3070/ GHS:3070	Hungry Planet: Global Geographies of Food	3
GEOG:3210/ CPH:3400	Health, Work, and the Environment	3
GEOG:3300/ GHS:3300	Envisioning Future Worlds: Sustainable Development and Its Alternatives	3
GEOG:3760/ GHS:3760	Hazards and Society	3
GEOG:3920/ URP:3001	Planning Livable Cities	3
GEOG:4770/ GHS:4770	Environmental Justice	3

### Teacher Licensure

Students interested in teaching in elementary and/or secondary schools should seek admission to the Teacher Education Program (TEP) in the College of Education.

To qualify for licensure in secondary teaching, students in the TEP complete a degree in education as well as a related College of Liberal Arts and Sciences degree. See Apply on the

College of Education website for details on requirements and deadlines for applying to the College of Education and about TEP choices of majors leading to licensure.