

## GEOLOGY

<b>Courses required for the first year: none</b>
<b>Courses recommended for the first year:</b> <ul style="list-style-type: none"> <li>• Gateway GEOL course (GEOL-101, GEOL-105, GEOL-112, or GEOL-123)</li> <li>• MATH-140 (pre-calculus or equivalent course)</li> <li>• CHEM-131 or CHEM-235</li> </ul>
<b>Contact: Dr. Jeffrey Strasser (chair, advisor)</b> <b>309-794-7218</b> <a href="mailto:JeffreyStrasser@augustana.edu">mailto:JeffreyStrasser@augustana.edu</a>

### The Major in GEOLOGY

MAJOR IN GEOLOGY. 40 credits: One gateway GEOL course (GEOL-101, GEOL-105, GEOL-112, or GEOL-123); three core courses (GEOL-201, GEOL-205, GEOL-240), three senior inquiry courses (GEOL-450, GEOL-451, and GEOL-452); two courses from GEOL-309, GEOL-350, and GEOL-360; two additional elective GEOL courses (including GEOG-306 or ENVR-300); and one required supporting science course (CHEM-131 or CHEM-235).

Upper-level geoscience courses assume math skills equivalent to those covered in a high school or college pre-calculus course. Students planning to pursue graduate studies or careers in the geosciences are strongly recommended to take MATH-160 (Calculus) as well as additional courses in physics, mathematics, chemistry, geography, and/or biology.

### Required Courses

Course Number	Course Name	Learning Perspective	Prerequisites	Credits
GEOL-101, 105, 112, or 123	One Gateway Course (Physical & Environmental Geology, Geology in the Rockies, Dinosaurs, Bonaire)	PN	none	4
GEOL-201	History of Life		GEOL Gateway Course or BIOL-360	4
GEOL-205	Mineralogy (ideally sophomore year)		GEOL Gateway Course, CHEM-131 or CHEM-235	4
GEOL-240	Structural Geol. and Tectonics		GEOL Gateway Course	4
2 courses from: GEOL-309, GEOL350, GEOL-360	Geomorph/Paleoclimatology Sedimentology/Stratigraphy Petrology		GEOL Gateway Course GEOL-201, GEOL-205	4 4 4
2 elective courses (8 credits) from: GEOL-*** GEOG-306 ENVR-300	Any other GEOL courses Soil Science Climate Change and Sustainable Energy		Varies	4 4 4
GEOL-450	SI: Research Methods (junior year)			2
GEOL-451	Senior Inquiry 2		GEOL-450	2
GEOL-452	Senior Inquiry 3		GEOL-451	0-2

### Required Supporting Course

Course Number	Course Name	Learning Perspective	Prerequisites	Credits
CHEM-131 or CHEM-235	General Chemistry I or Intro. Inorganic Chemistry	PN PN		4

## The Minor in GEOLOGY

MINOR IN GEOLOGY. 17 credits (4 courses + 1 credit), including one gateway course (GEOL-101, 102, 105, 112, or 123), GEOL-399 (1-credit), and 12 additional credits (or 3 courses) from GEOL courses at or above the 200-level. GEOG-306 and ENVR-300 may be substituted for GEOL courses. GEOL-399, coordinated with a faculty member, requires completion of a research paper that addresses some aspect of geology and relates it to the student's primary major, and it must incorporate an additional reflective component demonstrating an understanding of the connectivity between subject areas. This paper could conceivably be an extension of the Senior Inquiry effort within the student's primary major.

### Required Courses

Course Number	Course Name	Learning Perspective	Prerequisites	Credits
GEOL-101, 102, 105, 112, or 123	One Gateway Course (Physical & Environmental Geology, Geology in the Rockies, Dinosaurs, Bonaire)	PN	none	4
3 additional courses (12 credits) of GEOL-***, GEOG-306, or ENVR-300				12
GEOL-399	Directed Study			1

### Program Overview

*The Geology Department of Augustana College aims to provide a comprehensive, interdisciplinary undergraduate education that emphasizes critical, collaborative and creative thinking, problem solving, reading, and communication, all in the context of geosciences. Upon graduation, geology majors should be well prepared for entry-level jobs in the geosciences, environmental sciences and services, education, law, business and government, and they should have the necessary knowledge and skills to succeed in geoscience graduate programs.*

Geology is the science of materials of the Earth and the processes of Earth formation and evolution. Geology is a critical subject to study as part of a broad environmental studies curriculum, as it encompasses natural resources, surficial materials, and Earth systems. Geologic records provide us with an understanding of climates and cycles. The subject includes sub-disciplines, such as the study of environmental problems and remedial solutions, geologic hazards and hazard mitigation, life and evolution as preserved in the rock record, soil, groundwater and surface water quality and availability, and mineral resources upon which our society is based. Geology is inherently interdisciplinary, incorporating fundamental principles of physics, chemistry, biology and mathematics to understand the geological systems of the Earth and solve complex issues facing society. Many geology students augment their major with additional courses, minors, or majors in related or science departments, math, or data analytics.

Geology majors are well-prepared for entry-level jobs in environmental consulting or the energy industry. About half of the students completing the geology major pursue graduate school in geosciences or environmental sciences, and many graduates pursue careers in geoscience, environmental science, environmental consulting, education or business. Each student should discuss her/his career or academic goals with the faculty advisors in order to choose appropriate elective courses. Check out Wikipedia's long list of "geoprofessions," and take a look at what recent Augustana geology graduates are doing: <https://www.augustana.edu/academics/areas-of-study/geology> Students interested in majoring in geology should schedule a meeting with Dr. Strasser. All students interested in the geosciences and environmental sciences are encouraged to attend weekly meetings of the Udden Geology Club to learn more about the discipline and career opportunities. Students majoring in geology are encouraged to enroll in our J-term field courses to Bonaire (2022, 2024) and the Mojave Desert (2023, 2025).