GEOGRAPHY, B.S.

The Bachelor of Science in Geography degree focuses on Earth's physical systems and the connections between them. Graduates will gain scientific insights into humankind's impact on natural environments, making this major ideal for students interested in pursuing climate science, geographic information science (GIS) mapping, or similar technical fields.

Compared to the B.A. in geography, the B.S. focuses more on physical landscapes and processes operating in the atmosphere, biosphere, hydrosphere and lithosphere while still providing a well-rounded selection of social sciences and humanities courses. Students on the B.S. track choose one of three concentrations: general geography, GIS or physical and environmental geography.

Students learn to interpret and analyze Earth’s physical environments, use geospatial technologies and statistics, and communicate findings effectively. The skills students build in the geography program translate across fields in the academic, business, government and non-profit sectors.

Learning Outcomes

1. Students will demonstrate the ability to communicate in written and oral forms. These outcomes are evaluated together because they are connected for our students who often are in careers where their written work is the substance of their oral presentations. We see the linkage of the two to be the most important aspect.
2. Students will demonstrate understanding of and the use of one geographical technique such as GIS, remote sensing, cartography, or spatial statistics.
3. Students will demonstrate their knowledge of the central themes within the discipline.
4. Students will be prepared for careers in the field or for graduate study in geography.

Admissions

Entrance Requirements

New freshmen who meet University admissions standards are eligible for admission to degree programs offered by the college. A student who wishes to enter the College of Arts and Sciences from another college on the Columbia campus must be in good standing and have a cumulative GPA of 2.00 or higher. A student who wishes to enter the College of Arts and Sciences from another UofSC campus must fulfill one of the following requirements:

1. Be in good standing, meet the admission requirements for a baccalaureate degree on the Columbia campus, and have a cumulative GPA of 2.00 or higher.
2. Be in good standing and have completed 30 semester hours with a GPA of 2.00 or higher on a UofSC campus.

Some programs in the College of Arts and Sciences have special admission requirements established by the department or committee that supervises the specific degree program, for example, Cardiovascular Technology, Biological Sciences, Chemistry, Biochemistry and Molecular Biology, Economics, Environmental Science, the Bachelor of Arts in Interdisciplinary Studies, and the Bachelor of Science in Interdisciplinary Studies. These requirements are listed in the sections of this bulletin that describe department and special degree programs.

Degree Requirements (120 hours)

Program of Study

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
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<td>1. Carolina Core</td>
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<td>2. College Requirements</td>
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<td>3. Program Requirements</td>
<td>33-49</td>
</tr>
<tr>
<td>4. Major Requirements</td>
<td>24-25</td>
</tr>
</tbody>
</table>

Founding Documents Requirement

All undergraduate students must take a 3-credit course or its equivalent with a passing grade in the subject areas of History, Political Science, or African American Studies that covers the founding documents including the United States Constitution, the Declaration of Independence, the Emancipation Proclamation and one or more documents that are foundational to the African American Freedom struggle, and a minimum of five essays from the Federalist papers. This course may count as a requirement in any part of the program of study including the Carolina Core, the major, minor or cognate, or as a general elective. Courses that meet this requirement are listed here (https://academicbulletins.sc.edu/undergraduate/founding-document-courses/).

1. Carolina Core Requirements (32-44 hours)

CMW – Effective, Engaged, and Persuasive Communication: Written (6 hours)

must be passed with a grade of C or higher

- any CC-CMW courses (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

ARP – Analytical Reasoning and Problem Solving (6-8 hours)

- MATH 122* or MATH 141*
- MATH 142* or MATH 170* or MATH 172*

SCI – Scientific Literacy (8 hours)

- Two 4-credit hour CC-SCI courses (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GFL – Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)

Demonstration of proficiency in one foreign language equivalent to the minimal passing grade on the exit examination in the 122 course is required. Students can demonstrate this proficiency by successfully completing Phase II of the Proficiency Test or by successfully completing the 122 course, including the exit exam administered as part of that course.

