GEOLOGY & GEOLOGICAL OCEANOGRAPHY

Effective Fall 2011

College of the Environment & Life Sciences (CELS

Department: Geosciences, 874-2265, http://www.uri.edu/cels/gel/
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.

Semester I (Fall)

URI 101	Freshman at URI	1
GEO 103	Understanding Earth	4
CHM 101, 102	General Chemistry I	4
NRS 100	Nat. Res. Conservation	3
General Ed. WRT or COM		3
	Total credits:	*15*

Semester II (Spring)

GEO 210	Landforms:Origin & Evol.	4
CHM 112, 114	General Chemistry II	4
MTH 111	Precalculus (if needed)	3
General Ed. WRT or COM		3
General Ed. or EEC 105 Intro. Res. Econ.		3
	Total credits:	*14-17*

** For more information about the major contact the Geosciences University College advisor listed above.*

Semester III (Fall)

GEO 204	Prob. Solv. in Earth Hist.	4
PHY 111, 185	General Physics I	4
or 203, 173		
MTH 131	Calculus I (*or* MTH 141)	3-4
General Ed. (Cat. S, A, L, or F)		3
or EEC 105 Intro. Res. Econ		
	Total credits: 14-15	

Semester IV (Spring)

GEO 320	Earth Materials	4
PHY 112, 114	General Physics II	4
or 204, 274		
MTH 132	Calculus II (*or* MTH 142)	3-4
General Ed. (Cat. S, A, L, or F)		3
General Ed. (Cat. S, A, L, or F) (optional)		3
	Total credits: 14-18	

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 100, 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/cataloghtml/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

EFFECTIVE FALL 2011

College of the Environment & Life Sciences (CELS)

Department of Geosciences **Advisor:** _____

STUDENT_____ **ID #** _____

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)
FC[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) 3 credits from below
N: 6 cr. from below; MQ: 3 credits from below

URI 101:_____(1)

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

GEO 103 _____ (4)*
NRS 100 _____ (3)
EEC 105 _____ (3)

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

Core Geosciences Courses (20 credits)

Fall	Spring
GEO 204 _____(4)	GEO 210 _____(4)
GEO 370 _____(4)	GEO 320 _____(4)
	GEO 450 _____(4)

Supporting Electives (12 credits).

200-level or above courses chosen from GEO, EEC, NRS, or OCG.

_____(___) _____(___)
_____(___) _____(___)

Supporting Sciences (33 credits; -9 credits applicable to Gen. Ed.)

BIO 101 _____ (4)
BIO 102 *or* GEO/BIO 272 *or* CHM 124/126 _____ (4)
CHM 101,102 _____ (4)
CHM 112,114 _____ (4)
PHY 111,185 _____ (4)
or PHY 203, 273 _____(4)
PHY 112,186 _____(4)
or PHY 204, 274 _____(4)
MTH 131 _____(3) *or* MTH 141 _____(4)
MTH 132 _____(3) *or* MTH 142 _____(4)
STA 308 _____(3) *or* STA 409 _____(3)

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.

_____(___) _____(___)
_____(___) _____(___)

NOTE: Students' GPA for the major is computed based on all Intro Prof Courses, Core GEO, Supporting electives, and option courses; minimum GPA in major is 2.0. Students may combine supporting and free electives to pursue a minor field of study.

SUGGESTED SEQUENCE OF COURSES:

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

Freshman, Spring (14)
GEO 210
CHM 112, 114
Gen ed (EC)
MTH 111, if needed, or Gen Ed/EEC 105 (S)

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

Sophomore, Spring (17)
GEO 320
PHY 112, 186 or 204,274
MTH 132 or 142
Gen. Ed. Elective
Gen. Ed. Elective

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

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

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

Senior, Spring (15-16)
Option course/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.