

# ENVIRONMENTAL GEOSCIENCES | BA

Geography is the science of place, space, and environment. Each place on earth is distinguished by a unique mix of natural resources, cultural practices, and socioeconomic and political systems. Geographers study what makes each place unique, as well as the connections and interactions between places.

## About this Program

- **College:** Liberal Arts and Sciences (<http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/>)
- **Degrees:** Bachelor of Arts ([http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY\\_BA\\_BS/GPY\\_BA/](http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY_BA_BS/GPY_BA/)) | Bachelor of Science ([http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY\\_BA\\_BS/GPY\\_BS/](http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY_BA_BS/GPY_BS/))
- **Specializations:** Environmental Geosciences (BA) (p. 1) | Geographical Science and Sustainability (BA) ([http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY\\_BA\\_BS/GPY\\_BS03/](http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY_BA_BS/GPY_BS03/)) | Medical Geography in Global Health (BA) ([http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY\\_BA\\_BS/GPY\\_BA02/](http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY_BA_BS/GPY_BA02/)) | Medical Geography in Global Health (BS) ([http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY\\_BA\\_BS/GPY\\_BS01/](http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY_BA_BS/GPY_BS01/))
- **Credits for Degree:** 120
- **Contact:** Email ([liangmao@ufl.edu](mailto:liangmao@ufl.edu))

*To graduate with this major, students must complete all university, college, and major requirements.*

## Department Information

The Geography Department offers a range of topics in contemporary geography and geospatial science, rich and lively cultural and learning environments, BA and BS undergraduate degrees, MA, M.S., and PhD degrees, as well as the largest Medical Geography program in the United States.

**Website** (<https://geog.ufl.edu/>)

## CONTACT

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## Curriculum

- Combination Degrees
- GeoAI and Geographic Analysis Minor
- Geographic Artificial Intelligence and Big Data Certificate
- Geography
- Geography Minor
- Geography Minor UF Online
- Geography UF Online
- Geospatial Information Analysis Certificate
- Medical Geography Certificate
- Medical Geography in Global Health Minor
- Meteorology and Climatology Certificate
- Meteorology Minor

The Bachelor of Arts in Environmental Geosciences is a joint program between the Department of Geography and the Department of Geological Sciences and is intended for students interested in land and water aspects of the environment. The degree focuses on human impacts, water and mineral resource exploitation and management, disasters, environmental planning, earth science education, or environmental law.

## Requirements for the Major

The Bachelor of Arts in environmental geosciences requires a minimum of 41 credits of coursework, plus 3 credits of Statistics. Students must earn a minimum grade of C in all coursework for the major.

## Required Major Coursework

Code	Title	Credits
<b>Geography BA Environmental Geosciences Core Courses</b>		
GEO 2200 & 2200L	Dynamic Planet Earth and Dynamic Planet Earth Laboratory	4
Select one GeoAI course:		3
GIS 2002	The Digital Earth	
GIS 2114	The World & Big Data	
GEO 4170	Communicating Science in the Geosciences	3
GEO 4930	Senior Seminar	1
GIS 3043	Foundations of Geographic Information Systems	4
GLY 2010C	Physical Geology	4
GLY 2100C or GLY 3105C	Historical Geology Evolution of Earth and Life	4
GLY 3202C	Earth Materials	3
<b>Geography BA Environmental Geosciences Major Electives</b>		
Select three Geography electives: <sup>1</sup>		9-12
GEO 3162C	Introduction to Quantitative Analysis for Geographers	
GEO 3250	Climatology	
GEO 3280	Principles of Geographic Hydrology	
GEO 3341	Extreme Floods	
GEO 3352	The Human Footprint on Landscape	
GEO 3372	Conservation of Resources	
GEO 4034	Weather, Climate, and Society	
GEO 4167C	Intermediate Quantitative Analysis for Geographers	
GEO 4281	River Forms and Processes	
GEO 4285	Water, Risk, and Extreme Events	
GEO 4300	Environmental Biogeography	
GIS 3001C	Geovisualization and Map Design	
GIS 4021C	Aerial Photo Interpretation	
GIS 4037	Digital Image Processing	
GIS 4102C	GIS Programming	
GIS 4113	Introduction to Spatial Networks	
GIS 4115C	Spatial Surface Modeling and Geostatistics	
GIS 4324	GIS Analysis of Hazard Vulnerability	
MET 3503	Weather and Forecasting	
MET 4224C	Machine Learning in Meteorology	
MET 4532	Hurricanes	
MET 4560	Atmospheric Teleconnections	
MET 4750	Spatial Analysis of Atmospheric Data using GIS	
Select two Geology electives:		6-8
GLY 3074	Oceans and Global Climate Change	
GLY 3163	Geology American National Parks	
GLY 3603C	Paleontology	
GLY 3882C	Hydrogeology and Human Affairs	
GLY 4155C	Geology of Florida	
GLY 4310C	Igneous and Metamorphic Petrology	
GLY 4400C	Structural Geology and Tectonics	
GLY 4552C	Sedimentary Geology	
GLY 4734	Coastal Morphology and Processes	
<b>Total Credits</b>		<b>41-46</b>

