

# Geography, B.S.

## Learning Outcomes

The goal is for geography graduates to demonstrate spatial literacy, systems thinking, critical thinking, research proficiency, and communications skills.

### Spatial Literacy

Students will understand the role of spatial information and data in addressing social and environmental questions. They will be aware of the role of geography as a linchpin discipline that bridges social and biophysical sciences.

### Systems Thinking

Students will acquire an understanding of the connections and relationships between human and environmental activities and outcomes across space and time, be able to apply spatial analytical techniques to investigate human/environment interaction, and identify the ethical implications associated with outcomes produced by such analyses. This understanding and ability will provide students with the necessary tools to assess the sustainability of current and proposed solutions in a variety of settings across a broad spectrum of social and environmental issues.

### Critical Thinking

Students will have the capability to assess various points of view and perspectives while assessing complex social and environmental problems, to evaluate the factual basis of assertions, and to understand trade-offs.

### Research Proficiency

Students will be able to formulate testable hypotheses, apply quantitative or qualitative approaches and methodological tools to pertinent questions, and acquire secondary data or construct primary data sets when applicable.

### Communication Skills

Students will be able to communicate complex geographical and technical concepts using an appropriate vocabulary to a broad spectrum of audiences. Communication skills include verbal, written, graphic, and cartographic forms of communication.

## Requirements

The Bachelor of Science with a major in geography requires a minimum of 120 s.h., including at least 46-49 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 with strong interest in quantitative analysis and model building should pursue

the Bachelor of Science and are encouraged to master an appropriate computer programming language.

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. Bachelor of Science students take additional mathematics coursework.

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.S. with a major in geography requires the following work.

Code	Title	Hours
Common Requirements		18-23
Statistics, Mathematics, or Computer Science Courses		10
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 (offered only in spring semesters)	3
GEOG:4995	Honors Thesis (must enroll for 3 s.h. and make arrangements with a faculty advisor)	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, Mathematics, or Computer Science Courses

Students must earn a minimum of 10 s.h. in statistics, mathematics, or computer science coursework by completing the following. Equivalent courses and courses with a higher course number also may be selected in consultation with, and approval by, an advisor.

Students who complete the GIS track may not double count their required computer science courses for the statistics, mathematics, or computer science courses requirement.

Code	Title	Hours
Both of these:		
STAT:2010	Statistical Methods and Computing	3
STAT:3200/ IGPI:3200/ISE:3760	Applied Linear Regression	3
One of these:		
CS:1210	Computer Science I: Fundamentals	4
CS:2110	Programming for Informatics	4
CS:2230	Computer Science II: Data Structures	4
MATH:1380	Calculus and Matrix Algebra for Business	4
MATH:1460	Calculus for the Biological Sciences	4

## 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 satisfying 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

Students choose two upper-level courses (at least 6 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 also take an additional 6 s.h. in GIS-based geographical and sustainability sciences courses.

Code	Title	Hours
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/ AFAM: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.

## Combined Programs

### B.S./M.S. in Informatics (Geoinformatics Subprogram)

Students majoring in geography who are interested in earning a master's degree in informatics with a geoinformatics subprogram may apply to the combined B.S./M.S. program offered by the College of Liberal Arts and Sciences and the Graduate College. The program enables students to begin the study of informatics before they complete their bachelor's degree. Students are able to complete both degrees in five years rather than six.

Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the combined degree program. For information about the informatics program, see the M.S. in informatics (Graduate College) in the Catalog.

## Honors

### Honors in the Major

Students have the opportunity to graduate with honors in the major. Departmental honors students must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.33 in all work for the major. They must be admitted to the department's honors program by the first semester of their senior year or earlier.

Honors students in geography pursue study beyond the typical undergraduate level. In order to graduate with honors in the major, they work under the direction of a faculty member to conduct original research and then prepare and present an honors thesis based on their research. The thesis is reviewed by a committee of at least three faculty members. Departmental honors students earn credit for their thesis by registering for GEOG:4995 Honors Thesis. They may substitute GEOG:4030 Senior Project Seminar for GEOG:4995, as long as they continue to work on the thesis under the direction of a faculty member.

### University of Iowa Honors Program

In addition to honors in the major, students have opportunities for honors study and activities through membership in the University of Iowa Honors Program. Visit Honors at Iowa to learn about the University's honors program.

Membership in the UI Honors Program is not required to earn honors in the geography major.

## Career Advancement

Courses in geography are commonly required of students preparing to teach at the elementary and secondary school levels or to work in planning and public affairs. The degree also provides a solid background for many related professions, including law, health care, environmental engineering, and business.

