BS in GEOLOGY: Environmental Geology Emphasis (694029) MAP Sheet

Department of Geological Sciences

For students entering the degree program during the 2012–2013 curricular year.

Increasing concern with environmental degradation and natural geologic hazards has led to a demand for geologists who are both well grounded in the fundamentals of the science of geology and specifically prepared to address environmental problems. This degree prepares students for careers either in the environmental services industry or government or for advanced studies.

UNIVERSITY CORE AND GRADUATION REQUIREMENTS

UNIVERSITY CORE REQUIREMENTS

Requirements	#Classes	Hours	Classes
Doctrinal Foundation			
Book of Mormon	2	4.0	Rel A 121/H *and* 122/H
New Testament	1	2.0	Rel A 211/H *or* 212/H
Doctrine and Covenants	1	2.0	Rel C 324/H *or* 325/H
The Individual and Society			
Citizenship			
American Heritage	1–2	3–6.0	from approved list
Global & Cultural Awareness	1	3.0	from approved list
Skills			
Effective Communication			
First-Year Writing	1	3.0	from approved list
Adv Written & Oral Communication	1	3.0	Engl 316*
Quantitative Reasoning	0–1	0–4.0	Math 112*, 113*, or Stat 121*
Languages of Learning (Math or Language)	1	3–4.0	Math 112*, 113*, or Stat 121*
Arts, Letters, and Sciences			
Civilization 1 and 2	2	6.0	from approved list
Arts	1	3.0	from approved list
Letters	1	3.0	from approved list
Scientific Principles & Reasoning			
Biological Science	1–2	3–5.0	from approved list
Physical Science	1	3.0	Geol 210*
Social Science	1	3.0	from approved list
Core Enrichment: Electives			
Religion Electives	3–4	6.0	from approved list
Open Electives	Variable	Variable	personal choice

GRADUATION REQUIREMENTS:

Minimum residence hours required	30.0
Minimum hours needed to graduate	120.0

PROGRAM REQUIREMENTS (73–75.0 total hours)

No D credit is allowed in major courses.

Complete the following:

Geol	111	Physical Geology	4.0
Geol	112	Historical Geology	4.0
Geol	210*	Field Studies	3.0
Geol	230	Geological Communications	3.0
Geol	351	Mineralogy	4.0
Geol	352	Petrology	3.0
Geol	370	Sedimentology and Stratigraphy	3.0
Geol	375	Structural Geology	3.0
Geol	410	Geological Field Methods	6.0
Geol	435	Introduction to Groundwater	3.0
Geol	445	Geochemistry	3.0

Complete 2 hours (four enrollments) of the following:

Geol	491R	Geology Seminar	0.5

Complete two courses from the following:

CE En	351	Environmental Engineering	3.0
Geol	411	Geomorphology & Remote Sensing	3.0
Geol	440	Solid Earth Geophysics	3.0
Geol	535	Contaminant Hydrogeology	3.0
PWS	303	Soils Conservation and Resources	3.0

Complete the following:

Engl	316*	Technical Communication	3.0
Math	112*	Calculus 1	4.0
Math	113*	Calculus 2	4.0
Phscs	105	Introductory Applied Physics	3.0
Phscs	106	Introductory Applied Physics	3.0
Stat	121*	Principles of Statistics	3.0

Complete one of the following options:

Either

Chem	105	General College Chemistry	4.0
Chem	106	General College Chemistry	3.0
Chem	107	General College Chemistry Lab	1.0

Or

Chem	111	Principles of Chemistry	3.0
Chem	112	Principles of Chemistry	3.0

Portfolio: All students are required to construct a portfolio of their work that includes samples of their writing, scientific data analysis, and presentations—both oral and written. The portfolio will be evaluated during the semester before graduation.