The same course may **not** be used to satisfy requirements for more than one bulleted group.

<sup>1</sup> Other geography courses may be counted at the discretion of the undergraduate coordinator.

## Related Coursework

- STA 2023

## Critical Tracking

Critical Tracking records each student's progress in courses that are required for progress toward each major. Please note the critical-tracking requirements below on a per-semester basis.

**For degree requirements outside of the major, refer to CLAS Degree Requirements: Structure of a CLAS Degree.**

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites (<https://cpm.flvc.org/advance-search/>) may be used for transfer students.

## Semester 1

- 2.0 UF GPA required

## Semester 2

- Complete 1 critical-tracking course with laboratory (GEO 2200/GEO 2200L or GLY 2010C) with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

## Semester 3

- Complete the other critical-tracking course with laboratory (GEO 2200/GEO 2200L or GLY 2010C) with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

## Semester 4

- Complete STA 2023 and maintain a 2.5 critical-tracking GPA
- 2.0 UF GPA required

## Semester 5

- Complete 2 additional GLY or GEO courses with a 2.5 critical-tracking GPA. Recommended GLY courses include GLY 2100C or GLY 3105C. Recommended GEO courses include GEO 3250, GEO 3280, GEO 2315, GEO 3341, GEO 3352, GEO 3372, or MET 3503.
- 2.0 UF GPA required

## Semester 6

- Complete 1 geography 3000/4000 elective course.
- 2.0 UF GPA required

## Semester 7

- Complete 1 additional geography and 1 additional geology elective courses
- 2.0 UF GPA required

## Semester 8

- Complete all remaining geography and geology 3000/4000 courses
- 2.0 UF GPA required

## Model Semester Plan

Students are expected to complete the Writing, Civic Literacy, summer enrollment, and Quest requirements while in the process of taking the courses below. Students are also expected to complete the general education international (GE-N) requirements concurrently with another general education requirement (typically, GE-C, H, or S) as part of the CLAS Basic Distribution requirements. One of the two general education mathematics courses must be a pure math course.

College of Liberal Arts and Sciences allows students additional flexibility in its Distribution Requirements. Students may count a maximum of 6 credits TOTAL from the CLAS Distribution course lists towards Humanities, Social and Behavioral Sciences, or Biological and Physical Sciences, with no more than 3 credits of Humanities, 3 credits of Social and Behavioral Sciences, or 6 credits of Biological or Physical Sciences.

The full list of major-specific requirements for this major can be found on the Overview tab. College of Liberal Arts and Sciences degree requirements can be found on the College's degree requirements page (<https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/#degree requirementstext>).

Geology courses may count towards the 3000-level or above electives outside of the major.

