

# OCEANOGRAPHY - BS, OCEAN OBSERVING SCIENCE AND TECHNOLOGY TRACK

## Program Requirements

### First Year

		Semester Credit Hours
<b>Fall</b>		
CHEM 119	Fundamentals of Chemistry I	4
ENGL 104	Composition and Rhetoric	3
GEOS 101	Introduction to the Geosciences	1
MATH 151	Engineering Mathematics I <sup>1</sup>	4
OCNG 251 & OCNG 252	Oceanography and Oceanography Laboratory	4
Semester Credit Hours		16

### Spring

CHEM 120	Fundamentals of Chemistry II	4
MATH 152	Engineering Mathematics II <sup>1</sup>	4
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	4
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
Semester Credit Hours		15

### Second Year

		Semester Credit Hours
<b>Fall</b>		
BIOL 111	Introductory Biology I	4
OCNG 203	Communicating Oceanography	1
OCNG 404	Ocean Observing Systems	3
STAT 211	Principles of Statistics I	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
Semester Credit Hours		14

### Spring

BIOL 112	Introductory Biology II	4
COMM 203 or COMM 205	Public Speaking or Communication for Technical Professions	3
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences	4
STAT 212	Principles of Statistics II	3
Semester Credit Hours		14

### Third Year

		Semester Credit Hours
<b>Fall</b>		
OCNG 410	Physical Oceanography	3
OCNG 420	Biological Oceanography	3

OCNG 456 or OCNG 469	MATLAB Programming for Ocean Sciences or Python for Geosciences	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> )		3
Track elective <sup>2</sup>		3

Semester Credit Hours 15

### Spring

GEOS 470	Data Analysis Methods in Geosciences	4
OCNG 430	Geological Oceanography	3
OCNG 440	Chemical Oceanography	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
Track elective <sup>2</sup>		3

Semester Credit Hours 16

### Fourth Year

		Semester Credit Hours
<b>Fall</b>		
OCNG 303	Professional Communication in Oceanography	3
OCNG 443	Oceanographic Field and Laboratory Methods	3
OCNG 481	Seminar	1
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
Technical elective <sup>3</sup>		3
Track elective <sup>2</sup>		3

Semester Credit Hours 16

### Spring

OCNG 461	Advanced Oceanographic Data Analysis and Communication	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> )		3
Technical elective <sup>3</sup>		2
Track elective <sup>2</sup>		3

Semester Credit Hours 14

Total Semester Credit Hours 120

<sup>1</sup> A grade of C or better is required.

<sup>2</sup> Select from ATMO 201, ATMO 203, ATMO 251; GEOG 361; OCNG 350, OCNG 456, OCNG 469; STAT 407.

<sup>3</sup> Select from OCNG 400-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/ocng/>), ATMO 201, ATMO 203, ATMO 251, ATMO 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/atmo/>); BIOL 213, BIOL 214, BIOL 300-399 (<http://catalog.tamu.edu/undergraduate/course-descriptions/biol/>); BICH 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/bich/>); CHEM 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/chem/>); CVEN 221; GENE 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/gene/>); GEOG 442/GEOS 442, GEOG 361, GEOG 370/MARS 370, GEOG 390; GEOS 442/GEOG 442, GEOS 444; MATH 251; MATH 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/math/>); PHYS 221; PHYS 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/phys/>); OCEN 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/ocen/>); STAT 212, STAT 400-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/stat/>).