

# GEOGRAPHICAL SCIENCE AND SUSTAINABILITY | 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) ([http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY\\_BA\\_BS/GPY\\_BA01/](http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GPY_BA_BS/GPY_BA01/)) | Geographical Science and Sustainability (BA) (p. 1) | 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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 Map (<http://campusmap.ufl.edu/#/index/0267>)

## Curriculum

- Combination Degrees
- 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

## Overview

The Bachelor of Arts in Geography in Geographical Science and Sustainability is a joint program (specialization) co-offered by Geography and Sustainability Studies, and is intended for students interested in using geospatial technologies to advance sustainability. Students in this specialization learn modern geospatial technologies, such as geographical information system, remote sensing and spatial analysis, and use them to maintain ecological and environmental health, create economic welfare, and pursue social justice in a changing world.

## Coursework for the major

This specialization under the Bachelor of Arts in Geography requires a major coursework of 46 credits from the geography program and sustainability studies program, and 3 additional credits of STA2023. Students must earn a minimum grade of C in all coursework for the major.

## Required Courses

Code	Title	Credits
STA 2023	Introduction to Statistics 1	3
<b>Geography Fundamentals-13 credits</b>		
GEO 2200 & 2200L	Dynamic Planet Earth and Dynamic Planet Earth Laboratory	4
GEO 2006	Natural Hazards Geography	3
GEO 2351	Geographical Sciences and Sustainability	3
Select one GeoAI course:		3
GIS 2002	The Digital Earth	
GIS 2114	The World & Big Data	
<b>Sustainability Fundamentals-12 credits</b>		
IDS 2154	Facets of Sustainability	3
Select one:		3
AMH 2631	History of Sustainability	
CLA 2521	Classical Antiquity and Sustainability	
REL 2071	Sustainability and Religion	
BSC 2862	Global Change Ecology and Sustainability	3
Select one:		3
ANT 2402	Anthropology of Sustainability	
POS 2032	Politics of Sustainability	
ECO 2310	Economics of Sustainability	
PSY 3626	Psychology of Sustainability	
<b>Geospatial Technique courses-8 credits; Select two:</b>		<b>8</b>
GIS 3001C	Geovisualization and Map Design	
GIS 3043	Foundations of Geographic Information Systems	
GIS 4037	Digital Image Processing	
<b>Communication skill course</b>		<b>3</b>
GEO 4170	Communicating Science in the Geosciences	
<b>Capstone course</b>		<b>1</b>
GEO 4930	Senior Seminar	
<b>Geography electives for Sustainability-9 credits; Select three:</b>		<b>9</b>
Other geography courses can be counted under the discretion of the undergraduate coordinator.		
GEO 2242	Extreme Weather	
GEO 3250	Climatology	
GEO 3280	Principles of Geographic Hydrology	
GEO 3315	Hungry Planet: Global Geographies of Food	
GEO 3334	Managing for a Changing Climate	
GEO 3341	Extreme Floods	
GEO 3352	The Human Footprint on Landscape	
GEO 3372	Conservation of Resources	
GEO 3452	Introduction to Medical Geography	
GEO 3454	Peoples and Plagues	
GEO 3930	Special Topics in Geography (Sea Level Variability & Change)	
GEO 3930	Special Topics in Geography (Weather, Climate, & Society)	
GEO 3930	Special Topics in Geography (Extreme Droughts)	
GEO 4300	Environmental Biogeography	
GIS 4021C	Aerial Photo Interpretation	
GIS 4102C	GIS Programming	
GIS 4324	GIS Analysis of Hazard Vulnerability	
<b>Total Credits</b>		<b>49</b>

## 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 either one geography fundamental course or one sustainability fundamental course (recommended GEO 2200 & GEO 2200L or IDS 2154) with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

## SEMESTER 3

- Complete the other fundamental course that is not taken in Semester 2 (recommended GEO 2200 & GEO 2200L or IDS 2154) with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

## SEMESTER 4

- Complete one additional geography fundamental course (recommended GEO 2351), and STA 2023 with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

## SEMESTER 5

- Complete one additional geography fundamental course, one additional sustainability fundamental course with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

## SEMESTER 6

- Complete all geography and sustainability fundamental courses
- Complete a GIS 3000/4000 technique course.
- 2.0 UF GPA required

## SEMESTER 7

- Complete 1 additional geography technique course (GEO or GIS 4000 level)
- 2.0 UF GPA required

## SEMESTER 8

- Complete all remaining geography (GEO, GIS, or MET) 3000/4000 required courses
- 2.0 UF GPA required

### Model Semester Plan

Students are expected to complete the Writing Requirement while in the process of taking the courses below. Students are also expected to complete the General Education International (GE-N) and Diversity (GE-D) requirements concurrently with another General Education requirement (typically, GE-C, H, or S).

