GEOLGY & GEOLOGICAL OCEANOGRAPHY
College of the Environment & Life Sciences (CELS)

UC Advisor: Dr. Anne I. Veeger, veeger@uri.edu, 874-2187
Credits: 120

The Major: This is the major for understanding the science of our Earth and its oceans. All of the world’s major environmental problems—clean water shortages, global warming, land use, soil depletion, pollution, storm remediation, and the availability of key natural and energy resources—find their scientific roots, and for many, their ultimate solutions, within the geological sciences. Geologists deal with environmental issues such as ground-water resources and shoreline development, geohazard issues such as volcanic eruptions and earthquakes, economic issues such as the exploration for and production of energy and mineral resources, and basic research into the origin and evolution of the Earth and other planets. Geology is both an outdoor and laboratory science, with opportunity to concentrate on either or both.

The B.S. in Geology and Geological Oceanography has two options: (1) a Geology option and (2) a Geological Oceanography option. It is designed for students with an interest in earth, environmental, or oceanographic science careers or affiliated fields such as environmental law and earth/environmental science education. The two options allow students to take specialty courses focusing on a range of geoscience topics such as environmental geology/hydrogeology, sedimentology/stratigraphy/paleontology, coastal geology/oceanography, geochemistry/petrology, or geophysics/tectonics. Supporting elective courses are chosen from Geosciences, Natural Resources Science, Environmental Economics, and Oceanography.

Career Options: Geoscientists are employed by three major segments of the economy: private enterprise, government (federal, state, and local), and academia (junior and senior high school and college level). Many opportunities currently exist with private companies in aspects of environmental protection and management. Recently, the petroleum industry has once again begun to hire a significant number of geologists. There is great demand at present for both B.S. and M.S. graduates, and job prospects should remain extraordinarily good over the coming years, particularly for graduates interested in energy and natural resources. Salaries, particularly in the energy industry, are among the highest for B.S. and M.S. graduates. Government jobs are available at the local, state and federal level. Local governments (environmental coordinators) employ B.S. graduates, while state governments employ at both the B.S. and M.S. level. Federal government jobs are available at the B.S., M.S. and Ph.D. level with the U.S. Geological Survey, and other agencies within the Departments of Interior, Energy, Agriculture, and Commerce. The best prospects in the public sector at present are at the state level in environmental-protection fields. B.S. and M.S. graduates are employed in lab and field staff positions by all major research-oriented universities. There is a shortage of qualified earth-science teachers at the secondary level; prospects are good for qualified B.S. graduates and better for those with M.S. degrees.

Transfer out of UC: Must have completed at least 24 credits, minimum GPA of 2.00, and received permission from the UC major advisor.

The following is an example of the typical course schedule for the first 4 semesters for a student majoring in Geology & Geological Oceanography. These are recommended course selections for GEO majors in University College; some classes are not offered every semester. It is essential to plan ahead and consult with your major advisor to allow yourself time to enroll in the classes you wish to take.

<table>
<thead>
<tr>
<th>Semester I (Fall)</th>
<th>Semester II (Spring)</th>
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<tbody>
<tr>
<td>URI 101 Freshman at URI</td>
<td>GEO 210 Landforms-Origin &amp; Evol. 4</td>
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<tr>
<td>GEO 103 Understanding Earth</td>
<td>CHM 112, 114 General Chemistry I 4</td>
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<tr>
<td>CHM 101, 102 General Chemistry I</td>
<td>MTH 111 Precalculus (if needed) 3</td>
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<tr>
<td>NRS 100 Nat. Res. Conservation</td>
<td>General Ed. WRT or COM 3</td>
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<tr>
<td>General Ed. WRT or COM</td>
<td>General Ed. or EEC 105 Intro. Res. Econ. 3</td>
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Total credits: 15

Total credits: 14-17

*For more information about the major contact the Geosciences University College advisor listed above.*
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<tr>
<th>Semester III (Fall)</th>
<th>Semester IV (Spring)</th>
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<tbody>
<tr>
<td>GEO 204 Prob. Solv. in Earth Hist.</td>
<td>GEO 320 Earth Materials</td>
</tr>
<tr>
<td>PHY 111, 185 General Physics I 4</td>
<td>PHY 112, 114 General Physics II 4</td>
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<tr>
<td>or 203, 173</td>
<td>or 204, 274</td>
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<tr>
<td>MTH 131 Calculus I (or MTH 141) 3-4</td>
<td>MTH 132 Calculus II (or MTH 142) 3-4</td>
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<tr>
<td>General Ed. (Cat. S, A, L, or F) 3</td>
<td>General Ed. (Cat. S, A, L, or F) (optional) 3</td>
</tr>
<tr>
<td>or EEC 105 Intro. Res. Econ</td>
<td>Total credits: 14-18</td>
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<td>Total credits: 14-18</td>
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**General Education (36 credits – 9 From Basic Sciences):** All Category MQ (Mathematical & Quantitative Reasonings), and N (Natural Sciences), General Education requirements (9 cr.) are satisfied by courses taken as part of the major. Thus, to satisfy URI’s General Education requirements, GEO students should take COM 101, WRT 104/105 or 106, 6 credits of Category S (Social Sciences – MAF 100; 3 cr. from NRS 100 [below]), and only 15 credits of General Education courses from Category A (Fine Arts & Literature), L (Letters), or F (Foreign Language/Culture). See the URI Course Catalog (also on the web at http://www.uri.edu/catalog/catalogh.html/index.html) for a listing of all General Education courses.

