

GEOPHYSICS | BS

A Geology degree provides an understanding of issues associated with the physical earth and skills which are in demand in today's job market. The Geology graduate will have a detailed understanding of climate change, sustainability of the Earth's resources, and the close interplay between human activity and the environment.

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/GLY_BA_BS/GLY_BA/) | Bachelor of Science (http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GLY_BA_BS/GLY_BS/)
- **Specializations:** Environmental Geosciences (BA) (http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/GLY_BA_BS/GLY_BA01/) | Geophysics (BS) (p. 1)
- **Credits for Degree:** 120
- **More Info**

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

Department Information

The Department of Geological Sciences aims to provide a comprehensive understanding of Earth and Planetary sciences along with their formative and evolutionary processes. Geological Sciences trains students to excel in the geoscience workforce and create sustainable solutions to societal needs.

Website (<http://geology.ufl.edu/>)

CONTACT

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Map (<http://campusmap.ufl.edu/#/index/0100>)

Curriculum

- Combination Degrees
- Geological Sciences Certificate
- Geology
- Geology Minor
- Geology UF Online

Techniques such as environmental assessment, geological hazard assessment, field-based techniques, and geographic information systems (GIS) are used to evaluate the impact of humans on the physical earth and hydrologic environment. The practical and flexible curriculum, small class sizes, computer-based learning, strong faculty, and coursework in several areas of General Education make this major appealing to students who want skills linked to employment or preparation for entry to professional schools (e.g., law, medicine, business).

Geology majors learn about the Earth's physical environment including climate, non-renewable geological resources, renewable geological resources, geological hazards and remediation as well as basic skills required by geologists. These skills and the geological perspective open doors to employment in government agencies and private firms that deal with water management, mining and petroleum exploration, climate change, the environment, and education.

Note that some required courses include a field component, but alternatives to off-campus field work are available and special needs or concerns may be accommodated by speaking with a Geology advisor.

Coursework for the Major

The Geology major has five different options: the Bachelor of Arts, the Bachelor of Arts in Environmental Geosciences (a joint program with the Department of Geography), the Bachelor of Science in Geology, the Bachelor of Science in Geophysics, and the Bachelor of Science in Environmental Sciences. Students who are uncertain which program best suits them should consult the Department of Geology's undergraduate coordinator for information and guidance on curriculum planning.

Degrees and Specializations

Bachelor of Arts

The most flexible degree, and best suited for students interested in careers in education or environmental policy making. The degree also allows students flexibility to pursue advanced degrees in environmental law or environmental medicine.

Bachelor of Arts | Environmental Geosciences

Co-offered by the Department of Geography, this specialization is for students interested in land and water aspects of the environment. It can be tailored to focus on water and mineral exploration and management, geological hazards, environmental planning, resource sustainability, or earth science education.

Bachelor of Science | Geology

This degree is designed for students planning to take the professional geology (PG) licensure exam or to continue to graduate study in Geology. It emphasizes a core understanding of petrology, structural geology, field methodology and paleontology, and it requires significant introductory coursework in calculus, general chemistry, and physics.

Bachelor of Science | Geophysics

This specialization is designed for students planning to take the professional geology (PG) licensure exam or to continue to graduate study in Geophysics or related fields. It emphasizes a core understanding of earth materials, structural geology, field methodology, quantitative and computational methods, and it requires significant coursework in mathematics, computational methods, general chemistry, and physics.

Bachelor of Science | Environmental Geosciences

This specialization is designed for students planning to take the professional geology (PG) licensure exam or to continue to graduate study in Environmental Geology/Hydrogeology. It emphasizes a core understanding of earth materials, structural geology, field methodology, geobiology, geochemistry, and it requires significant introductory coursework in calculus, general chemistry, and biology.

Relevant Minors and Certificates

UFTeach Program

There is a severe shortage of qualified secondary science teachers in Florida and nationwide. Students interested in becoming part of this high-demand profession should see the undergraduate coordinator about the UFTeach program. UFTeach students can complete the UFTeach minor in science teaching along with their BA or BS in Geology and have the coursework and preparation for professional teacher certification in Florida when they graduate.

More Info (<http://education.ufl.edu/uf-teach/>)

Research

Students in geology who wish to graduate with high or highest honors will be required to conduct an independent research project under the direction of a faculty member. Students are also afforded the opportunity to conduct research within the department's laboratories regardless of their honors status.

Required Coursework

Code	Title	Credits
Introductory Coursework		
<i>Select one General introductory course:</i>		3-4
GLY 2010C	Physical Geology	
GLY 2030C	Environmental and Engineering Geology	
Any 1000-2000 level GLY, OCE, or ESC course		
<i>Select one Historical geology course:</i>		4
GLY 2100C	Historical Geology	
GLY 3105C	Evolution of Earth and Life	
<i>Geology BS Core Coursework</i>		
GLY 3202C	Earth Materials	3
GLY 4400C	Structural Geology and Tectonics	4
GLY 4450	Geophysics	3
GLY 4750L	Geological Field Methods	2
GLY 4930	Special Topics in Geology	1
GLY Directed Electives, 4000+ ^{2,3}		11
GLY Elective, 3000+ ¹		3-4
<i>Geology BS Capstone Coursework</i>		