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

*This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.*

Course	Title	Credits
<b>Semester One</b>		
Quest 1		3
State Core Gen Ed Composition ( <a href="http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext">http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext</a> ); Writing Requirement		3
Gen Ed Mathematics, pure math		3
CLAS Foreign Language Proficiency Requirement <sup>1</sup>		4-5
Elective		3
<b>Credits</b>		<b>16-17</b>
<b>Semester Two</b>		
Select one:		4
GEO 2200 & 2200L	Dynamic Planet Earth and Dynamic Planet Earth Laboratory ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences; Natural Science Laboratory) <sup>2</sup>	
GLY 2010C	Physical Geology ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences; Natural Science Laboratory) <sup>2</sup>	
State Core Gen Ed Biological Sciences ( <a href="http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext">http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext</a> )		3
State Core Gen Ed Social and Behavioral Sciences ( <a href="http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext">http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext</a> )		3
CLAS Foreign Language Proficiency Requirement <sup>1</sup>		3-5
<b>Credits</b>		<b>13-15</b>
<b>Semester Three</b>		
Quest 2		3
Select one (not taken in semester 2):		4
GEO 2200 & 2200L	Dynamic Planet Earth and Dynamic Planet Earth Laboratory ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences; Natural Science Laboratory) <sup>1</sup>	
GLY 2010C	Physical Geology ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences; Natural Science Laboratory) <sup>1</sup>	
State Core Gen Ed Humanities ( <a href="http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext">http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext</a> )		3
Gen Ed Composition; Writing Requirement		3
Elective (or CLAS Foreign Language Proficiency Requirement if 4-3-3 option) <sup>1</sup>		3
<b>Credits</b>		<b>16</b>
<b>Semester Four</b>		
STA 2023	Introduction to Statistics 1 ( <b>Critical Tracking</b> ; State Core Gen Ed Mathematics) <sup>1</sup>	3
GeoAI fundamental course (select one):		3
GIS 2002	The Digital Earth	
GIS 2114	The World & Big Data	
Gen Ed Biological Sciences		3
Gen Ed Humanities		3
Gen Ed Social and Behavioral Sciences		3
<b>Credits</b>		<b>15</b>
<b>Semester Five</b>		
GIS 3043	Foundations of Geographic Information Systems ( <b>Critical Tracking</b> )	4
Select one:		4
GLY 2100C	Historical Geology ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences)	
GLY 3105C	Evolution of Earth and Life ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences)	
Electives (3000 level or above, not in major)		6
<b>Credits</b>		<b>14</b>
<b>Semester Six</b>		
GLY 3202C	Earth Materials	3
Geography elective ( <b>Critical Tracking</b> ; from list)		3-4
Electives (3000 level or above, not in major)		9
<b>Credits</b>		<b>15-16</b>
<b>Semester Seven</b>		
GEO 4170	Communicating Science in the Geosciences	3
Geography elective ( <b>Critical Tracking</b> )		3-4

Geology elective (Critical Tracking)		3-4
Elective (3000 level or above, not in major)		3
Elective		3
	Credits	15-17
Semester Eight		
GEO 4930	Senior Seminar (Critical Tracking)	1
Geography elective (Critical Tracking)		3-4
Geology elective (Critical Tracking)		3-4
Electives		9
	Credits	16-18
	Total Credits	120

<sup>1</sup> CLAS Foreign Language Proficiency Requirement (<https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/#degreerequirementstext>)

<sup>2</sup> Degree Requirements (<https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/#degreerequirementstext>)

*Electives to reach the 120-credit minimum will vary depending on whether students select minimum or maximum credit course options.*

## Academic Learning Compact

A major in Geography enables students to know the earth's physical environment, to learn social, cultural, and economic concepts from spatial and regional perspectives, and to understand the relationship between environment and society. Students will learn how geographic techniques, skills, and concepts are applied in the subfields of geography. Computer-based lab assignments teach students how to analyze geographic information and to apply an interpretation of data toward problem solving or modeling. They will be able to interpret and to effectively communicate information spatially, graphically, and/or with statistics.

The Bachelor of Arts in Geography enables students to learn how geographic techniques, skills, and concepts are applied in various subfields of geography. The Bachelor of Science enables students to learn basic concepts in sciences related to the earth and its atmosphere.

## Before Graduating Students Must

- Complete a capstone exam in GEO 4930, as developed by geography faculty.
- Complete a capstone portfolio in GEO 4930, evaluated by geography faculty.
- Complete requirements for the baccalaureate degree, as determined by faculty.

## Students in the Major Will Learn to

### Student Learning Outcomes | SLOs

#### Content

1. Identify and describe the physical and human characteristics of Earth and its regions, the essentials of human#environment interactions, and the techniques of geographic science.

#### Critical Thinking

2. Analyze geographic information and apply interpretation of data toward problem solving or modeling.

#### Communication

3. Interpret and effectively communicate information spatially, graphically, and/or with statistics.

## Curriculum Map

*I = Introduced; R = Reinforced; A = Assessed*

Courses	SLO 1	SLO 2	SLO 3
GEA 2000-4000 level Regional Geography	R		
GEO 2000 level Human Geography	I		
GEO 2200	I		
GEO 2200L	R		
GEO 3162C	I	I	R
GEO 4930	R, A	A	A
GIS 3043 and GIS 4001C	R	R	R
STA 2023			I

<b>BA Only</b> Plus 15 additional credits in the department	R	R
<b>BS Only</b> Plus 12 additional credits in the department and 22 credits outside the department with CHM, GLY, MET, PHY, SWS prefixes	R	R

## Assessment Types

- Capstone exam
  - Portfolio
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