The application of geographic information systems (GIS) to social, economic, and environmental problems has increased considerably during the past decade. This trend is likely to continue into the future; in fact, the U.S. Department of Labor has identified the area as one of its 14 high-growth industries.

GIS presents an abundance of career opportunities for geography graduates in local, state, and federal government agencies, as well as in the private sector.

Geography majors are encouraged to participate in an internship. The department maintains close ties with the Iowa Department of Natural Resources and other local agencies that offer internships.

The department's faculty members help students apply for postgraduate programs and contact potential employers.

The Pomerantz Career Center offers multiple resources to help students find internships and jobs.

## Academic Plans

### Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. Courses in the major are those required to complete the major; they may be offered by departments other than the major department.

**Before the third semester begins:** two introductory courses in the major.

**Before the fifth semester begins:** six courses in the major.

**Before the seventh semester begins:** 12 courses in the major and at least 90 s.h. earned toward the degree.

**Before the eighth semester begins:** 15 courses in the major.

**During the eighth semester:** enrollment in all remaining coursework in the major, all remaining GE CLAS Core courses, and a sufficient number of semester hours to graduate.

### Sample Plans of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

### Geography, B.S.

- Environmental Studies Track [p. 5]
- Geographic Information Science Track [p. 6]
- Health and Society Track [p. 7]

### Environmental Studies Track

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
GE CLAS Core: Sustainability <sup>a</sup>		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Fall</b>		
GEOG:1020	The Global Environment <sup>b</sup>	3
GEOG:1021	The Global Environment Lab <sup>b</sup>	1
GEOG:1090	Globalization and Geographic Diversity <sup>b</sup>	3
RHET:1030	Rhetoric	3 - 4
or ENGL:1200	or The Interpretation of Literature	
GE CLAS Core: Historical Perspectives <sup>c</sup>		3

CSI:1600	Success at Iowa	2
<b>Hours</b>		<b>15-16</b>

<b>Spring</b>		
GEOG:1070	Contemporary Environmental Issues <sup>b</sup>	3
Major: geography "select one" course <sup>d, e</sup>		3 - 4
ENGL:1200	The Interpretation of Literature	3 - 4
or RHET:1030	or Rhetoric	
GE CLAS Core: Values and Culture <sup>c</sup>		3
Elective course <sup>f</sup>		3
<b>Hours</b>		<b>15-17</b>

<b>Second Year</b>		
<b>Fall</b>		
GEOG:1050	Foundations of GIS	4
STAT:2010	Statistical Methods and Computing <sup>b</sup>	3
GE CLAS Core: World Languages First Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		3
Elective course <sup>f</sup>		2
<b>Hours</b>		<b>16-17</b>

<b>Spring</b>		
STAT:3200	Applied Linear Regression	3
Major: environmental studies track course		3
GE CLAS Core: Diversity and Inclusion <sup>c</sup>		3
GE CLAS Core: World Languages Second Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		2
<b>Hours</b>		<b>15-16</b>

<b>Third Year</b>		
<b>Fall</b>		
Major: GIS "select one" course <sup>h</sup>		3
Major: computer science/math course <sup>i, j</sup>		3 - 4
Major: environmental studies track course		3
GE CLAS Core: World Languages Second Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		2
<b>Hours</b>		<b>15-17</b>

<b>Spring</b>		
GEOG:3992	Undergraduate Research	1 - 3
or CCP:1201	or Academic Internship	
or GEOG:3400	or Iowa Environmental Policy in Practice	
Major: environmental studies track course		3
GE CLAS Core: Literary, Visual, and Performing Arts <sup>c</sup>		3
GE CLAS Core: World Languages Fourth Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		3
<b>Hours</b>		<b>14-17</b>

<b>Fourth Year</b>		
<b>Fall</b>		
Major: environmental studies track course		3
GE CLAS Core: Natural Sciences without Lab <sup>c</sup>		3
Elective course <sup>f</sup>		3
Elective course <sup>f</sup>		3
Elective course <sup>f</sup>		3
<b>Hours</b>		<b>15</b>

**Spring**

GEOG:4030	Senior Project Seminar	3
or GEOG:4995	or Honors Thesis	
Elective course <sup>f</sup>		3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) <sup>k</sup>		
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>120-130</b>

- a Sustainability must be completed by choosing a course that has been approved for Sustainability AND for one of these General Education areas: Natural Sciences; Quantitative and Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Culture.
- b Fulfills a major requirement and may fulfill a GE requirement.
- c GE CLAS Core courses may be completed in any order unless used as a prerequisite for another course. Students should consult with an advisor about the best sequencing of courses.
- d Choose from the following options: GEOG:1060, GEOG:1070, GEOG:2110, GEOG:2910, GEOG:2950.
- e Students cannot choose a course that they have already used elsewhere in the major.
- f Students may use elective courses to earn credit towards the total s.h. required for graduation or to complete a double major, minors, or certificates.
- g Students who have completed four years of a single language in high school have satisfied the GE CLAS Core World Languages requirement. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course.
- h Students cannot double-count the same course for this requirement and a requirement in the track.
- i Choose from the following options: CS:1210, CS:2110, CS:2230, MATH:1380, MATH:1460. This course should be chosen based on math placement exam and/or prior coursework, and cannot count for more than one major requirement.
- j Enrollment in math courses requires completion of a placement exam.
- k Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Graduation Services.