GLY 4790	Geology Summer Field Camp ⁴	4
Total Credits		38-40

¹ Excluding GLY 3105C

² Choose from advisor-approved geophysics courses

³ Internships may be used to fulfill this requirement

⁴ Approved Geophysics Field Camp or Alternative can be substituted

Related Coursework | 27 Credits

Code	Title	Credits
Chemistry Requirements		
CHM 2045 & 2045L	General Chemistry 1 and General Chemistry Laboratory	4
Mathematics Requirements		
MAC 2311	Analytic Geometry and Calculus 1	4
MAC 2312	Analytic Geometry and Calculus 2	4
MAC 2313	Analytic Geometry and Calculus 3	4
MAS 3114	Computational Linear Algebra	3
Two semesters of physics and laboratory		
PHY 2048 & 2048L	Physics with Calculus 1 and Laboratory for PHY 2048	4
PHY 2049 & 2049L	Physics with Calculus 2 and Laboratory for PHY 2049	4
Total Credits		27

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 (<https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/#degree requirementstext>).

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

- 2.0 UF GPA required

Semester 3

- Complete one general introductory course (GLY 2010C, GLY 2030C, or any 1000-2000 level GLY, OCE, or ESC course). GLY 2010C is recommended as it is a prerequisite for many upper-level courses.
- Complete MAC 2311
- 2.0 UF GPA required

Semester 4

- Complete historical geology course (GLY 2100C or GLY 3105C) or GLY 3000-level geology course.
- Complete one related coursework requirement (CHM 2045/CHM 2045L, MAC 2312, or PHY 2048/PHY 2048L and associated lab)
- 2.5 Critical Tracking GPA
- 2.0 UF GPA required

Semester 5

- Complete GLY 3202C
- Complete one additional related coursework requirement (CHM 2045/CHM 2045L, MAC 2313, or PHY 2048/PHY 2048L and associated lab)

- 2.5 Critical Tracking GPA
- 2.0 UF GPA required

Semester 6

- Complete GLY 4400C
- 2.0 UF GPA required

Semester 7

- Complete GLY 4750L and GLY 4552C
- 2.0 UF GPA required

Semester 8

- Complete any remaining GLY required courses and electives required for GLY 4790 (Capstone)

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>).

MAC 2312, MAC 2313, PHY 2049, and PHY 2049L may count towards 3000 level or above electives outside of the major if taken.

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
Semester One		
Quest 1 (Gen Ed Humanities)		3
MAC 2311	Analytic Geometry and Calculus 1 (Critical Tracking ; State Core Gen Ed Mathematics)	4
State Core Gen Ed Composition (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext); Writing Requirement		3
Foreign language		4-5
	Credits	14-15
Semester Two		
CHM 2045 & 2045L	General Chemistry 1 and General Chemistry Laboratory (Critical Tracking ; State Core Gen Ed Physical Sciences)	4
Select one:		4
MAC 2312	Analytic Geometry and Calculus 2 (Gen Ed Mathematics)	
PHY 2048 & 2048L	Physics with Calculus 1 and Laboratory for PHY 2048 (Gen Ed Physical Sciences)	
State Core Gen Ed Social and Behavioral Sciences (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext)		3
Foreign language		3-5
	Credits	14-16
Semester Three		
Quest 2		3
GLY 2010C	Physical Geology (Critical Tracking ; Gen Ed Physical Sciences)	4
MAC 2313	Analytic Geometry and Calculus 3 (Critical Tracking ; Gen Ed Mathematics)	4
PHY 2049 & 2049L	Physics with Calculus 2 and Laboratory for PHY 2049 (Gen Ed Physical Sciences)	4
	Credits	15

Semester Four

Select one:		4
GLY 2100C	Historical Geology (Critical Tracking ; Gen Ed Physical Sciences)	
GLY 3105C	Evolution of Earth and Life (Critical Tracking)	
State Core Gen Ed Humanities (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext)		3
Gen Ed Biological Sciences		3
Gen Ed Mathematics (or elective if Calculus 2 taken in semester two)		3
Gen Ed Social and Behavioral Sciences		3
Credits		16

Semester Five

GLY 3202	Earth Materials (Critical Tracking)	3
GLY 4750L	Geological Field Methods (Critical Tracking)	2
Electives (3000 level or above, not in major)		6
Elective		3
Credits		14

Semester Six

GLY 4400C	Structural Geology and Tectonics (Critical Tracking)	4
GLY 4559	Intro to Geophysics	3
Directed Elective GLY 3000+		3
Gen Ed Biological Sciences		3
Elective (3000 level or above, not in major)		3
Credits		16

Summer After Semester Six

GLY 4790	Geology Summer Field Camp (Critical Tracking)	4
Credits		4

Semester Seven

GLY4550	Intro to Geophysics	3
Gen Ed Composition		3
Directed Elective GLY 3000+		2
Elective (3000 level or above, not in major)		3
Elective		1
Credits		12

Semester Eight

Directed Electives GLY 3000+		6
GLY 4905	Individual Work (or elective)	3
Electives (3000 level or above, not in major)		6
Credits		15
Total Credits		120