- CC-GFL courses (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

It is strongly recommended that students continuing the study of a foreign language begin college-level study of that language in their first semester and continue in that language until their particular foreign language requirement is completed.
GHS – Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)

- any CC-GHS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GSS – Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)

- any CC-GSS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

AIU – Aesthetic and Interpretive Understanding (3 hours)

- any CC-AIU course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

CMS – Effective, Engaged, and Persuasive Communication: Spoken Component ¹ (0-3 hours)

- any overlay or stand-alone CC-CMS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

INF – Information Literacy ¹ (0-3 hours)

- any overlay or stand-alone CC-INF course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

VSR – Values, Ethics, and Social Responsibility ¹ (0-3 hours)

- any overlay or stand-alone CC-VSR course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

¹ Carolina Core Stand Alone or Overlay Eligible Requirements — Overlay-approved courses offer students the option of meeting two Carolina Core components in a single course. A maximum of two overlays is allowed. The total Carolina Core credit hours must add up to a minimum of 31 hours. Some programs may have a higher number of minimum Carolina Core hours due to specified requirements.

Choose at least 1 of the following to fulfill a Carolina Core requirement

**must be passed with a grade of C or higher**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 103</td>
<td>Introduction to Geography (*)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 104</td>
<td>Introduction to Physical Geography (*)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 105</td>
<td>The Digital Earth (*)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 121</td>
<td>Geographies of Global Change (*)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 201</td>
<td>Landform Geography (*)</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 202</td>
<td>Weather and Climate (*)</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 210</td>
<td>Peoples, Places, and Environments (*)</td>
<td>3</td>
</tr>
</tbody>
</table>

2. College Requirements (15-18 hours)

Foreign Language (0-3 hours)

- only if needed to meet 122-level proficiency

Analytical Reasoning (6 hours)

Course                  | Title                                      | Credits |
------------------------|--------------------------------------------|---------|
STAT 201                | Elementary Statistics (*)                  | 3       |
CSCE 102                | General Applications Programming (*)        | 3       |
Total Credit Hours      |                                            | 6       |

History (3 hours)

The College of Arts and Sciences requires one additional GHS course beyond the Carolina Core GHS requirement.

- If the Carolina Core GHS requirement is fulfilled by a U.S. history course, the College of Arts and Sciences history requirement must be fulfilled by a non-U.S. history course.
- If the Carolina Core GHS requirement is fulfilled by a non-U.S. history course, the College of Arts and Sciences history requirement must be fulfilled by a U.S. history course.

Please select the College of Arts and Sciences history requirement from the approved list of U.S. and non-U.S. history courses (https://academicbulletins.sc.edu/undergraduate/arts-sciences/history-requirement/).

Social Science and Fine Arts or Humanities (6 hours)

- Social Science (3 hours)
  - The College of Arts and Science requires one 3-hour Social Science Course (https://academicbulletins.sc.edu/undergraduate/arts-sciences/courses-acceptable-social-science/)
  - Fine Arts/Humanities (3 Hours)
    - A Bachelor of Science from the College of Arts and Sciences requires one 3-hour Fine Arts/Humanities Course (https://academicbulletins.sc.edu/undergraduate/arts-sciences/courses-acceptable-fine-arts-humanities/)

3. Program Requirements (33-49 hours)

Cognate or Minor (12-18 hours)

Students must complete a cognate (12 hours) or a minor as part of this program. In lieu of a cognate or minor, an additional major may be added to a student’s program of study. Additional majors must include all major courses as well as any prescribed courses noted (*) in the bulletin. Prescribed courses noted in the bulletin may be shared with Carolina Core, College requirements, and Program requirements in the primary program.

Cognate (12 hours)

The cognate must consist of twelve (12) hours of courses at the advanced level, outside of but related to the major. The cognate may be taken in one or more departments or programs.

Courses offered by departments and programs that are acceptable for cognate credit are outlined in the section titled Courses Acceptable for Cognate Credit in Degree Programs in the College of Arts and Sciences (https://academicbulletins.sc.edu/undergraduate/arts-sciences/courses-acceptable-cognate/). Some major programs have specific cognate requirements. It should be emphasized that the cognate is not a second set of elective courses to be chosen at random by the student. Students are urged to consult their major advisors for specific requirements in their major.
Unless otherwise noted, for Bachelor of Science degrees, cognate courses passed with a grade of D or higher are acceptable.

**Minor (18 hours)**

In place of the cognate a student in the College of Arts and Sciences may choose a minor consisting of at least 18 credit hours of prescribed courses.

