

GEOLOGY, BS

for the degree of Bachelor of Science Major in Geology (Specialized Curriculum)

The **Specialized Curriculum in Geology (BS)** is designed for students who plan to pursue graduate study in geology or geophysics or who wish to work professionally in the environmental field upon obtaining the bachelor's degree. It consists of geology, geophysics, and environmental geology areas, and offers more training in geology and related science than is required of students who make geology their major in the Sciences and Letters Curriculum. Students must choose one of the following: Geology, Geophysics, or Environmental Geology.

Undergraduate Degree Programs in Geology

For the Degree of Bachelor of Science in Liberal Arts and Sciences

Students select one of the following in consultation with an adviser:

- Major in Geology (Sciences and Letters) (<http://catalog.illinois.edu/undergraduate/las/geology-bslas/>)
- Major in Geology (Sciences and Letters), Earth and Environmental Sciences Concentration (<http://catalog.illinois.edu/undergraduate/las/geology-bslas/earth-environmental-sciences/>)
- Major in Geology (Sciences and Letters), Earth Science Teaching Concentration (<http://catalog.illinois.edu/undergraduate/las/geology-bslas/earth-science-teaching/>)

For the Degree of Bachelor of Science in Geology

Students select one of the following in consultation with an adviser:

- Major in Geology (Specialized Curriculum) (p. 1)
- Major in Geology (Specialized Curriculum), Environmental Geology Concentration (<http://catalog.illinois.edu/undergraduate/las/geology-bs/environmental-geology/>)
- Major in Geology (Specialized Curriculum), Geophysics Concentration (<http://catalog.illinois.edu/undergraduate/las/geology-bs/geophysics/>)

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Specialized Curriculum

Graduation requires a grade point average of at least 2.0 overall and a 2.0 average in all required science and technical courses (geology, physics, mathematics, chemistry, and technical requirements listed below). The Department of Geology will supply upon request a Guide for Geology Undergraduates giving more information about the curriculum.

Departmental Distinction:

Students majoring in Geology can earn distinction, high distinction, and highest distinction upon graduation. The requirements for these awards are:

Distinction:

A minimum cumulative grade point average of 3.3, and have also completed an approved independent study project, approved senior thesis, or approved capstone.

High Distinction:

A minimum cumulative grade point average of 3.5, and have also completed an approved independent study project, approved senior thesis, or approved capstone.

Highest Distinction:

A minimum cumulative grade point average of 3.7, and also completed an approved senior thesis or approved research capstone.

General education: Students must complete the Campus General Education (<https://courses.illinois.edu/gened/DEFAULT/DEFAULT/>) requirements including the campus general education language requirement.

Minimum hours required for graduation: 126 hours.

Code	Title	Hours
Chemistry: Select one group of courses:		
CHEM 102	General Chemistry I	8-9
CHEM 103	General Chemistry Lab I	
CHEM 104	General Chemistry II	
CHEM 105	General Chemistry Lab II	
or		
CHEM 202	Accelerated Chemistry I	8-9
CHEM 203	Accelerated Chemistry Lab I	
CHEM 204	Accelerated Chemistry II	
CHEM 205	Accelerated Chemistry Lab II	
(45 hours of Geology Courses: Students transferring into the geology concentration from another science or engineering program may substitute up to 8 hours of 300-or 400-level science or engineering credits for 8 hours of 300-or 400-level geology courses with departmental approval.)		
GEOL 107	Physical Geology (Students who decide to follow the curriculum after first taking GEOL 100 should enroll in GEOL 208. GEOL 100 will be accepted as a substitute for GEOL 107, but students should be aware that these courses are not intended for science majors.)	4
GEOL 208	History of the Earth System	4
GEOL 143	History of Life	3
GEOL 411	Structural Geol and Tectonics	4
GEOL 417	Geol Field Methods, Western US (GEOL 417 is a 6-hour summer field course taught off campus.)	6
GEOL 432	Mineralogy and Mineral Optics	4
GEOL 436	Petrology and Petrography	4
GEOL 440	Sedimentology and Stratigraphy	4
Select one of the following:		3-4
GEOL 450	Investigating the Earth's Interior	3
or GEOL 452	Introduction to Geophysics	
GEOL 460	Geochemistry	3
6 additional hours 300- or 400-level geology		6