**Introductory Professional Courses (12 credits):**
- NRS 100 Natural Resource Conservation
- GEO 103 Understanding the Earth
- EEC 105 Introduction to Resource Economics

**Basic Sciences (33-35 credits) – 9 applicable to General Education:**
- BIO 101 Principles of Biology I
- BIO 102 Principles of Biology II
- CHM 101, 102 General Chemistry I, Lab
- CHM 112, 114 General Chemistry II, Lab
- PHY 111, 185 General Physics I, Lab or 203, 273 Elementary Physics I
- PHY 112, 186 General Physics II, Lab or 204, 274 Elementary Physics II
- MTH 131 or 141 Calculus I
- MTH 132 or 142 Calculus II
- STA 308 Statistics

**Core Courses (22 credits):**
- GEO 204 Problem Solving in Earth History
- GEO 210 Landforms: Origin and Evolution
- GEO 320 Earth Materials
- GEO 370 Structure of the Earth
- GEO 450 Introduction to Sedimentary Geology

**Geology Option**

**Geology (10 – 12 credits):**
- GEO 483 Hydrogeology
- Two GEO electives, ≥200-level

**Supporting Electives (12 credits):** Any GEO, EEC, NRS, and/or OCG course at ≥200-level

**Free Electives (8 - 10 credits)**

**Geological Oceanography Option**

**Oceanography concentration:**
- OCG 451 Oceanographic Science
- OCG 440 Geological Oceanography
- OCG 493 or 494 Special Problems & Independent Study in Oceanography
- One OCG or GEO elective at ≥200-level

**Supporting Electives (12 credits):** Any GEO, EEC, NRS, and/or OCG course at ≥200-level

**Free Electives (8 - 10 credits)**

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B.S., GEOLOGY & GEOLOGICAL OCEANOGRAPHY, 120 CREDITS

College of the Environment & Life Sciences (CELS)
Department of Geosciences

STUDENT ________________________________

General Education (36 credits)
Total A, L, F must equal 15 credits (may omit one A, L or F course)

A: ____________ (3)  ____________ (3)
L: ____________ (3)  ____________ (3)
F or D: ____________ (3)  ____________ (3)
A, L, F Total ____________

ECw: WRT 104, 105, 106, or 333 ____________ (3)
EC[D]: COM 100 or COM 110 ____________ (3)
S: 3 credits from below; MQ: 3 credits from below
N: ____________ (1)
URI 101: ____________ (1)

Introductory Professional Courses
(10 credits; -3 applicable to Gen Ed)

GEO 103 ____________ (4)*
NRS 100 ____________ (3)
ECE 105 ____________ (3)

*NOTE: Students may elect GEO 120 with the introductory lab in lieu of GEO 103.

Core Geosciences Courses (20 credits)

Fall
GEO 204 ____________ (4)
GEO 370 ____________ (4)

Spring
GEO 210 ____________ (4)
GEO 320 ____________ (4)
GEO 450 ____________ (4)

Supporting Electives (12 credits)
200-level or above courses chosen from GEO, EEC, NRS, or OCG.

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Students must complete 1 of the following options.

General Geology Option (10-12 cr.)

GEO 483 ____________ (4)
GEO elective ____________ ( )
GEO elective ____________ ( )
Electives must be 200-level or above

Geol. Oceanography Option (12 cr.)

OCG 451 ____________ (3) or OCG 301/401 ____________ (3)
OCG 440/540 ____________ (4)
GEO/OCG Elective ____________ ( )
OCG 493 or 494 ____________ (3)

Free electives (8-10 credits)
Select free electives to complete a total of 120 credits required for graduation.

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SUGGESTED SEQUENCE OF COURSES:

Freshman, Fall (15)
GEO 103
CHM 101, 102
NRS 100
Gen ed (EC)
Gen Ed (EC)
URI 101

Sophomore, Fall (14)
GEO 204
PHY 111, 185
or 203, 273
MTH 131 or 141
EEC 105 (S)/Gen Ed

Junior, Fall (14-15)
GEO 370
GEO elect.
BIO 101
Gen Ed. Elective

Senior, Fall (15-16)
GEO 483 or elective
Option course/elective
Supporting/Free elective
Free elective
Gen. Ed. Elective

Junior, Spring (14-15)
GEO 450
Option course/supp. elective
BIO 102
STA 308

Senior, Spring (15-16)
GEO 493 or elective
Option course/elective
Supporting/Free elective
Free elective/Gen Ed Elective
Gen. Ed Elective

Semester of option courses and electives may vary depending on the option selected. Students may use GEO 480 – Geologic Field Camp (summer field course) as a GEO elective or supporting elective.