The minor is intended to develop a coherent basic preparation in a second area of study. It differs from the cognate inasmuch as the courses must follow a structured sequence.

Courses applied toward general education requirements cannot be counted toward the minor. No course may satisfy both major and minor requirements. All minor courses must be passed with a grade of C or higher. At least half of the courses in the minor must be completed in residence at the University.

A list of minor programs of study can be found at Programs A-Z (https://academicbulletins.sc.edu/undergraduate/programs-az/).

**Electives (15-37 hours)**

120 (or 128) degree applicable credits are required to complete any degree at UofSC. After the cognate, minor or second major is complete, any additional credits needed to reach 120 (or 128) total credits can be fulfilled by electives. No courses of a remedial, developmental, skill-acquiring, or vocational nature may apply as credit toward degrees in the College of Arts and Sciences. The College of Arts and Sciences allows the use of the Pass-Fail option on elective courses. Further clarification on inapplicable courses can be obtained from the College of Arts and Sciences.

Note: 4-25 hours of electives will be needed to reach hours to graduate, if completing the B.S. with Distinction.

**4. Major Requirements (24-25 hours)**

A minimum grade of C is required in all major courses.

**Concentrations (24-25 hours)**

Students must choose one of the following three concentrations:

**General Geography (24 hours)**

At least two courses for the major must be from the 500-level. GEOG 595 can be used to fulfill up to 3 hours of geography elective credit, but not the 500-level requirement.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 495</td>
<td>Seminar in Geography</td>
<td>3</td>
</tr>
<tr>
<td>Geography Elective: Select two courses at the 200-level or above with advisor’s approval.</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Select 15 hours from the following:</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

| GEOG 285 | Introduction to Drones for Airborne Spatial Data | 3 |
| GEOG 310 | Topics in Geography | 3 |
| GEOG 311 | Cultural Geography | 3 |
| GEOG 312 | Geography and Global Geopolitics | 3 |
| GEOG 313 | Economic Geography | 3 |
| GEOG 321 | Sustainable Cities | 3 |
| GEOG 324 | Landscapes of the United States | 3 |
| GEOG 330 | The Geography of Disasters | 3 |
| GEOG 341 | Cartography | 3 |

**Concentrations**

- **General Geography (24 hours)**

- **Geographies of American Cities**

- **Interpretation of Aerial Photographs**

- **Climate and Society**

- **Water as a Resource**

- **Biogeography**

- **Cartographic Animation**

- **Geography of Wind**

- **Geographic Information Systems**

- **Hurricanes and Tropical Climatology**

- **America's National Parks**

- **Air Pollution Climatology**

- **World Tourism Geography**

- **Special Topics in Geographic Research**

- **Planning and Locational Analysis**

- **Migration and Globalization**

- **Political Geography**

- **Coastal Zone Management**

- **Landscapes of South Carolina**

- **Geographical Analysis of Transportation**

- **Environmental Hazards**

- **Quantitative Methods in Geographic Research**

- **Hazards Analysis and Planning**

- **Advanced Cartography**

- **Dynamic Cartography**

- **Geography of the City**

- **Synoptic Meteorology**

- **Applied Climatology**

- **Fluvial Geomorphology**

- **Water and Watersheds**

- **Principles of Remote Sensing**

- **LiDARgrammetric and Photogrammetric Digital Surface Mapping**

- **Spatial Programming**

- **WebGIS**

- **Source Materials for Geographic Instruction**

- **Contemporary Issues in Geography Education**

- **Satellite Mapping and the Global Positioning System**

- **Advanced Geographic Information Systems**

- **GIS-Based Modeling**

- **Geographic Information System (GIS) Databases and Their Use**

- **Social Aspects of Environmental Planning and Management**

- **Long-Term Environmental Change**

- **Human Dimensions of Global Environmental Change**

- **International Development and the Environment**

- **Geography of Public Land and Water Policy**

- **Microclimatology**

- **Climatic Change and Variability**
Geography, B.S.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 575</td>
<td>Digital Techniques and Applications in Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>GEOG 581</td>
<td>Globalization and Cultural Questions</td>
<td></td>
</tr>
<tr>
<td>GEOG 590</td>
<td>Beach-Dune Interactions</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours** 24

