

# GEOGRAPHY, B.S.

## Overall Requirements

- 120 credit hours, to include a minimum of 36 credits at or above the 300 course level
- 64-78 credits from the major plus electives, with 12-24 credit hours of electives in each concentration.
- A minimum of 27 credits in geography above the 100 level. Only grades of C- or higher in GES courses will count toward completion of the major and concentrations.

## Degree Program Requirements

Code	Title	Credit Hours
University Requirements ( <a href="https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies/">https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies/</a> )		
General Education Requirements (MAC) ( <a href="https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies/general-education-program/#generaleducationcorerequirementstext">https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies/general-education-program/#generaleducationcorerequirementstext</a> )		
College of Arts and Sciences Additional Requirements (CIC) ( <a href="https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirementstext">https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirementstext</a> )		

## Major Requirements

Select one of the concentrations as detailed following the major requirements.

- Earth Science
- Geographic Information Science (GIS)
- Urban Planning

## Electives

Electives sufficient to complete the 120 credit hours required for the degree.

### Earth Science Concentration Requirements

A central theme of geography is human interaction with the earth's physical environment. This concentration permits students to apply the basic scientific principles of physical geography, cartography, and natural resource analysis to the problem of ensuring a high quality of life through maintenance of the natural processes that support human existence. This concentration also provides training to enhance the employment opportunities of students with a strong interest in environmental assessment and resource evaluation.

Only grades of C- or higher in GES courses will count toward completion of the concentration.

Code	Title	Credit Hours
<b>Earth Science Foundational Courses</b>		<b>27</b>
<i>Required</i>		
GES 103 & 103L	Introduction to Earth Science and Earth Science Laboratory <sup>†</sup>	
CHE 111 & CHE 112	General Chemistry I and General Chemistry I Laboratory <sup>†</sup>	

CHE 114 & CHE 115	General Chemistry II and General Chemistry II Laboratory	
MAT 191	Calculus I <sup>††</sup>	
<i>Plus, select three from the following:</i>		
BIO 111 & 111L	Principles of Biology I and Principles of Biology I Laboratory <sup>†††</sup>	
BIO 112 & 112L	Principles of Biology II and Principles of Biology II Laboratory	
PHY 211	General Physics I <sup>†††</sup>	
PHY 212	General Physics II	
<b>Geographic Techniques</b>		<b>7</b>
<i>Required</i>		
GES 121 & 121L	Introduction to Geographic Information Science and Intro to Geographic Information Science Laboratory	
<i>Plus, select one of the following:</i>		
GES 322	Research Methods in Spatial Science	
GES 325	Introduction to Spatial Analysis	
GES 357	Principles of Cartography	
GES 358	Geographic Information Systems	
GES 359	Remote Sensing of Environment	
<b>Human Geography</b>		<b>3</b>
Select one of the following:		
GES 105	Introduction to Human Geography	
GES 301	Cities of the World	
GES 302	Urban Geography: Sustainable Land Use	
GES 303	World Population Problems	
GES 304	Sustainable Transport and Mobility	
GES 306	World Economic Geography	
GES 315	The Geography of World Affairs	
<b>Regional Geography</b>		<b>3</b>
Select one of the following:		
GES 102	The Historical Geography of the Western World	
GES 104	World Regional Geography	
GES 313	Natural Resource Regions of North America	
GES 333	Geography of Europe	
GES 340	Geography of East Asia	
GES 344	Geography of the United States and Canada	
GES 451	Seminar in Regional Geography	
GES 491	Current Topics in Regional Geography	
<b>Earth Science Requirement</b>		<b>26</b>
<i>Required</i>		
GES 314 & 314L	Physical Geography: Landscape Processes and Physical Geography Laboratory	
GES 319 & 319L	Weather and Climate and Climatology Laboratory	
GES 418	Biogeography	
<i>Select a minimum of five (5) courses from the following: *</i>		
GES 205	Environmental Change: Its Nature and Impact	
GES 305	Environmental Hazards Assessment	
GES 312	Geomorphology of North America	
GES 325	Introduction to Spatial Analysis	
GES 328	The Water Planet	

GES 330	Elements of Hydrology
GES 358	Geographic Information Systems
GES 359	Remote Sensing of Environment
GES 419	Advanced Weather and Climate-Synoptic Climatology
GES 450	Applied Physical Geography

† Counts toward GEC GNS requirement.

†† Counts toward GEC GMT requirement.

††† Counts toward LEC GLS/GPS requirement.

\* Courses selected cannot have been taken as an Earth Science Foundational Course.

## Geographic Information Science Concentration Requirements

Students with this concentration will develop skills in using maps, geospatial computer programs, and remotely sensed images to answer geographic questions relevant to land use planning, urban development, geomorphic or biogeographic processes, or environmental impact assessment. A capstone course (GES 421), which includes a faculty-directed major project, is completed in the final semester.

Only grades of C- or higher in GES courses will count toward completion of the concentration.