Mathematics	13-15
MATH 220	Calculus
or MATH 221	Calculus I
MATH 231	Calculus II
MATH 225	Introductory Matrix Theory
or MATH 415	Applied Linear Algebra
MATH 241	Calculus III
Physics. Select one group of courses:	8-10
PHYS 211	University Physics: Mechanics
& PHYS 212	and University Physics: Elec & Mag
or	
PHYS 101	College Physics: Mech & Heat
& PHYS 102	and College Physics: E&M & Modern
Additional Technical Requirements	3
Select at least 3 hours from the following:	
IB 103	Introduction to Plant Biology
IB 104	Animal Biology
CS 101	Intro Computing: Engrg & Sci
CS 125	Introduction to Computer Science
CPSC 440	Applied Statistical Methods I
STAT 400	Statistics and Probability I
MATH 285	Intro Differential Equations
MATH 441	Differential Equations
PHYS 213	Univ Physics: Thermal Physics
PHYS 214	Univ Physics: Quantum Physics

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Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a third level of a language other than English. See the corresponding section on the Degree and General Education Requirements page (<http://catalog.illinois.edu/general-information/degree-general-education-requirements/>).

First Year	
First Semester	Hours
Free Elective course	1
Composition I or General Education course	4
CHEM 102 or 202	3
CHEM 103 or 203	2
Language Other Than English (3rd level)	4

Free Elective course	1
	15

Total Hours 15

First Year

Second Semester	Hours
GEOL 208	4
General Education course or Composition I	3
CHEM 104 or 204	3
CHEM 105 or 205	1
GEOL 107	4
Free Elective course	2
	17

Total Hours 17

Second Year

First Semester	Hours
MATH 220 or 221	5
GEOL 143	3
General Education course	3
General Education course	3
Free Elective course	3
	17

Total Hours 17

Second Year

Second Semester	Hours
MATH 231	3
GEOL 411	4
GEOL 432	4
PHYS 211 or 101	4
	15

Total Hours 15

Third Year

First Semester	Hours
PHYS 212 or 102	5
GEOL 440	4
MATH 241	4
Free Elective course	2
	15

Total Hours 15

Third Year

Second Semester	Hours
GEOL 417	6
GEOL 436	4
MATH 225 or 415	4
General Education course	3
	17

Total Hours 17

Fourth Year

First Semester	Hours
GEOL 450 or 452	4
Geology 300-400 level course	3
General Education course	3
General Education course	3
Free Elective course	2
	15

Total Hours 15**Fourth Year**

Second Semester	Hours
GEOL 460	3
Geology 300-400 level course	3
Technical Geology course	3
General Education course	3
General Education course	3
	15

Total Hours 15**Total Hours: 126**

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1. Students will develop cross-disciplinary skills of observation, data collection, and spatial display of data (e.g., map making) related to geological materials, features, and processes.
2. Students will develop an understanding of the physical, chemical and mathematical theories fundamental to earth processes through rigorous coursework and research.
3. Students will develop and apply critical thinking skills to synthesize principles learned in the classroom, and data collected in the laboratory and in the field in order to evaluate hypotheses and solve geological problems.
4. Students will demonstrate the ability to communicate effectively scientific data, interpretations, and hypotheses through written and oral methods.
5. Students will hone and apply interpersonal skills in a professional setting through group work, research activities, and field studies.

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Department of Earth Science & Environmental Change (<https://esec.illinois.edu/>)

Earth Science & Environmental Change website (<https://www.esec.illinois.edu/undergraduate/>)

Earth Science & Environmental Change email (esec@illinois.edu)

Earth Science & Environmental Change faculty (<https://esec.illinois.edu/directory/faculty/>)

Advising

Geology major advising (<https://esec.illinois.edu/academics/undergraduate-programs/undergraduate-advising/>)

College of Liberal Arts & Sciences

LAS College website (<https://las.illinois.edu/>)

Admissions

Liberal Arts & Sciences Admissions & Requirements (<http://catalog.illinois.edu/schools/las/academic-units/>)

University of Illinois Urbana-Champaign Undergrad Admissions (<https://www.admissions.illinois.edu/>)