GEOGRAPHY - BACHELOR OF ARTS (BA)

The Department of Geography offers a bachelor of arts (BA) degree in geography. The geography BA emphasizes knowledge and awareness of:

- The unique contributions of the discipline to understanding the spatial components of problems and the diverse factors relating to human interaction with the environment.
- The spatial distributions of physical and human characteristics on the Earth surface, the general patterns these form and the processes that have created and are changing these patterns.
- The major themes of geographical analysis, including absolute and relative location; human and physical characteristics of place; human and environmental relations; movement of people, ideas and products; and regionalization.
- The general geographical principles of human-environment interaction, global change and human spatial organization.

Requirements

General Requirements

Students must complete the general requirements of the College of Arts and Sciences and the required courses below.

In addition to a standard degree in geography, the department offers transcripted concentrations in geographic information science, human geography, environment-society geography and physical geography. Coursework required for each concentration is listed on the Concentration Areas tab.

Students must complete at least 37 and no more than 45 credit hours in geography with grades of C- or better (23 credit hours must be upper-division). No pass/fail grades are allowed in the major.

Transfer students majoring in geography must complete at least 12 credit hours of upper-division geography courses at CU Boulder. No course may be used to fulfill more than one requirement for the major.

Required Courses and Credit Hours

Certain course selections are better preparation for certain concentrations.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>GEOG 1001</td>
<td>Environmental Systems: Climate and Vegetation</td>
<td>4</td>
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<tr>
<td>GEOG 1011</td>
<td>Environmental Systems: Landscapes and Water</td>
<td>4</td>
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<tr>
<td>GEOG 3023</td>
<td>Statistics and Geographic Data</td>
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</tr>
</tbody>
</table>

Select one of the following human geography courses: 3

- GEOG 1962 Geographies of Global Change
- GEOG 1972 Environment-Society Geography
- GEOG 1982 World Regional Geography
- GEOG 1992 Human Geographies
- GEOG 2092 Advanced Introduction to Human Geography

Select one of the following mapping courses: 3-4

- GEOG 2053 Mapping a Changing World
- or GEOG 3053 Geographic Information Science: Mapping

Select at least one of the following methods courses: 3-4

- GEOG 4023 Advanced Quantitative Methods for Spatial Data
- GEOG 4043 Advanced Geovisualization and Web Mapping
- GEOG 4093 Remote Sensing of the Environment
- GEOG 4103 Geographic Information Science: Spatial Analytics
- GEOG 4173 Research Seminar
- GEOG 4463 Earth Analytics Data Science Bootcamp
- GEOG 4563 Earth Analytics
- GEOG 4603 GIS in the Social and Natural Sciences
- GEOG 4722 Field Methods in Human Geography

GEOG Electives to compete the major (See Concentration Areas Tab) 16-14

Total Credit Hours 37

1 Does not count as a methods course for students pursuing the GIS concentration.

Graduating in Four Years

This applies only to the general geography degree. Consult the Four-Year Guarantee Requirements for information on eligibility. The concept of "adequate progress" as it is used here only refers to maintaining eligibility for the four-year guarantee: it is not a requirement for the major. To maintain adequate progress in geography, students should meet the following requirements:

- By the end of the third semester, complete GEOG 1001, GEOG 1011 and one of the following: GEOG 1962, GEOG 1972, GEOG 1982, GEOG 1992 or GEOG 2092.
- By the end of the sixth semester, complete an approved upper-division human geography course and 9 credit hours of upper-division geography courses.
- By the end of the sixth semester, complete GEOG 2053 or GEOG 3053 and GEOG 3023.
- By the eighth semester, complete the remaining upper-division credit hours.

Concentration Areas

General Geography Concentration

In addition to the courses required of all concentrations, complete the following GEOG coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>

At least one upper-division human or environment-society geography course (3XX2, 4XX2 or GEOG 4501). 3-4

Upper-division Geography electives, to reach 23 upper-division credit hours in the major. 10-13

Total Credit Hours 13-17

Human Geography Concentration

In addition to the courses required of all concentrations, complete the following GEOG coursework.

