

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

## Program Requirements

### First Year

Fall		Semester Credit Hours
CHEM 119	Fundamentals of Chemistry I	4
ENGL 104	Composition and Rhetoric	3
GEOL 150	Introduction to the Solid Earth	4
GEOL 180	Introduction to Geology and Geophysics	1
MATH 151	Engineering Mathematics I	4
<b>Semester Credit Hours</b>		<b>16</b>

### Spring

CHEM 120	Fundamentals of Chemistry II	4
GEOL 152	History of the Earth	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
<b>Semester Credit Hours</b>		<b>15</b>

### Second Year

Fall		
GEOL 203	Mineralogy	4
GEOL 210	Geological Communication	3
MATH 251	Engineering Mathematics III	3
PHYS 206	Newtonian Mechanics for Engineering and Science	3
PHYS 226	Physics of Motion Laboratory for the Sciences	1
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> )		3
<b>Semester Credit Hours</b>		<b>17</b>

### Spring

GEOL 250	Geological Field Methods	4
GEOL 304	Igneous and Metamorphic Petrology	4
MATH 308	Differential Equations	3
PHYS 207	Electricity and Magnetism for Engineering and Science	3
PHYS 227	Electricity and Magnetism Laboratory for the Sciences	1
<b>Semester Credit Hours</b>		<b>15</b>

### Third Year

Fall		
GEOL 306	Sedimentology and Stratigraphy	4
GEOP 341	Fundamentals of Geophysics	3

American history (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history>) 3

Government/Political science (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science>) 3

Language, philosophy and culture (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture>)<sup>1</sup> 3

**Semester Credit Hours** 16

### Spring

GEOL 312	Structural Geology and Tectonics	4
GEOL 314	Paleontology and Geobiology	4
GEOL 350	Summer Field Geology	3
Technical elective <sup>2</sup>		6

**Semester Credit Hours** 17

### Summer

American history (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history>) 3

**Semester Credit Hours** 3

### Fourth Year

Fall		
GEOL 450	Geology Senior Project	3
OCNG 655	Experimental Design and Analysis in Oceanography <sup>4</sup>	3
OCNG 656	MATLAB Programming for Ocean Sciences or Python for Geosciences	3
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> ) <sup>1</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
<b>Semester Credit Hours</b>		<b>15</b>

### Spring

OCNG 657	Data Methods and Graphical Representation in Oceanography	3
Select one of the following: <sup>3</sup>		3
OCNG 620	Biological Oceanography	
OCNG 630	Geological Oceanography	
OCNG 640	Chemical Oceanography	
Technical electives <sup>2</sup>		6

**Semester Credit Hours** 12

### Fifth Year

Fall		
OCNG 604	Ocean Observing Systems <sup>4</sup>	3
OCNG 608	Physical Oceanography <sup>5</sup>	3
Advanced specialized OCNG graduate course		3
Advanced specialized OCNG graduate course		3

**Semester Credit Hours** 12

### Spring

OCNG 603	Communicating Ocean Science	3
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OCNG 661	Advanced Oceanographic Data Analysis and Communication <sup>5</sup>	3
Advanced specialized OCNG graduate courses		3
Advanced specialized OCNG graduate course		3
<b>Semester Credit Hours</b>		<b>12</b>
<b>Total Semester Credit Hours</b>		<b>150</b>

<sup>1</sup> The Graduation requirements include a requirement for three hours of International and Cultural Diversity courses and three hours of Cultural Discourse courses. A course satisfying a Core category, a college/department requirement, or a free elective can be used to satisfy this requirement. See academic advisor.

<sup>2</sup> Any science, math or engineering course that augments the degree with the approval of the advisor.

<sup>3</sup> Graduate courses may be in Geology, Geophysics or a supporting math or science area, chosen with approval of the student's advisory committee. Students in the Thesis Option may include up to 8 hours of Research courses.

<sup>4</sup> Students will not be permitted to receive credit for both the 400- and 600-level versions of certain courses because the content and learning outcomes are too similar (OCNG 404/OCNG 604; GEOS 470/OCNG 655)

<sup>5</sup> The MS degree Non-Thesis Option is 36 total hours, with 6 hours double-counting with the undergraduate Technical Electives. OCNG 608 and OCNG 661 hours are applied toward both the Bachelor of Science in Geology and the Master of Ocean Science and Technology.

Any of the required courses may be taken during the Summer Sessions to diminish the heavy semester loads during Years 2 and 3.

The program includes a total of 156 hours which up to 6 hours may be applied toward both the Bachelor of Science in Geology and the Master of Ocean Science and Technology.