

B.S. in Geology

Fall 2010

Students with this degree are well prepared to take advantage of career opportunities in petroleum or mineral industries, environmental geology, or paleontology resource management. Students are encouraged to choose electives emphasizing one of these three areas depending on their career interests. It also provides a solid basis for graduate study in the geosciences, or with careful planning of free electives, for admission to post-graduate professional schools of education, research, law, or medicine.

FRESHMAN YEAR			<i>Second Semester</i>		
<i>First Semester</i>			__GEOE 322	Structural Geology	(2-1) 3
__MATH 123	Calculus I	(4-0) 4	__GEOL 403	Regional Field Geology ⁵	(0-1) 1
__CHEM 112	General Chemistry	(3-0) 3	__GEOL 461	Invert. Paleontology **	(2-1) 3
__CHEM 112L	Exper. Gen. Chemistry I	(0-1) 1	__One of	GeoE 324 Eng Geophysics	
__ENGL 101	Composition I	(3-0) 3		GeoE 482 Applied Geomorph**	(2-1) 3
__GEOL 201	Physical Geology	(3-0) 3	__	Geology Electives ⁴	3
__GEOL 201L	Physical Geology Lab	(0-1) 1	__	Humanities/Social Science Elective	1
__IS 110	Explorations ¹	_____2	__PE	Physical Education	_____1
		17			15
<i>Second Semester</i>			<i>Summer</i>		
__CHEM 114	General Chemistry II	(3-0) 3	__GEOE 410	Field Geology	<u>(0-6) 6</u>
__CHEM 114L	Exper. Gen. Chemistry II	(0-1) 1			6
__MATH 125	Calculus II	(4-0) 4	SENIOR YEAR		
__GEOE 211	Earth Sys. Eng. Anal.	(1-1) 2	<i>First Semester</i>		
__	Gen Ed Humanities/Social Science Elective ²	_____6	__GEOL 464	Senior Research I	(1-0) 1
		16	__	Geology Electives ⁴	6
SOPHOMORE YEAR			__	Free electives	3
<i>First Semester</i>			__	Humanities/Social Science elective	_____3
__PHYS 211	Univ. Physics I	(3-0) 3			13
__One of	MATH 225 Calculus III ³	(4-0) 4	<i>Second Semester</i>		
	MATH 281 Intro to Statistics (3-0)	3-4	__GEOL 465	Senior Research II ⁶	3
__GEOL 323	Search for Our Past	(3-0) 3	__	Geology Electives ⁴	6
__	Sophomore Electives ⁴	3	__	Free electives	_____5-6
__	Gen Ed Humanities/Social Science Elective ²	_____3			14-15
		15-16			
<i>Second Semester</i>			128 semester credits are required.		
__PHYS 213	Univ. Physics II	(3-0) 3	**Course offered in alternate years.		
__ENGL 279	Technical Communications I	(3-0) 3	Critical sequence, must be taken in the specified semester.		
__GEOE 212	Mineral. and Crystallog.	(2-1) 3	Curriculum Notes		
__	Gen Ed Humanities/Social Science Elective ²	3	¹ Transfer students may substitute 2 credits of free electives for IS 110.		
__	Sophomore Electives ⁴	3	² Students must complete 27 credits of the general education core in their first 64 credit hours, including 6 credits of science, 3 cr math, 6 cr English/Technical Communication, 6 cr humanities, and 6 cr social science. ENGL 289 yields an addition 3 general education credits, for a total of 30.		
__PE	Physical Education	_____1	³ Students should consult an advisor when choosing math.		
		16	⁴ Sophomore and Geology electives must be selected from the approved lists. At least 9 credits must be taken from 400-level courses. Substitutions must be approved by dept head.		
JUNIOR YEAR			⁵ Paleo students may substitute Geol 371 Field Paleontology (0-2) for Geol 403; the extra credit is a geology elective.		
<i>First Semester</i>			⁶ Under exceptional circumstances, a student may petition the department head to substitute geology electives for senior research.		
__GEOL 331	Stratig. and Sedimentation	(2-1) 3			
__GEOE 341	Intro to Ign/Met Petrology	(2-1) 3			
__GEOL 316	Intro. to GIS	(2-1) 3			
__ENGL 289	Technical Communications II ¹	3			
__	Geology Electives ⁴	_____3			
		15			