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<tr>
<th>Code</th>
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<th>Credit Hours</th>
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</table>

Select at least one of the following upper-division courses: 3-4

- GEOG 1011 Environmental Systems: Landscapes and Water
- GEOG 1001 Environmental Systems: Climate and Vegetation
- GEOG 1023 Statistics and Geographic Data

Select one of the following human geography courses: 3

- GEOG 1962 Geographies of Global Change
- GEOG 1972 Environment-Society Geography
- GEOG 1982 World Regional Geography
- GEOG 1992 Human Geographies
- GEOG 2092 Advanced Introduction to Human Geography

Select one of the following mapping courses: 3-4

- GEOG 2053 Mapping a Changing World
- or GEOG 3053 Geographic Information Science: Mapping

Select at least one of the following methods courses: 3-4

- GEOG 4023 Advanced Quantitative Methods for Spatial Data
- GEOG 4043 Advanced Geovisualization and Web Mapping
- GEOG 4093 Remote Sensing of the Environment
- GEOG 4103 Geographic Information Science: Spatial Analytics
- GEOG 4173 Research Seminar
- GEOG 4463 Earth Analytics Data Science Bootcamp
- GEOG 4563 Earth Analytics
- GEOG 4603 GIS in the Social and Natural Sciences
- GEOG 4722 Field Methods in Human Geography

GEOG Electives to compete the major (See Concentration Areas Tab) 16-14

Total Credit Hours 37

1 Does not count as a methods course for students pursuing the GIS concentration.
In addition to the courses required of all concentrations, complete the following GEOG coursework.

Select three of the following electives:  

GEOG 3422 Political Ecology  
GEOG 3612 Geography of American Cities  
GEOG 3662 Economic Geography  
GEOG 3672 Gender and the Global Economy  
GEOG 3682 Geography of International Development  
GEOG 3692 Introduction to Global Public Health  
GEOG 3742 Place, Power, and Contemporary Culture  
GEOG 3812 Mexico, Central America, and the Caribbean  
GEOG 3822 Geography of China  
GEOG 3832 Geographies of South Asia  
GEOG 3842 Human Geography of Czechia: Political, Economic and Social Transitions  
GEOG 3862 Geography of Africa  
GEOG 3882 Geography of the Former Soviet Union  
GEOG 4002 Topics in Human and Environment/Society Geography  
GEOG 4173 Research Seminar (may be applied to the concentration on a case-by-case basis)  
GEOG 4292 Migration, Immigrant Adaptation, and Development  
GEOG 4622 City Life  
GEOG 4632 Development Geography  
GEOG 4712 Political Geography  
GEOG 4732 Population Geography  
GEOG 4852 Health and Medical Geography  
GEOG 3930 Internship (may be applied to the concentration on a case-by-case basis)  
GEOG 4990 Senior Thesis (may be applied to the concentration on a case-by-case basis)

Take one upper-division elective in Geographic Information Science, Human Geography, or Physical Geography.  

Total Credit Hours 15-16

This requirement may be met by completion of one or two semester-long, third-year, university-level grammar courses (depending on the language) with a grade of C- or better, while also satisfying language department requirements for advancement through the sequence.  

Unless otherwise noted, the department-enforced prerequisite for all courses is GEOG 1962, GEOG 1972, GEOG 1982, GEOG 1992 or GEOG 2092.

Special topics courses may be used to satisfy upper-division concentration requirements with approval from the department.

### Physical Geography Concentration

In addition to the courses required of all concentrations, complete the following GEOG coursework as well as the ancillary mathematics and science coursework.

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<tr>
<th>Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>GEOG 3402</td>
<td>Natural Hazards</td>
<td>3</td>
</tr>
<tr>
<td>or GEOG 3422</td>
<td>Political Ecology</td>
<td></td>
</tr>
<tr>
<td>ENVS 2000</td>
<td>Applied Ecology for Environmental Studies</td>
<td>4</td>
</tr>
</tbody>
</table>

Select three of the following electives:  

GEOG 3402 Natural Hazards  
GEOG 3412 Conservation Practice and Resource Management  
GEOG 3422 Political Ecology  
GEOG 3682 Geography of International Development  
GEOG 3672 Gender and the Global Economy  
GEOG 3692 Introduction to Global Public Health  
GEOG 3812 Mexico, Central America, and the Caribbean  
GEOG 3822 Geography of China  
GEOG 3862 Geography of Africa  
GEOG 3842 Human Geography of Czechia: Political, Economic and Social Transitions  
GEOG 3862 Geography of Africa  
GEOG 3882 Geography of the Former Soviet Union  
GEOG 4002 Topics in Human and Environment/Society Geography  
GEOG 4173 Research Seminar (may be applied to the concentration on a case-by-case basis)  
GEOG 4501 Water Resources and Water Management of Western United States  
GEOG 4742 Topics in Environment and Society  
GEOG 4812 Environment and Development in South America  
GEOG 4822 Environment and Development in China  
GEOG 3930 Internship (may be applied to the concentration on a case-by-case basis)  
GEOG 4990 Senior Thesis (may be applied to the concentration on a case-by-case basis)

Take one upper-division elective from either the Geographic Information Science, Human Geography, or Physical Geography list.