**Geographic Information Science Track**

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
GE CLAS Core: Sustainability <sup>a</sup>		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Fall</b>		
GEOG:1020	The Global Environment <sup>b</sup>	3
GEOG:1021	The Global Environment Lab <sup>b</sup>	1

GEOG:1090	Globalization and Geographic Diversity <sup>b</sup>	3
RHET:1030	Rhetoric	3 - 4
or ENGL:1200	or The Interpretation of Literature	
GE CLAS Core: Historical Perspectives <sup>c</sup>		3
CSI:1600	Success at Iowa	2
<b>Hours</b>		<b>15-16</b>

**Spring**

GEOG:1050	Foundations of GIS	4
Major: geography "select one" course <sup>d, e</sup>		3 - 4
ENGL:1200	The Interpretation of Literature	3 - 4
or RHET:1030	or Rhetoric	
GE CLAS Core: Values and Culture <sup>c</sup>		3
Elective course <sup>f</sup>		3
<b>Hours</b>		<b>16-18</b>

**Second Year**

**Fall**

STAT:2010	Statistical Methods and Computing <sup>b</sup>	3
Major: GIS track course		3
GE CLAS Core: Diversity and Inclusion <sup>c</sup>		3
GE CLAS Core: World Languages First Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		2
<b>Hours</b>		<b>15-16</b>

**Spring**

STAT:3200	Applied Linear Regression	3
Major: GIS track course		3
GE CLAS Core: International and Global Issues or Social Sciences <sup>c</sup>		3
GE CLAS Core: World Languages Second Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		2
<b>Hours</b>		<b>15-16</b>

**Third Year**

**Fall**

CS:1110	Introduction to Computer Science <sup>b</sup>	3 - 4
or CS:1210	or Computer Science I: Fundamentals	
or CS:2110	or Programming for Informatics	
Major: GIS track course		3
GE CLAS Core: Literary, Visual, and Performing Arts <sup>c</sup>		3
GE CLAS Core: World Languages Second Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		2
<b>Hours</b>		<b>15-17</b>

**Spring**

GEOG:3400	Iowa Environmental Policy in Practice	1 - 3
or CCP:1201	or Academic Internship or Undergraduate Research	
or GEOG:3992		
Major: GIS track course		3
Major: computer science/math course <sup>h, i</sup>		3 - 4
GE CLAS Core: World Languages Fourth Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		3
<b>Hours</b>		<b>14-18</b>

**Fourth Year**

**Fall**

Major: GIS track course	3
GE CLAS Core: Natural Sciences without Lab <sup>c</sup>	3
Elective course <sup>f</sup>	3
Elective course <sup>f</sup>	3
Elective course <sup>f</sup>	3

**Hours 15**

**Spring**

GEOG:4030 Senior Project Seminar or GEOG:4995 or Honors Thesis	3
Elective course <sup>f</sup>	3

Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) <sup>j</sup>

**Hours 15**

**Total Hours 120-131**

- a Sustainability must be completed by choosing a course that has been approved for Sustainability AND for one of these General Education areas: Natural Sciences; Quantitative and Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Culture.
- b Fulfills a major requirement and may fulfill a GE requirement.
- c GE CLAS Core courses may be completed in any order unless used as a prerequisite for another course. Students should consult with an advisor about the best sequencing of courses.
- d Students cannot choose a course that they have already used elsewhere in the major.
- e Choose from the following options: GEOG:1060, GEOG:1070, GEOG:2110, GEOG:2910, GEOG:2950.
- f Students may use elective courses to earn credit towards the total s.h. required for graduation or to complete a double major, minors, or certificates.
- g Students who have completed four years of a single language in high school have satisfied the GE CLAS Core World Languages requirement. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course.
- h Choose from the following options: CS:1210, CS:2110, CS:2230, MATH:1380, MATH:1460. This course should be chosen based on math placement exam and/or prior coursework, and cannot count for more than one major requirement.
- i Enrollment in math courses requires completion of a placement exam.
- j Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Graduation Services.

