# Bachelor of Science in Geology

The B.S. in Geology, General Geology Concentration is recommended for students planning to continue to graduate school or to other careers in the geosciences. This Concentration has more flexibility to allow the student to tailor electives to pursue a particular interest.

The B.S. in Geology, Environmental Geology Concentration is recommended for students planning to become professional geologists in the environmental, geotechnical, government service, petroleum, or mining areas, and to prepare for Professional Licensure.

Geology majors must earn a grade of "C-" (1.7) or better in all required geology courses for those courses to satisfy the degree requirements for a B.S. degree in Geology. Students may not earn credit for both concentrations.

**Requirements (72-79 units)**

**Total units required for graduation: 120**

## Requirements for the B.S. in Geology

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|---|---|---|
| **Lower-division requirements (26-27)** | | |
| CHEM 2100 | General Chemistry I | 4 |
| CHEM 2100L | General Chemistry I Laboratory | 1 |
| CHEM 2200 | General Chemistry II | 4 |
| CHEM 2200L | General Chemistry II Laboratory | 1 |
| Choose one of the following (fulfills GE category B4): | | 3-4 |
| MATH 1601 | Modeling with Calculus | |
| MATH 2210 | Calculus I | |
| Choose one of the following: | | 4 |
| PHYS 2000 | Introduction to Physics I | |
| PHYS 2500 | General Physics I | |
| Choose one of the following: | | 1 |
| PHYS 2000L | Introduction to Physics I Lab | |
| PHYS 2500L | General Physics I Lab | |
| Choose one of the following (fulfills GE category B1): | | 3 |
| GEOL 1000 | Introductory Geology | |
| GEOL 1020 | Plate Tectonics: Key to Understanding Earthquakes, Volcanoes and Tsunami | |
| GEOL 1060 | Environmental Geology and Geological Hazards | |
| Choose one of the following (Laboratory Activity associated with GE B1): | | 1 |
| GEOL 1000L | Introductory Geology Laboratory | |
| GEOL 1060L | Environmental Geology and Geological Hazards Laboratory | |
| GEOL 2000 | Interpreting Earth Systems History: Stories from an Ancient Planet | 4 |
| **Upper-division requirements (36)** | | |
| GEOL 3100 | Introduction to Geologic Mapping | 3 |
| GEOL 3200 | Mineralogy | 5 |
| GEOL 3220 | Introduction to Geochemistry | 4 |
| GEOL 3240 | Igneous and Metamorphic Petrology | 4 |
| GEOL 3300 | Sedimentary Geology: Principles and Applications | 4 |
| GEOL 3600 | Structural Geology | 4 |
| Choose five units from the following: | | 5 |
| GEOL 3902 | Advanced Field Geology | |
| GEOL 3903 | Advanced Field Geology | |
| GEOL 3904 | Advanced Field Geology | |
| GEOL 3906 | Advanced Field Geology | |
| GEOL 5280 | Digital Mapping and GIS for Scientists | |
| GEOL 3990 | Geological Research Design | 3 |
| GEOL 4000 | Undergraduate Geological Research | 2 |
| GEOL 4900 | Senior Seminar | 2 |
| **Concentration (7-15)** | | |
| Students must satisfy the requirements of one of the concentrations listed below: | | 7-15 |
| **Total Units** | | **69-78** |

## Concentrations (7-15 Units)

### General Geology Concentration (7 units)

(Program Code: GEOL)

| | | |
|---|---|---|
| A minimum of 7 units chosen from the following list after consultation with a faculty advisor. No more than 3 units may be taken from supervision courses. At least 3 units of elective must be from Geology courses. | | 7 |
| Any 3100-level or above Geology course, not previously used for the degree | | |
| GEOL 2500 | Geology of California | |
| GEOG 2250 | Introduction to Geographic Information Systems and Cartography | |
| GEOG 3730 | Geo-Spatial Analysis | |
| GEOG 4400 | Geomorphology | |
| GEOG 4870 | Environmental GIS | |
| Up to 6 units of 2000-level or above Math, Biology, Chemistry or Physics courses, not previously used for the degree. | | |
| **Total Units** | | **7** |

### Environmental Geology Concentration (13-15 units)

(Program Code: ENVG)

| | | |
|---|---|---|
| GEOL 3700 | Groundwater Hydrology | 3 |
| GEOL 4100 | Engineering Geology | 4 |
| Choose a minimum of two courses, one from Group A, and one from either Group A or Group B: | | 6-8 |
| Group A: | | |
| GEOL 2500 | Geology of California | |
| GEOG 4400 | Geomorphology | |
| GEOL 5600 | Earth Resources | |
| Group B: | | |
| GEOG 2250 | Introduction to Geographic Information Systems and Cartography | |
| GEOL 3750 | Field Methods in Hydrology | |

| | | |
|---|---|---|
| | GEOL 5220 | Neotectonics and Seismic Hazard Analysis |
| | GEOL 5400 | Environmental Hydrology |
| | GEOL 5620 | Site Investigation, Siting, and Case Histories in Engineering Geology |
| **Total Units** | | **13-15** |