1 Courses used to fulfill Carolina Core or College Requirements may not be used again to fulfill these requirements.

**Geographic Information Science (24-25 hours)**

At least two courses for the major must be from the 500-level. GEOG 595 can be used to fulfill up to 3 hours of geography elective credit, but not the 500-level requirement.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 363</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two of the following: 6

- GEOG 341 Cartography
- GEOG 345 Interpretation of Aerial Photographs
- GEOG 531 Quantitative Methods in Geographic Research

Select three of the following: 9

- GEOG 285 Introduction to Drones for Airborne Spatial Data
- GEOG 349 Cartographic Animation
- GEOG 535 Hazards Analysis and Planning
- GEOG 541 Advanced Cartography
- GEOG 542 Dynamic Cartography
- GEOG 551 Principles of Remote Sensing
- GEOG 552 LiDARgrammetric and Photogrammetric Digital Surface Mapping
- GEOG 554 Spatial Programming
- GEOG 556 WebGIS
- GEOG 562 Satellite Mapping and the Global Positioning System
- GEOG 563 Advanced Geographic Information Systems
- GEOG 564 GIS-Based Modeling
- GEOG 565 Geographic Information System (GIS) Databases and Their Use
- GEOG 575 Digital Techniques and Applications in Remote Sensing
- GEOG 495 Seminar in Geography 3

**Geography Elective:** Select one non-GIScience course at the 200-level 3-4 or above with advisor’s approval from the following list:

- GEOG 201 Landform Geography
- GEOG 202 Weather and Climate
- GEOG 210 Peoples, Places, and Environments
- GEOG 221 Geography of South Carolina
- GEOG 223 Geography of Latin America
- GEOG 224 Geography of North America
- GEOG 225 Geography of Europe
- GEOG 226 Geography of the Middle East
- GEOG 228 Geography of Sub-Saharan Africa
- GEOG 310 Topics in Geography
- GEOG 311 Cultural Geography
- GEOG 312 Geography and Global Geopolitics
- GEOG 313 Economic Geography
- GEOG 319 Cities in a Changing World
- GEOG 321 Sustainable Cities
- GEOG 324 Landscapes of the United States
- GEOG 330 The Geography of Disasters
- GEOG 343 Environment and Society
- GEOG 344 Geographies of American Cities
- GEOG 346 Climate and Society
- GEOG 347 Water as a Resource
- GEOG 348 Biogeography
- GEOG 360 Geography of Wind
- GEOG 365 Hurricanes and Tropical Climatology
- GEOG 370 America’s National Parks
- GEOG 371 Air Pollution Climatology
- GEOG 378 World Tourism Geography
- GEOG 380 Global Geography of Human Rights
- GEOG 510 Special Topics in Geographic Research
- GEOG 511 Planning and Locational Analysis
- GEOG 512 Migration and Globalization
- GEOG 515 Political Geography
- GEOG 516 Coastal Zone Management
- GEOG 521 Landscapes of South Carolina
- GEOG 525 Geographical Analysis of Transportation
- GEOG 530 Environmental Hazards
- GEOG 531 Quantitative Methods in Geographic Research
- GEOG 535 Hazards Analysis and Planning
- GEOG 538 Global Food Politics
- GEOG 544 Geography of the City
- GEOG 545 Synoptic Meteorology
- GEOG 546 Applied Climatology
- GEOG 547 Fluvial Geomorphology
- GEOG 549 Water and Watersheds
- GEOG 550 Source Materials for Geographic Instruction
- GEOG 556 Social Aspects of Environmental Planning and Management
- GEOG 557 Long-Term Environmental Change
- GEOG 558 Human Dimensions of Global Environmental Change
- GEOG 569 International Development and the Environment
- GEOG 570 Geography of Public Land and Water Policy
- GEOG 571 Microclimatology
- GEOG 573 Climatic Change and Variability
- GEOG 581 Globalization and Cultural Questions
- GEOG 590 Beach-Dune Interactions

**Total Credit Hours** 24-25

1 GEOG 341, GEOG 345 or GEOG 531 may be used if not used above.

**Physical/Environmental Geography (24 hours)**

At least two courses for the major must be from the 500-level. GEOG 595 can be used to fulfill up to 3 hours of geography elective credit, but not the 500-level requirement.
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 341</td>
<td>Cartography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 345</td>
<td>Interpretation of Aerial Photographs</td>
<td></td>
</tr>
<tr>
<td>GEOG 363</td>
<td>Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GEOG 551</td>
<td>Principles of Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>GEOG 495</td>
<td>Seminar in Geography</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 5-6 courses from the following: 18