Code	Title	Credit Hours
<b>Geographic Information Science Foundational Courses</b>		<b>15</b>
GES 103 & 103L	Introduction to Earth Science and Earth Science Laboratory †	
CHE 111 & CHE 112	General Chemistry I and General Chemistry I Laboratory †	
PHY 211	General Physics I ††	
MAT 191	Calculus I †††	
<b>Geographic Techniques</b>		<b>7</b>
GES 121 & 121L	Introduction to Geographic Information Science and Intro to Geographic Information Science Laboratory	
GES 322	Research Methods in Spatial Science	
<b>Earth Science</b>		<b>8</b>
GES 314 & 314L	Physical Geography: Landscape Processes and Physical Geography Laboratory	
GES 319 & 319L	Weather and Climate and Climatology Laboratory	
<b>Human Geography</b>		<b>3</b>
Select one of the following:		
GES 105	Introduction to Human Geography	
GES 301	Cities of the World	
GES 302	Urban Geography: Sustainable Land Use	
GES 303	World Population Problems	
GES 304	Sustainable Transport and Mobility	
GES 306	World Economic Geography	
GES 315	The Geography of World Affairs	
<b>Regional Geography</b>		<b>3</b>
Select one of the following:		
GES 102	The Historical Geography of the Western World	

GES 104	World Regional Geography
GES 313	Natural Resource Regions of North America
GES 333	Geography of Europe
GES 340	Geography of East Asia
GES 344	Geography of the United States and Canada
GES 451	Seminar in Regional Geography
GES 491	Current Topics in Regional Geography

## Geographic Information Science Requirements 27

1. Required	
CSC 120	Introduction to Computer Programming for Non-Majors
GES 325	Introduction to Spatial Analysis
GES 357	Principles of Cartography
GES 358	Geographic Information Systems
GES 359	Remote Sensing of Environment
GES 457	Advanced Cartography
GES 458	Advanced Geographic Information Systems
GES 459	Advanced Remote Sensing-Imaging
2. Required (Taken after completion of #1.)	
GES 421	Geographic Information Science (Taken after completion of #1)

† Counts toward GEC GNS requirement.

†† Counts toward LEC GLS/GPS requirement.

††† Counts toward GEC GMT requirement.

## Urban Planning Concentration Requirements

The inter-regional shift of people and jobs in the United States and elsewhere over the past decades coupled with the movement away from large central cities has increased the need for formal urban and regional planning. Planners are needed in the private sector as well as in state and local governments to provide the appropriate kinds of economic and community development that will ensure a high quality of life in both developed and developing countries. In a growth region like the Southeast, geographers with a planning background are in increasing demand.

Only grades of C- or higher in GES courses will count toward completion of the concentration.

Code	Title	Credit Hours
<b>Urban Planning Foundational Courses</b>		<b>10</b>
<i>Required</i>		
GES 103 & 103L	Introduction to Earth Science and Earth Science Laboratory †	
GES 105	Introduction to Human Geography ††	
<i>Select one of the following:</i>		
MAT 112	Contemporary Topics in Mathematics ††	
STA 108	Elementary Introduction to Probability and Statistics †††	
<b>Geographic Techniques</b>		<b>7</b>
GES 121 & 121L	Introduction to Geographic Information Science and Intro to Geographic Information Science Laboratory	
GES 357	Principles of Cartography	

**Earth Science 4**

Select one option of the following:

GES 314 Physical Geography: Landscape Processes  
& 314L and Physical Geography LaboratoryGES 319 Weather and Climate  
& 319L and Climatology Laboratory**Human Geography 3**

Select one of the following:

GES 303 World Population Problems

GES 306 World Economic Geography

GES 315 The Geography of World Affairs

**Regional Geography 3**

Select one of the following:

GES 102 The Historical Geography of the Western World

GES 104 World Regional Geography

GES 313 Natural Resource Regions of North America

GES 333 Geography of Europe

GES 340 Geography of East Asia

GES 344 Geography of the United States and Canada

GES 451 Seminar in Regional Geography

GES 491 Current Topics in Regional Geography

**Urban Planning Requirements 36***Required*

GES 301 Cities of the World

GES 302 Urban Geography: Sustainable Land Use

GES 304 Sustainable Transport and Mobility

GES 358 Geographic Information Systems

GES 402 Sustainable Urban Planning in an Entrepreneurial  
Environment

GES 432 Geography of Livable Cities

*Select six courses from the following:\**

GES 303 World Population Problems

GES 306 World Economic Geography

GES 320 Tourism Planning and Development

GES 322 Research Methods in Spatial Science

GES 325 Introduction to Spatial Analysis

GES 331 Sustainable Tourism and Transportation

GES 344 Geography of the United States and Canada

GES 357 Principles of Cartography

GES 359 Remote Sensing of Environment

GES 433 Regional Economic Development

† Counts toward GEC GNS requirement.

†† Counts toward GEC GSB requirement.

††† Counts toward GEC GMT requirement.

\* Courses selected cannot have been taken as an Urban Planning  
Foundational Course.