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>		
IDS 2154	Facets of Sustainability ( <b>Critical Tracking</b> )	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
State Core Gen Ed Mathematics; pure math		3-4
Foreign language		4-5
<b>Credits</b>		<b>13-15</b>
<b>Semester Two</b>		
Quest 1 (Gen Ed Humanities)		3
GEO 2200 & 2200L	Dynamic Planet Earth and Dynamic Planet Earth Laboratory ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences)	4

Foreign language		3-5
Sustainability Fundamentals course		3
<b>Credits</b>		<b>13-15</b>
<b>Semester Three</b>		
STA 2023	Introduction to Statistics 1	3
Geography fundamental course ( <b>Critical Tracking</b> )		3
Sustainability Fundamentals course ( <b>Critical Tracking</b> )		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
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
<b>Credits</b>		<b>15</b>
<b>Semester Four</b>		
Geography fundamental course ( <b>Critical Tracking</b> ) <sup>1</sup>		3
Sustainability Fundamentals course		3
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
Quest 2 (Gen Ed Social and Behavioral Science or Gen Ed Biological Science)		3
Gen Ed Biological or Social and Behavioral Science (Option not taken as Quest 2 above)		3
<b>Credits</b>		<b>15</b>
<b>Semester Five</b>		
Geography fundamental course ( <b>Critical Tracking</b> ) <sup>1</sup>		3
Gen Ed Composition; Writing Requirement		3
Geography elective		3
Elective or foreign language if 4-3-3 option		4
Elective (3000 level or above, not in major)		3
<b>Credits</b>		<b>16</b>
<b>Semester Six</b>		
Geospatial technique course ( <b>Critical Tracking</b> )		4
Gen Ed Biological Sciences or elective		3
Gen Ed Humanities (if needed) or elective		3
Geography elective		3
Elective (3000 level or above, not in major)		3
<b>Credits</b>		<b>16</b>
<b>Semester Seven</b>		
GEO 4170	Communicating Science in the Geosciences	3
Geography Elective ( <b>Critical Tracking</b> )		3
Electives (3000 level or above, not in major)		6
Electives		4
<b>Credits</b>		<b>16</b>
<b>Semester Eight</b>		
GEO 4930	Senior Seminar	1
Geography elective		3
Electives (3000 level or above, not in major)		6
Electives		6
<b>Credits</b>		<b>16</b>
<b>Total Credits</b>		<b>120</b>

<sup>1</sup> Students must choose either GIS 2002 or GIS 2114 to fulfill all Geography Fundamental courses.

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

## Electives

### Geography Electives for Sustainability Specialization

Other geography courses can be counted under the discretion of the undergraduate coordinator

Code	Title	Credits
GEO 2242	Extreme Weather	3
GEO 3250	Climatology	3
GEO 3280	Principles of Geographic Hydrology	4
GEO 3315	Hungry Planet: Global Geographies of Food	3

GEO 3341	Extreme Floods	3
GEO 3352	The Human Footprint on Landscape	3
GEO 3372	Conservation of Resources	3
GEO 3452	Introduction to Medical Geography	3
GEO 3454	Peoples and Plagues	3
GEO 3930	Special Topics in Geography (Weather, Climate, & Society)	3
GEO 3930	Special Topics in Geography (Extreme Droughts)	3
GEO 4300	Environmental Biogeography	3
GIS 4021C	Aerial Photo Interpretation	3
GIS 4102C	GIS Programming	3
GIS 4324	GIS Analysis of Hazard Vulnerability	3
GEO 4938	Selected Topics in Geography (Population GIS)	3
GEO 3930	Special Topics in Geography (Weather, Climate, & Society)	3
GEO 3930	Special Topics in Geography (Sea Level Variability and Change)	3

## Recommended Outside Major Electives

18 credits of upper division (3000 and 4000-level) electives outside the major are required. These courses would strongly complement the BA track in geographical sciences for sustainability in both the Geography and Sustainability Studies majors.

Code	Title	Credits
AEB 3450	Introduction to Natural Resource and Environmental Economics	3
AGG 3501	Environment, Food and Society	3
AGR 4212	Alternative Cropping Systems	3
ALS 3133	Agricultural and Environmental Quality	3
BSC 3307C	Climate Change Biology	4
DCP 3200	Methods of Inquiry for Sustainability and the Built Environment	3
DCP 3210	Sustainable Solutions for the Built Environment	3
DCP 3220	Social and Cultural Sustainability and the Built Environment	3
ECP 3302	Environmental Economics and Resource Policy	4
EES 3008	Energy and Environment	3
EES 4050	Environmental Planning and Design	3
FAS 4270	Marine Ecological Processes	3
FNR 4660	Natural Resource Policy and Economics	3
FOR 3202	Society and Natural Resources	3
FOR 4664	Sustainable Ecotourism Development	3
SWS 3022	Introduction to Soils in the Environment	3
SWS 4245	Water Resource Sustainability	3
WIS 3401	Wildlife Ecology and Management	3

### 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	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	R

## Assessment Types

- Capstone exam
  - Portfolio
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