Electives Worksheet (see reverse for list)

List GE Hum Electives (6 cr)

_____ ()
 _____ ()

List GE Social Sci Electives (6 cr)

_____ ()
 _____ ()

List Hum/SS Electives (4 cr)

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List Sophomore Electives (6 cr)

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List Free Electives (8 cr)

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List Geology Electives (18 cr)

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The major requires 6 credits of sophomore electives, 18 credits of geology electives and 8 credits of free electives. At least 9 credits of geology electives must come from courses at the 400-level. The lists below provide guidance for students wishing to choose electives focused on a specific career objective.

Electives by Focus

Resource Geology

MEM 201 Mine Surveying
MEM 433 Geoscience Modeling
GEOE 324 Eng Geophysics I[#]
GEOE 425 Eng Geophysics II
GEOE 451 Economic Geology
GEOE 452 Geochem Explor
GEOE 462 Drilling Engineering
GEOE 461 Petroleum Prod
GEOL 351 Earth Resources
GEOL 413 Ore Microscopy
GEOL 442 Optical Petrology

Environmental Geology

GEOE 425 Eng Geophysics II
GEOE 466 Eng/Env Geol
GEOE 462 Drilling Engineering
GEOE 468 Geohazards
GEOE 475 Ground Water*
GEOE 482 Applied Geomorph[#]
GEOL 351 Earth Resources

Geospatial

MEM 201 Mine Surveying
GEOE 475 Ground Water*
GEOL 376 Geospatial Field
GEOL 417 Geospatial Data
GEOL 419 Adv Geospatial Anal
GEOL 420 Remote Sensing

Note: Geology majors can simultaneously satisfy elective requirements for the Geology BS and a Minor in Geospatial Technology by taking GEOL 417, GEOL 419, GEOL 420, and two courses from: MEM 201, MATH 281, GEOE 475*, or GEOL 376. Students considering the geospatial minor should take GEOL 316 Intro to GIS by their junior fall.

Paleontology

BIOL 121/L Anatomy
BIOL 151 Gen Biology I
BIOL 123 Physiology
BIOL 153 Gen Biology II
BIOL 311 Principles of Ecology
GEOL 371 Field Paleo
GEOL 372 Dinosaurs
GEOL 472 Museum Curation
GEOL 473 Museum Prep

* Calc III prerequisite

Electives by Semester

Actual offerings may vary due to changes in scheduling and/or enrollments.

Sophomore Electives

Fall electives (take one)
BIOL 121/L Anatomy
BIOL 151 Gen Biology I
MEM 201 Mine Surveying
GEOL 351 Earth Resources

Spring electives (take one)

BIOL 123 Physiology
BIOL 153 Gen Biology II
GEOL 361 Oceanography**
GEOL 372 Dinosaurs

Geology Electives

Fall electives
MEM 201 Mine Surveying
GEOE 461 Petroleum Prod
GEOE 475 Groundwater*
GEOL 351 Earth Resources

Fall-even electives

GEOL 419 Adv Geospatial Analysis
GEOL 420 Remote Sensing

Fall-odd electives

GEOE 452 Geochem Explor
GEOE 462 Drilling Engineering
GEOE 466 Eng/Env Geol
GEOE 468 Geohazards
GEOL 413 Ore Microscopy
GEOL 473 Museum Prep Exhib

Spring electives

GEOE 324 Eng Geophysics I[#]
GEOE 475 Ground Water*
GEOL 372 Dinosaurs
GEOL 417 Geospatial Data

Spring-even electives

GEOE 425 Eng Geophys II
GEOL 361 Oceanography
GEOL 442 Optical Petrology
GEOL 472 Museum Curation

Spring-odd electives

GEOE 451 Economic Geology
GEOE 482 Applied Geomorph[#]

Summer electives

GEOL 371 Field Paleo
GEOL 376 Geospatial Field

* Calc III prerequisite

** Offered alternate years

[#]Must take one of these; the other can be an elective.