OCEANOGRAPHY - BS, MARINE ECOSYSTEM SCIENCE AND HEALTH TRACK - 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
GEOS 101	Introduction to the Geosciences	1
MATH 151	Engineering Mathematics I [1]	4
OCNG 251	Oceanography	3
OCNG 252	Oceanography Laboratory	1
	Semester Credit Hours	16
Spring		
CHEM 120	Fundamentals of Chemistry II	4
PHYS 206	Newtonian Mechanics for Engineering and Science	3
PHYS 226	Physics of Motion Laboratory for the Sciences	1
MATH 152	Engineering Mathematics II [1]	4
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)		3
	Semester Credit Hours	15
Second Year		
Fall		
BIOL 111	Introductory Biology I	4
CHEM 227	Organic Chemistry I	3
CHEM 237	Organic Chemistry Laboratory	1
OCNG 203	Communicating Oceanography	1
STAT 211	Principles of Statistics I	3
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)		3
	Semester Credit Hours	15
Spring		
BIOL 112	Introductory Biology II	4
CHEM 228	Organic Chemistry II	3
CHEM 238	Organic Chemistry Laboratory	1
COMM 203 or COMM 205	Public Speaking or Communication for Technical Professions	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		
OCNG 420 or OCNG 440	Biological Oceanography or Chemical Oceanography	3
OCNG 456 or OCNG 469	MATLAB Programming for Ocean Sciences or Python for Geosciences	3
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts)		3
Government/Political science (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science)		3
Technical elective [3]		3
Track elective [2]		2
	Semester Credit Hours	17
Spring		
GEOS 470	Data Analysis Methods in Geosciences	4
OCNG 430	Geological Oceanography	3
OCNG 481	Seminar	1
Government/Political science (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science)		3
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences)		3
Technical elective [3]		2
Track elective [2]		2
	Semester Credit Hours	18
Fourth Year		
Fall		
OCNG 303	Professional Communication in Oceanography	3
OCNG 443	Oceanographic Field and Laboratory Methods	3
OCNG 608	Physical Oceanography [4]	3
OCNG 655	Experimental Design and Analysis in Oceanography	3
Track elective [3]		3
	Semester Credit Hours	15
Spring		
OCNG 461	Advanced Oceanographic Data Analysis and Communication	3
OCNG 620 or OCNG 640	Biological Oceanography [4] or Chemical Oceanography	3
OCNG 657	Data Methods and Graphical Representation in Oceanography	3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture)		3

Track elective [2]		3
	Semester Credit Hours	15
Fifth Year		
Fall		
OCNG 604	Ocean Observing Systems	3
OCNG 656 or OCNG 669	MATLAB Programming for Ocean Sciences or Python for Geosciences	3
Advanced specialzed OCNG graduate course		3
Advanced specialzed OCNG graduate course		3
	Semester Credit Hours	12
Spring		
OCNG 603	Communicating Ocean Science	3
OCNG 661	Advanced Oceanographic Data Analysis and Communication	3
Advanced specialzed OCNG graduate course		3
Advanced specialzed OCNG graduate course		3
	Semester Credit Hours	12
	Total Semester Credit Hours	150

1 A grade of C or better is required.

2 Select from ATMO 363; BIOL 213, BIOL 214, BIOL 351; CHEM 315, CHEM 362, CHEM 383, CHEM 415; GENE 302; OCNG 350, OCNG 425, OCNG 453, OCNG 456, OCNG 469.

3 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/).

4 Applied toward both the Bachelor of Science in Oceanography 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.

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 440/OCNG 640; GEOS 470/OCNG 655)

The program includes a total of 156 hours with 6 hours being applied toward both the Bachelor of Science in Oceanography and the Master of Ocean Science and Technology.