THE MAJOR: Geologists play an important role in society. They apply their skills and knowledge to solve complex problems related to how humans interact with natural systems and hazards as well as the exploration for water, petroleum and mineral resources. They share their unique knowledge of Earth systems through teaching and public outreach on topics such as understanding earthquake hazards and climate change. Geology majors gain scientific knowledge of past and present planetary processes and laboratory and field skills that prepare them for post-graduate study and professional careers in diverse fields such as oceanography, paleontology, geophysics, geochemistry, hydrogeology, engineering geology, and teaching.

Option I: Geology prepares students for a full range of technical careers in geoscience and for advanced studies in graduate school. It can be specialized toward different branches of geosciences by the appropriate choices of elective courses.

CAREERS: Careers in geosciences are rewarding in every sense. Jobs in geosciences are in high demand and pay well. A wide variety of job opportunities in both private industry and government service are available to geology graduates. Engineering geologist evaluate sites for homes, commercial buildings, highways, and dams; environmental geologists conduct environmental impact studies and evaluate the pollution distribution and remediation of contaminated sites; hydrogeologists evaluate the development and quality control of ground water resources; and economic geologists explore for earth resources such as oil, gas, coal, precious and semi-precious metals, and uranium. Agencies in all levels of government-city, county, state, and federal-employ geologists for regulatory, inspection, and monitoring activities. Additionally, a degree in geology is excellent background for preparing to teach physical science and earth science at the secondary school level and, for those with an M.S. degree, at the community college level. Finally, the B.S. degree serves as excellent preparation for entry to graduate programs. CSUN geology majors have been accepted by many of the nation’s best graduate programs in the geosciences.

STUDENT LEARNING OUTCOMES OF THE UNDERGRADUATE PROGRAMS:
Undergraduate majors will receive instruction of sufficient breadth, depth, and currency to prepare them for successful appointment to entry-level professional work or graduate school. At the time of graduation, they will be able to:

1) demonstrate conceptual understanding of different earth materials and the processes that shape them throughout their history;

2) identify geologic problems and develop testable hypotheses that would aid in their solution both independently and in collaboration with others;

3) demonstrate skills in standard data-gathering and data-analysis methods in both lab and field settings;

4) present polished summaries, both written and oral, of their geological discoveries.
**OPTION I: GEOLOGY**

1. **LOWER-DIVISION REQUIRED COURSES (38-39 UNITS)**
   - **GEOL 101/102 Geology of Planet Earth and Lab (3/1)**
   - **GEOL 110/112 Earth and Life through Time and Lab (3/1)**
   - **GEOL 207/L Mineralogy and Lab (3/1)**
   - **GEOL 235 Introduction to Field Methods (2)**
   - **CHEM 101/L General Chemistry I and Lab 4/1)**
   - **CHEM 102/L General Chemistry II and Lab (4/1)**
   - **MATH 255A* Calculus for the Life Sciences I (3)**
   - **MATH 255B* Calculus for the Life Sciences II (3)**
   - **OR**
     - **MATH 140 Introductory Statistics (4)**
     - **PHYS 100A/L** General Physics I and Lab (3/1)
     - **PHYS 100B/L** General Physics II and Lab (3/1)

   * or MATH 150A and MATH 150B
   ** or PHYS 225, 220A/L; 226, 220BL

2. **UPPER-DIVISION REQUIRED COURSES (28 UNITS)**
   - **GEOL 307/L Petrology and Lab (3/1)**
   - **GEOL 310/L Structural Geology and Lab (3/1)**
   - **GEOL 341/L Sedimentary Geology and Lab (3/1)**
   - **GEOL 351/L Fundamentals of Paleontology and Lab (3/1)**
   - **GEOL 430A, B Summer Field Geology (2, 2)**
   - **GEOL 443/L Principles of Stratigraphy and Lab (3/1)**
   - **GEOL 464/L Applied Geophysics and Lab (3/1)**

3. **UPPER-DIVISION ELECTIVES (9 UNITS)**
   These should be selected from any upper-division geology courses exclusive of 300, 301. Other electives might qualify, but require approval of the departmental undergraduate advisor. *Note: Students in the Honors Program must take GEOL 497 (1 unit) and 498 (3 units) and 5 units of elective.*

<table>
<thead>
<tr>
<th>Total Units in the Major, Option 1</th>
<th>75-76</th>
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<tr>
<td>General Education - Basic Mathematics and the entire section of Natural Sciences are met by required courses in the major.</td>
<td>36</td>
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<td>Additional Units</td>
<td>8-9</td>
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<tr>
<td>Total Units Required for the B.S. Degree, Option 1</td>
<td>120</td>
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