Total Credit Hours 19-20

1. Unless otherwise noted, the department-enforced prerequisite for all courses is GEOG 1962, GEOG 1972, GEOG 1982, GEOG 1992 or GEOG 2092.
2. Special topics courses may be used to satisfy upper-division concentration requirements with approval from the department.
3. Special topics courses may be used to satisfy upper-division concentration requirements with approval from the department.

### Environment and Society Geography Concentration

In addition to the courses required of all concentrations, complete the following GEOG coursework.
GEOG 3301 Analysis of Climate and Weather Observations
GEOG 3351 Biogeography
GEOG 3511 Introduction to Hydrology
GEOG 3601 Principles of Climate
GEOG 4001 Topics in Physical Geography
GEOG 4173 Research Seminar (may be applied to the concentration on a case-by-case basis)
GEOG 4201 Biometeorology
GEOG 4241 Principles of Geomorphology
GEOG 4251 Fluvial Geomorphology
GEOG 4261 Glaciers and Permafrost
GEOG 4271 The Arctic Climate System
GEOG 4311 Watershed Biogeochemistry
GEOG 4321 Snow Hydrology
GEOG 4331 Mountain Climatology
GEOG 4371 Forest Geography: Principles and Dynamics
GEOG 4401 Soils Geography
GEOG 4930 Internship (may be applied to the concentration on a case-by-case basis)
GEOG 4990 Senior Thesis (may be applied to the concentration on a case-by-case basis)

Take one upper-division elective from the Geographic Information Science, Human Geography, or Environment and Society Geography list.

Total Credit Hours 15-20

Recommended Four-Year Plan of Study

Through the required coursework for the major, students will complete all 12 credit hours of the Natural Sciences area of the Gen Ed Distribution Requirement, including the lab component and at least 6 credits hours of the Social Sciences area of this requirement.

Depending on which track students follow and which elective courses they select within the track of the major, students can complete all of the Social Sciences area and 3 credits in the Arts and Humanities area of the Gen Ed Distribution Requirement and, potentially, the Global Perspective and United States Perspective component of the Gen Ed Diversity Requirement.

Course Title Credit Hours
First Year
Fall Semester
GEOG 1001 Environmental Systems: Climate and Vegetation 4
Gen. Ed. Skills course (example: Lower-division Written Communication) 3
Gen. Ed. Distribution/Diversity course (example: Arts & Humanities/US Perspective) 3
Elective/MAPS 3
Elective/MAPS 3

Total Credit Hours 16

Spring Semester
GEOG 1011 Environmental Systems: Landscapes and Water 4

GEOG 4103 Geographic Information Science: Spatial Analytics 4
Select three of the following electives: 9-12
GEOG 4003 Advanced Geovisualization and Web Mapping
GEOG 4043 Remote Sensing of the Environment
GEOG 4173 Research Seminar (may be applied to the concentration on a case-by-case basis)
GEOG 4203 Geographic Information Science: Spatial Modeling
GEOG 4303 Geographic Information Science: Spatial Programming
GEOG 4503 Geographic Information Science: Project Management
GEOG 3930 Internship (may be applied to the concentration on a case-by-case basis)
GEOG 4990 Senior Thesis (may be applied to the concentration on a case-by-case basis)
Take one upper-division elective from the Human Geography, Environment and Society Geography, or Physical Geography list.

Total Credit Hours 16-20

1 Special topics courses may be used to satisfy upper-division concentration requirements with approval from the department.

Geographic Information Science Concentration

In addition to the courses required of all concentrations, complete the following GEOG coursework.

