Bachelor of Arts Degree in Geology

Summary
Credit hours in major = 49-53
Credit hours in general education/college requirements = 43-45
Elective hours = 22-28
Total = 120
Full time program duration = 4 years

1000-level Geology Courses (courses; 7 credit hours):
If the student joins the program fall semester, the requirement is completed over two semesters. The following courses should be taken:
GEOL1001C: Geology and Paleontology (3 credits; fall) and GEOL1002C: Earth Surface Processes and Environmental Issues (3 credits; spring)

If the student joins the program spring semester, the requirement is completed in one semester. The following courses should be taken:
GEOL1002C: Earth Surface Processes and Environmental Issues (3 credits; spring) and GEOL1004: Historical Geology (3 credits; spring)

Other introductory courses may be used to fulfill this requirement upon approval.

2000-level Geology Courses (4 courses; 12 credit hours):
Note: The student must achieve at least a C- in each 1000-, 2000-, and 3000-level course to fulfill the requirements.
GEOL2005C: Geomorphology (fall)
GEOL2008C: Mineralogy (fall)
GEOL2004C: Sedimentology, Stratigraphy & Earth History (spring)
GEOL2012: The Earth System (spring)

3000-level Geology Courses (choose 3 courses; 9 credit hours):
The student must choose three from the following:
GEOL3000C: Paleontology & Geobiology (fall) GEOL3004C: Structural Geology (spring)
GEOL3002: Geochemistry (fall) GEOL3005C: Hydrogeology (fall)
GEOL3003C: Petrology (spring) GEOL3006: Climate Change Through Time (spring)

The student is expected to finish 2000-level courses before starting 3000-level courses, unless permission has been granted by the Academic Director to take 2000-level and 3000-level courses concurrently.

4000-level Geology Courses (3 courses; 9 credit hours): The student is required to take one course from the list below. The remaining two courses will serve as electives and include additional 4000-level lecture courses, including field trips (GEOL4021C, GEOL4022C, GEOL4023, GEOL4033C), seminars, workshops, curatorial courses, or one additional 3000-level course.

GEOL4001C: Paleontology I (Invertebrate)
GEOL4002C: Paleontology II (Vertebrate)
GEOL4003: Sedimentology
GEOL4004: Glacial Geology
GEOL4007: Marine Paleoenvironments & Paleocology (1/2 semester)
GEOL4008C: Clay Mineralogy
GEOL4010C: Igneous Processes and Petrogenesis
GEOL4011C: Quaternary Geology
GEOL4012C: Modeling Landscapes
GEOL4013: Organic Geochemistry
GEOL4018C: Stratigraphy and Facies Models (1/2 semester)
GEOL4024: Geohydrology and Introduction to Ground-Water Modeling
GEOL4025C: Thermodynamics
GEOL4028: Stable Isotope Biogeochemistry
GEOL4029: Stable Isotope Ecology
GEOL4031C: Quaternary Geochronology
GEOL4032: Quaternary Limnology
GEOL4036: Holocene Environmental & Cultural History
GEOL4037: Earth’s Early Biosphere
GEOL4038: Analytical methods & Scripting R
GEOL4041C: Changing Landscapes in the Himalaya
GEOL4044: Basin Dynamics
GEOL4048C: Zooarchaeology
GEOL4049C: Raman Spectroscopy for the Geosciences
GEOL4050C: Teaching Geosciences
GEOL4053C-GEOL4054C: Optical Mineralogy – Thin Section Petrography (presented as two half-semester courses)
GEOL4056C: Ecology and Paleoecology of the Canary Islands

Recently created lecture courses may not be on this list. Contact the Academic Director to see if a particular course qualifies.

Capstone Requirement (minimum 3 credit hours):
The student may participate in a 3-6 credit hour field camp or one departmental upper-level field course (GEOL4021C, GEOL4022C, GEOL4023, GEOL4033C). A field camp must be approved by the Undergraduate Director. Under special circumstances a student may substitute an internship, faculty-advised research project, or other arrangements for partial or full Capstone fulfillment upon approval by the Capstone Advisory Committee.

Chemistry/Biology/Physics requirement (9-10 credit hours). Must achieve at least a C- in each course. This requirement is to completed by the end of the second year in the major, or by the time 18 hours of geology courses have been acquired:
CHEM1040, 1040L: General Chemistry I & lab (required)
and
CHEM1041, 1041L: General Chemistry II & lab or
BIOL1081, 1081L: Biology I & lab: Molecules, Cells, and the Foundation of Life or
PHYS1051, 1051L: General Physics I & lab (Algebra-based) or
PHYS2001, 2001L: College Physics I & lab (Calculus-based)

These chemistry and physics courses have specific math course or placement test prerequisites.
Quantitative Reasoning requirement (6-8 credit hours). Must achieve at least a C- in each course. This requirement is to be completed by the end of the second year in the major, or by the time 18 hours of geology courses have been acquired:
MATH1044: Applied Calculus I or MATH1061: Calculus I
and
MATH1045: Applied Calculus II or MATH1062: Calculus II or STAT1034: Elementary Statistics I

The MATH courses have specific math course or placement test prerequisites.

Basic curricular progression showing the order for taking courses and their required prerequisites.

<table>
<thead>
<tr>
<th>Term</th>
<th>1000-level (Foundations + 1 additional)</th>
<th>2000-level (all required)</th>
<th>3000-level (choose at least 3 courses)</th>
<th>4000-level (choose at least 3 courses*)</th>
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<tbody>
<tr>
<td><strong>Fall</strong></td>
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<tr>
<td>Fall semester start:</td>
<td>GEOL1001C and GEOL1003L</td>
<td>GEOL2008C <strong>Mineralogy</strong> Requires completion of the introductory requirement.</td>
<td>GEOL3000C <strong>Paleontology and Geobiology</strong> Requires 2004C and 2012</td>
<td>Choose three 4000-level courses</td>
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<td>GEOL2005C <strong>Geomorphology</strong> Requires completion of the introductory requirement.</td>
<td>GEOL3002 <strong>Geochemistry</strong> Requires CHEM, 2008C, and 2012</td>
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<td>GEOL3005C <strong>Hydrogeology</strong> Requires CHEM, 2005C, 2012</td>
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<td><strong>Spring</strong></td>
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<td>Fall semester start continued:</td>
<td>GEOL1002C</td>
<td>GEOL2004C <strong>Sedimentary Geology and Earth History</strong> Requires completion of the introductory requirement.</td>
<td>GEOL3003C <strong>Petrology</strong> Requires CHEM, 2004C, 2008C</td>
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<td>GEOL2012 <strong>The Earth System</strong> Requires completion of the introductory requirement.</td>
<td>GEOL3004C <strong>Structural Geology</strong> Requires 2004C, 2005C, 2008C</td>
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<td>GEOL3006 <strong>Climate Through Time</strong> Requires 2012</td>
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<td><em>PHYS/BIOL completed by the end of this semester</em></td>
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*Some 4000-level courses may have 3000-level courses as prerequisites.

Be sure to check with your College advisor to discuss College-specific degree requirements.