Bachelor of Science in Geology

Requirements (112 units)

Total units required for graduation: 180

Requirements for the B.S. in Geology

Lower-division requirements (44)

BIOL 100  Topics in Biology  5
or BIOL 200  Biology of the Cell

CHEM 215  General Chemistry I: Atomic Structure and Chemical Bonding  6

CHEM 216  General Chemistry II: Principles of Chemical Reactions  6

GEOL 101  Introductory Geology  5

GEOL 250  Historical Geology  5

MATH 211  Basic Concepts of Calculus  4

MATH 212  Calculus II  4

A minimum of 9 units chosen from Group A or B below:  9
(students are strongly encouraged to complete the sequence)

Group A:

PHYS 121  Basic Concepts of Physics I

PHYS 122  Basic Concepts of Physics II

PHYS 123  Basic Concepts of Physics III

Group B:

PHYS 221  General Physics I

PHYS 222  General Physics II

PHYS 223  General Physics III

Upper-division requirements (50)

GEOL 301  Introduction to Geologic Mapping  4

GEOL 320  Mineralogy and Crystallography  5

GEOL 321  Optical Mineralogy  3

GEOL 322  Introduction to Geochemistry  4

GEOL 325  Igneous and Metamorphic Petrology  5

GEOL 330  Sedimentary Geology I: Principles and Applications  5

GEOL 340  Sedimentary Geology II: Principles and Applications  5

GEOL 360  Structural Geology  5

GEOL 390  Field Camp  8

or

GEOL 391B-F  Advanced Geological Mapping

GEOL 398  Geological Research Methods and Design  1

GEOL 399  Undergraduate Geological Research  3

GEOL 590  Senior Seminar  2

Option (18)

Complete one of the following options  18

Total Units  112

General Geology Option (18 units) (Program Code: GEOL)

A minimum of 18 units chosen from the following list after consultation with a faculty advisor. No more than four units may be taken from supervision courses.

GEOG 202  Introduction to Geographic Information Systems and Cartography

GEOG 308  Advanced Geographic Information Systems

GEOG 480  Geomorphology

GEOL 307A-B  Service Learning in the Earth Sciences

GEOL 310  Regional Field Geology

GEOL 312  Geology of California

GEOL 350  Introductory Paleontology

GEOL 370  Tectonics

GEOL 375  Groundwater Hydrology

GEOL 391B-E  Advanced Geologic Mapping

GEOL 395A-D  Directed Studies

GEOL 540  Advanced Topics in Geology

GEOL 545A-B  Laboratory for Advanced Topics in Geology

GEOL 550  Earth Resources

GEOL 551  Neotectonics and Seismic Hazard Analysis

GEOL 552  Volcanology and Volcanic Hazard Assessment

GEOL 553  Advanced Structural Geology

GEOL 554  Geochemical Thermodynamics

GEOL 555  Site Investigation Methodologies in Engineering Geology

GEOL 556  Case Histories in Engineering Geology Practice

GEOL 575B-D  Internship in Geology

GEOL 591  Digital Mapping and GIS for Scientists

GEOL 595A-E  Independent Study

GEOL 597B-D  Senior Honors Research

MATH 262  Applied Statistics

Total Units  18

Environmental Geology Option (18 units) (Program Code: ENVG)

GEOL 375  Groundwater Hydrology  4

GEOL 376  Field Methods in Hydrology  4

GEOL 430  Engineering Geology  5

A minimum of five units chosen, after consultation with a faculty advisor, from (no more than two units from supervision courses):

CHEM 206  Fundamentals of Chemistry II: Organic Chemistry

GEOG 202  Introduction to Geographic Information Systems and Cartography

GEOG 470  Hydrology and Water Resources

GEOG 480  Geomorphology

GEOL 312  Geology of California

GEOL 540  Advanced Topics in Geology

GEOL 545A-B  Laboratory for Advanced Topics in Geology

GEOL 550  Earth Resources

GEOL 551  Neotectonics and Seismic Hazard Analysis

GEOL 552  Volcanology and Volcanic Hazard Assessment
<table>
<thead>
<tr>
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<tbody>
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Total Units: 18