Code Title Credit Hours
Required GEOG Coursework
GEOG 4103 Geographic Information Science: Spatial Analytics 4
Select three of the following electives: 9-12
GEOG 4003 Advanced Geovisualization and Web Mapping
GEOG 4043 Remote Sensing of the Environment
GEOG 4173 Research Seminar (may be applied to the concentration on a case-by-case basis)
GEOG 4203 Geographic Information Science: Spatial Modeling
GEOG 4303 Geographic Information Science: Spatial Programming
GEOG 4503 Geographic Information Science: Project Management
GEOG 3930 Internship (may be applied to the concentration on a case-by-case basis)
GEOG 4990 Senior Thesis (may be applied to the concentration on a case-by-case basis)
Take one upper-division elective from the Human Geography, Environment and Society Geography, or Physical Geography list.

Total Credit Hours 16-20

Ancillary Mathematics & Science Coursework
Select one of the following two-semester sequences in calculus: 8-10
MATH 1300 Calculus 1 & MATH 2300 Calculus 2
APPM 1350 Calculus 1 for Engineers & APPM 1360 Calculus 2 for Engineers
Select three of the following semesters of physics and chemistry, including related labs: 14-15
PHYS 1110 General Physics 1
PHYS 1120 General Physics 2
& PHYS 1140 and Experimental Physics 1
CHEM 1113 General Chemistry 1
& CHEM 1114 and Laboratory in General Chemistry 1
CHEM 1133 General Chemistry 2
& CHEM 1134 and Laboratory in General Chemistry 2

Total Credit Hours 22-25

Recommended Four-Year Plan of Study

Through the required coursework for the major, students will complete all 12 credit hours of the Natural Sciences area of the Gen Ed Distribution Requirement, including the lab component and at least 6 credits hours of the Social Sciences area of this requirement.

Depending on which track students follow and which elective courses they select within the track of the major, students can complete all of the Social Sciences area and 3 credits in the Arts and Humanities area of the Gen Ed Distribution Requirement and, potentially, the Global Perspective and United States Perspective component of the Gen Ed Diversity Requirement.

Course Title Credit Hours
First Year
Fall Semester
GEOG 1001 Environmental Systems: Climate and Vegetation 4
Gen. Ed. Skills course (example: Lower-division Written Communication) 3
Gen. Ed. Distribution/Diversity course (example: Arts & Humanities/US Perspective) 3
Elective/MAPS 3
Elective/MAPS 3

Total Credit Hours 16

Spring Semester
GEOG 1011 Environmental Systems: Landscapes and Water 4

1 Special topics courses may be used to satisfy upper-division concentration requirements with approval from the department.
<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td><strong>Second Year</strong></td>
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<tr>
<td>Fall Semester</td>
<td>GEOG 1962 Geographies of Global Change</td>
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<td>or GEOG 1972 Environment-Society Geography</td>
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<td>or GEOG 1982 World Regional Geography</td>
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<td>or GEOG 2092 Advanced Introduction to Human Geography</td>
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<td></td>
<td>Gen. Ed. Distribution course (example: Arts &amp; Humanities)</td>
<td>3</td>
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<td></td>
<td>Gen. Ed. Distribution course (example: Social Sciences) (if needed)</td>
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<td></td>
<td>Elective</td>
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<td></td>
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<tr>
<td>Spring Semester</td>
<td>GEOG 2053 Mapping a Changing World</td>
<td>3-4</td>
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<tr>
<td></td>
<td>or GEOG 3053 Geographic Information Science: Mapping</td>
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<td>GEOG 3023 Statistics and Geographic Data</td>
<td>4</td>
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<tr>
<td></td>
<td>Gen. Ed. Distribution course (example: Arts &amp; Humanities)</td>
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<td>Gen. Ed. Distribution course (example: Social Sciences) (if needed)</td>
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<td>Credit Hours</td>
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<tr>
<td><strong>Third Year</strong></td>
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<tr>
<td>Fall Semester</td>
<td>GEOG Upper-division Elective</td>
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<td>Gen. Ed. Skills course (example: Upper-division Written Communication)</td>
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<td>Gen. Ed. Distribution course (example: Natural Sciences) (if needed)</td>
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<td>Credit Hours</td>
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<td>Spring Semester</td>
<td>GEOG Upper-division Elective</td>
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<td>GEOG Methods course (Upper-division)</td>
<td>3-4</td>
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<td>Gen. Ed. Distribution course (example: Social Sciences) (if needed)</td>
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<td><strong>Fourth Year</strong></td>
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<td>Fall Semester</td>
<td>GEOG Upper-division Elective</td>
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