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 330</td>
<td>The Geography of Disasters</td>
</tr>
<tr>
<td>GEOG 343</td>
<td>Environment and Society</td>
</tr>
<tr>
<td>GEOG 346</td>
<td>Climate and Society</td>
</tr>
<tr>
<td>GEOG 347</td>
<td>Water as a Resource</td>
</tr>
<tr>
<td>GEOG 348</td>
<td>Biogeography</td>
</tr>
<tr>
<td>GEOG 360</td>
<td>Geography of Wind</td>
</tr>
<tr>
<td>GEOG 365</td>
<td>Hurricanes and Tropical Climatology</td>
</tr>
<tr>
<td>GEOG 370</td>
<td>America's National Parks</td>
</tr>
<tr>
<td>GEOG 371</td>
<td>Air Pollution Climatology</td>
</tr>
<tr>
<td>GEOG 516</td>
<td>Coastal Zone Management</td>
</tr>
<tr>
<td>GEOG 530</td>
<td>Environmental Hazards</td>
</tr>
<tr>
<td>GEOG 535</td>
<td>Hazards Analysis and Planning</td>
</tr>
<tr>
<td>GEOG 545</td>
<td>Synoptic Meteorology</td>
</tr>
<tr>
<td>GEOG 546</td>
<td>Applied Climatology</td>
</tr>
<tr>
<td>GEOG 547</td>
<td>Fluvial Geomorphology</td>
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<tr>
<td>GEOG 549</td>
<td>Water and Watersheds</td>
</tr>
<tr>
<td>GEOG 566</td>
<td>Social Aspects of Environmental Planning and Management</td>
</tr>
<tr>
<td>GEOG 567</td>
<td>Long-Term Environmental Change</td>
</tr>
<tr>
<td>GEOG 568</td>
<td>Human Dimensions of Global Environmental Change</td>
</tr>
<tr>
<td>GEOG 569</td>
<td>International Development and the Environment</td>
</tr>
<tr>
<td>GEOG 570</td>
<td>Geography of Public Land and Water Policy</td>
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<tr>
<td>GEOG 571</td>
<td>Microclimatology</td>
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<tr>
<td>GEOG 573</td>
<td>Climatic Change and Variability</td>
</tr>
<tr>
<td>GEOG 590</td>
<td>Beach-Dune Interactions</td>
</tr>
</tbody>
</table>

Total Credit Hours 24

1 GEOG 201 or GEOG 202 may be used if not used to satisfy Carolina Core or College Requirements.

**B.S. with Distinction in Geography (36 hours)**

Available to students majoring in Geography who wish to participate in significant research activities in their major field under the supervision of a faculty mentor.

**Prerequisite**

A minimum GPA of 3.50 in the major, and 3.30 cumulative, is required to apply for a BA or BS with Distinction in Geography.

**Requirements**

- An established thesis committee consisting of a tenure-track faculty member in Geography and at least one other tenure-track or research faculty member at the University of South Carolina.
- A written thesis demonstrating significant original work and approved by the thesis committee.
- A public presentation of the Senior Thesis research.
- Successful fulfillment of all requirements below with a minimum GPA of 3.50 in the major and 3.30 cumulative.
- General major requirements, plus 12 additional credit hours including:
  - A minimum of nine credit hours in GEOG 498, or any GEOG 500-level courses (9 hours)
  - GEOG 499

Note: South Carolina Honors College students satisfying the above requirements will graduate with “Honors from the South Carolina Honors College” and with “Distinction in Geography.”

**Major Map**

A major map is a layout of required courses in a given program of study, including critical courses and suggested course sequences to ensure a clear path to graduation.

Major maps are only a suggested or recommended sequence of courses required in a program of study. Please contact your academic advisor for assistance in the application of specific coursework to a program of study and course selection and planning for upcoming semesters.

**Geography, B.S. General Geography Concentration**

**Geography, B.S. Geographic Information Science Concentration**

**Geography, B.S. Physical/Environmental Geography Concentration**