***THESE CLASSES CAN FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (9–14.0 hours overlap)**

FOR UNIVERSITY CORE OR PROGRAM QUESTIONS CONTACT THE ADVISEMENT CENTER
Physical and Mathematical Sciences College Advisement Center
N-181 ESC
Brigham Young University, Provo, UT 84602
Telephone: (801) 422-2674

FACULTY ADVISORS:

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2012–2013

Suggested Sequence of Courses:

FRESHMAN YEAR**

1st Semester

First-Year Writing or American Heritage	3.0
Chem 105 (FWSpSu)	4.0
Or Chem 111	(3.0)
Geol 111 (FW)	4.0
Rel A 121	2.0
General electives	1.0
Total Hours	**13-14.0**

2nd Semester

American Heritage or First-Year Writing	3.0
Chem 106, 107 (FWSpSu)	4.0
Or Chem 112	(3.0)
Geol 112 (W)	4.0
Global & Cultural Awareness	3.0
Rel 122	2.0
Total Hours	**15-16.0**

SOPHOMORE YEAR**

3rd Semester

Geol 210 (F)	3.0
(Begins meeting before start of Fall semester)	
Geol 230 (F)	3.0
Geol 351 (F)	4.0
Math 112	4.0
Rel C 324/325	2.0
Total Hours	**16.0**

4th Semester

Geol 352 (W)	3.0
Geol 370 (W)	3.0
Math 113	4.0
Phscs 105 (FWSp)	3.0
Rel A 211/212	2.0
Total Hours	**15.0**

JUNIOR YEAR**

5th Semester

Geol 375 (F)	3.0
Geol 435 (F)	3.0
Geol 491R (FW)	0.5
Phscs 106 (FWSu)	3.0
Civilization 1	3.0
Rel A 211/212	2.0
Total Hours	**14.5**

6th Semester

Engl 316 (FWSpSu)	3.0
Geol 445 (W)	3.0
Geol 491R (FW)	0.5
Stat 121	3.0
Civilization 2	3.0
Religion elective	2.0
Total Hours	**14.5**

SPRING TERM

Geol 410 (Sp)	6.0
Total Hours	**6.0**

SENIOR YEAR**

7th Semester

Geol 491R (FW)	0.5
Arts	3.0
Letters	3.0
Religion elective	2.0
Elective	0.5
Total Hours	**9.0**

8th Semester

Geology elective	3.0
Geology elective	3.0
Geol 491R (FW)	0.5
Biological Science	3.0
Religion elective	2.0
Social Science	3.0
Total Hours	**14.5**

THE DISCIPLINE:

Geological sciences consist of a number of disciplines aimed at understanding the Earth's origin and development and the natural processes that have operated upon it and within it from the time of formation of the solar system. With the development of remote sensing technology and the exploration of the solar system by spacecraft, geological sciences have become increasingly important for understanding not only the Earth but the Moon, other planets and their moons, and small bodies that orbit the sun.

Understanding the dynamic processes of Earth and other planets is relevant to many societal needs, such as assessment and forecasting of natural hazards, environmental change, and discovery of energy and mineral resources. Some of the diverse disciplines that can be studied in this department include general geology, plate tectonics, volcanology, geochemistry, geophysics, paleontology, environmental geology, petroleum geology, hydrogeology, paleoclimatology, and planetary geology.

CAREER OPPORTUNITIES:

Graduates have the opportunity to work both outdoors and in the laboratory, pursuing careers in energy, mineral, and water resources or in environmental evaluation with industry, government, or consulting firms. The substantial preparation in basic sciences and mathematics also leads to a broad spectrum of teaching opportunities. Some scholarship money is available for those who pursue a geological sciences degree as a pre-law track. The most marketable terminal degree in geological sciences is the MS. Starting salaries for this degree are often very competitive with any other discipline.

For more information on careers in your major, please refer to *From Major to Career*, a publication which is located in all college advisement centers.

****Note**: The sequence of courses suggested may not fit the circumstances of every student. Students should contact their college advisement center for help in outlining an efficient schedule.

Note: Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

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