

# GEOLOGY - 5-YEAR BACHELOR OF SCIENCE AND MASTER OF OCEAN SCIENCE AND TECHNOLOGY

## Program Requirements

### First Year

Fall		Semester	Credit
		Hours	Hours
CHEM 119	Fundamentals of Chemistry I	4	
GEOL 104	Physical Geology	4	
MATH 151	Engineering Mathematics I	4	
ENGL 104	Composition and Rhetoric	3	
Semester Credit Hours			15

### Spring

CHEM 120	Fundamentals of Chemistry II	4	
GEOL 106	Historical Geology	4	
MATH 152	Engineering Mathematics II	4	
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> )		3	
Semester Credit Hours			15

### Second Year

Fall		Semester	Credit
		Hours	Hours
GEOL 203	Mineralogy <sup>1</sup>	4	
GEOL 311	Principles of Geological Writing <sup>1,2</sup>	1	
GEOP 341	Fundamentals of Geophysics <sup>1</sup>	3	
MATH 251	Engineering Mathematics III <sup>1</sup>	3	
PHYS 206	Newtonian Mechanics for Engineering and Science	3	
PHYS 226	Physics of Motion Laboratory for the Sciences	1	
Semester Credit Hours			15

### Spring

GEOL 302	Introduction to Petrology <sup>1</sup>	4	
GEOL 306	Sedimentology and Stratigraphy <sup>1</sup>	4	
MATH 308	Differential Equations <sup>1</sup>	3	
PHYS 207	Electricity and Magnetism for Engineering and Science	3	
PHYS 227	Electricity and Magnetism Laboratory for the Sciences	1	
Select one of the following: <sup>3</sup>		3	
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>1</sup>			
Government/Political science ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science</a> ) <sup>1</sup>			
Semester Credit Hours			18

### Third Year

Fall		Semester	Credit
		Hours	Hours
GEOL 304	Igneous and Metamorphic Petrology <sup>1</sup>	4	
GEOL 305	Paleobiology <sup>1</sup>	3	
GEOL 451	Introduction to Geochemistry <sup>1</sup>	3	
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> )		3	
Select one of the following: <sup>3</sup>		3	
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>1</sup>			
Government/Political science ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science</a> ) <sup>1</sup>			
Semester Credit Hours			16

### Spring

GEOL 309	Introduction to Geological Field Methods	3	
GEOL 312	Structural Geology and Tectonics <sup>1,2</sup>	4	
GEOL Elective <sup>1,2,4</sup>		4	
Technical elective <sup>4</sup>		3	
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> ) <sup>1</sup>		3	
Semester Credit Hours			17

### Summer

GEOL 300	Field Geology	6	
Semester Credit Hours			6

### Fourth Year

Fall		Semester	Credit
		Hours	Hours
OCNG 604	Ocean Observing Systems <sup>5</sup>	3	
OCNG 608	Physical Oceanography <sup>5</sup>	3	
Select one of the following: <sup>3</sup>		3	
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> )			
Government/Political science ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science</a> )			
Select one from:		3	
OCNG 620	Biological Oceanography		
OCNG 630	Geological Oceanography		
OCNG 640	Chemical Oceanography		
Social and behavioral sciences ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences</a> )		3	
Semester Credit Hours			15

### Spring

OCNG 603	Communicating Ocean Science	3	
OCNG 657	Data Methods and Graphical Representation in Oceanography <sup>6</sup>	3	
Select one of the following: <sup>3</sup>		3	
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> )			

Government/Political science ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science</a> )		
Select one from:		3
OCNG 620	Biological Oceanography	
OCNG 630	Geological Oceanography	
OCNG 640	Chemical Oceanography	
Technical elective <sup>4</sup>		3
Semester Credit Hours		15
<b>Fifth Year</b>		
<b>Fall</b>		
Advanced specialized OCNG graduate courses		9
Semester Credit Hours		9
<b>Spring</b>		
OCNG 661	Advanced Oceanographic Data Analysis and Communication	3
Advanced specialized OCNG graduate courses		6
Semester Credit Hours		9
Total Semester Credit Hours		150

<sup>1</sup> Any of the required courses may be taken during the Summer Sessions to diminish the heavy semester loads during Years Two and Three.

<sup>2</sup> A second W course is required. GEOL 312 is offered as a W option when taught by Dr. Julie Newman, and other GEOL electives also fulfill the W requirement (including GEOL 491 when arranged with the permission of the instructor).

<sup>3</sup> Students must complete 6 credit hours of American history and 6 credit hours of government/political science.

<sup>4</sup> Select in consultation with advisor.

<sup>5</sup> Two graduate courses will be taken for dual undergraduate/graduate credit.

<sup>6</sup> Students will not be permitted to receive credit for both undergraduate-level and graduate-level versions of stacked courses because the content and learning outcomes are too similar (e.g., OCNG 404/OCNG 604; OCNG 456/OCNG 656)."