

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

The program offers qualified students the opportunity to achieve an efficient 5-year combined program at Texas A&M, completing the Bachelor of Science (BS) degree in the Department of Geology and Geophysics and the non-thesis Master of Ocean Science and Technology in the Department of Oceanography. The concurrent degree program will enable motivated students to coordinate the required BS coursework and Master of Ocean Science and Technology coursework to complete the required credit hours for each degree without diminishing scope or quality of work.

## Application and Eligibility:

- Applications to the combined program will be submitted by June 15 after the completion of the student's junior year. Applications submitted after that time will be evaluated on a case by case basis. Once admitted to the program, students must maintain a minimum 3.0 GPA on all graduate coursework.
- Applicants must have a minimum undergraduate GPA of 3.25. Applicants should also earn a C or better in all Chemistry, Calculus and Physics courses. Once admitted to the program, students must maintain a minimum 3.0 GPA on all graduate coursework.
- A faculty advisor will be assigned to each student. Students may seek additional mentors, but a formal committee is not required.
- Students admitted into the combined program must finish the entire 150 credit hours to obtain both the Bachelor's and Master's degrees. Students will graduate at the completion of the 5<sup>th</sup> year in the combined program coursework (150 credit hours) with both Bachelor's and Master's degrees.
- Students admitted to the program will change from U4 to G7 status when they are admitted having completed at least 90 hours (end of spring semester, year 3).
- Students not accepted or not allowed to continue with the combined program will complete the 120-hour Bachelor's degree under the standard 4 year curriculum. These students may still apply to the traditional graduate program.

## Program Requirements

### First Year

		Semester Credit Hours
<b>Fall</b>		
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>
<b>Spring</b>		
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

**Semester Credit Hours 15**

### 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

**Semester Credit Hours 17**

#### 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

**Semester Credit Hours 15**

### Third Year

#### Fall

GEOL 306	Sedimentology and Stratigraphy	4
GEOP 341	Fundamentals of Geophysics	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> )		3
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
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> ) <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 ( <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> )		3
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**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 or OCNG 669	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
<b>Semester Credit Hours</b>		<b>12</b>

**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
<b>Semester Credit Hours</b>		<b>12</b>

**Spring**

OCNG 603	Communicating Ocean Science	3
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>

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.

<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