**Health and Society Track**

**Course Title Hours**

**Academic Career**

**Any Semester**

GE CLAS Core: Sustainability <sup>a</sup>	<b>0</b>
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**First Year**

**Fall**

GEOG:1020 The Global Environment <sup>b</sup>	3
GEOG:1021 The Global Environment Lab <sup>b</sup>	1
GEOG:1090 Globalization and Geographic Diversity <sup>b</sup>	3
RHET:1030 Rhetoric or ENGL:1200 or The Interpretation of Literature	3 - 4

GE CLAS Core: Historical Perspectives <sup>c</sup>	3
CSI:1600 Success at Iowa	2

**Hours 15-16**

**Spring**

GEOG:2110 Seven Billion and Counting: Introduction to Population Dynamics <sup>b</sup>	3
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Major: geography "select one" course <sup>d, e</sup>	3 - 4
RHET:1030 Rhetoric or ENGL:1200 or The Interpretation of Literature	3 - 4

GE CLAS Core: Values and Culture <sup>c</sup>	3
Elective course <sup>f</sup>	3

**Hours 15-17**

**Second Year**

**Fall**

STAT:2010 Statistical Methods and Computing <sup>b</sup>	3
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GE CLAS Core: Diversity and Inclusion <sup>c</sup>	3
GE CLAS Core: World Languages First Level Proficiency or elective course <sup>g</sup>	4 - 5
Elective course <sup>f</sup>	3
Elective course <sup>f</sup>	2

**Hours 15-16**

**Spring**

GEOG:1050 Foundations of GIS	4
STAT:3200 Applied Linear Regression	3
GE CLAS Core: World Languages Second Level Proficiency or elective course <sup>g</sup>	4 - 5
Elective course <sup>f</sup>	3
Elective course <sup>f</sup>	1

**Hours 15-16**

**Third Year**

**Fall**

GEOG:3110 Geography of Health	3
Major: computer science/math course <sup>h, i</sup>	4
GE CLAS Core: Literary, Visual, and Performing Arts <sup>c</sup>	3
GE CLAS Core: World Languages Second Level Proficiency or elective course <sup>g</sup>	4 - 5
Elective course <sup>f</sup>	2

**Hours 16-17**

**Spring**

CCP:1201	Academic Internship	1 - 3
or GEOG:3992	or Undergraduate Research	
or GEOG:3400	or Iowa Environmental Policy in Practice	
Major: Health and Society "select two" course <sup>j</sup>		3
Major: GIS "select one" course <sup>k</sup>		3
GE CLAS Core: World Languages Fourth Level Proficiency or elective course <sup>g</sup>		4 - 5
Elective course <sup>f</sup>		3
<b>Hours</b>		<b>14-17</b>

**Fourth Year****Fall**

GEOG:4150	Health and Environment: GIS Applications	3
Major: Health and Society "select two" course <sup>j</sup>		3
Elective course <sup>f</sup>		3
Elective course <sup>f</sup>		3
Elective course <sup>f</sup>		3
<b>Hours</b>		<b>15</b>

**Spring**

GEOG:4995	Honors Thesis	3
or GEOG:4030	or Senior Project Seminar	
GE CLAS Core: Natural Sciences without Lab <sup>c</sup>		3
Elective course <sup>f</sup>		3
Elective course <sup>f</sup>		3
Elective course <sup>f</sup>		3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) <sup>i</sup>		
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>120-129</b>

j Choose from the following: GEOG:3070, GEOG:3210, GEOG:3300, GEOG:3760, GEOG:3920, GEOG:4770.

k Cannot use GEOG:4150, as it is required elsewhere in the track.

l Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Graduation Services.

a Sustainability must be completed by choosing a course that has been approved for Sustainability AND for one of these General Education areas: Natural Sciences; Quantitative and Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Culture.

b Fulfills a major requirement and may fulfill a GE requirement.

c GE CLAS Core courses may be completed in any order unless used as a prerequisite for another course. Students should consult with an advisor about the best sequencing of courses.

d Choose from the following options: GEOG:1060, GEOG:1070, GEOG:2110, GEOG:2910, GEOG:2950.

e Students cannot choose a course that they have already used elsewhere in the major.

f Students may use elective courses to earn credit towards the total s.h. required for graduation or to complete a double major, minors, or certificates.

g Students who have completed four years of a single language in high school have satisfied the GE CLAS Core World Languages requirement. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course.

h Choose from the following options: CS:1210, CS:2110, CS:2230, MATH:1380, MATH:1460. This course should be chosen based on math placement exam and/or prior coursework, and cannot count for more than one major requirement.

i Enrollment in math courses requires completion of a placement exam.