

# MARINE BIOLOGY - BS, LICENSE OPTION

The Marine Biology License Option program allows the marine biology student to prepare for a career as an officer aboard a sea going vessel by participating in the Texas A&M Maritime Academy Corps of Midshipmen. The curriculum provides the basics of marine biology, as well as courses leading toward licensing as a Third Mate of any gross tonnage upon oceans, steam, or motor vessels, in the U.S. Merchant Marine.

The Marine Biology License Option curriculum is an abbreviated version of the Marine Biology curriculum and is oriented toward field activities consistent with service aboard research vessels. Midshipmen who enroll in and apply to graduate in this curriculum must pass the license examination for Third Mate in order to graduate from Texas A&M University. Certain USCG courses require a minimum grade of C (70%).

## Program Requirements

### First Year

Fall		Semester Credit Hours
BIOL 111	Introductory Biology I <sup>1,2</sup>	4
CHEM 119	Fundamentals of Chemistry I	4
MARB 101	Succeeding in Science <sup>2</sup>	1
MART 103	Basic Safety and Lifeboatman Training <sup>3</sup>	3
MART 201	Vessel Structure and Ship Knowledge <sup>3</sup>	3
Select one from: <sup>4</sup>		3
MATH 140	Mathematics for Business and Social Sciences	
MATH 150	Functions, Trigonometry and Linear Systems	
MATH 152	Engineering Mathematics II	
PHIL 240	Introduction to Logic	
Semester Credit Hours		18

Spring		Semester Credit Hours
BIOL 112	Introductory Biology II <sup>1,2</sup>	4
CHEM 120	Fundamentals of Chemistry II	4
MART 115	Seamanship I <sup>3</sup>	3
MART 204	Terrestrial Navigation <sup>3</sup>	3
MATH 142 or MATH 151	Business Calculus <sup>4</sup> or Engineering Mathematics I	3
Semester Credit Hours		17

Summer		Semester Credit Hours
MART 200	Deck Sea Training I: Basic Communications, Navigation and Seamanship <sup>3</sup>	4
Semester Credit Hours		4

### Second Year

Fall		Semester Credit Hours
CHEM 227	Organic Chemistry I	3
CHEM 237	Organic Chemistry Laboratory	1
NVSC 200	Naval Science for the Merchant Marine Officer <sup>3</sup>	3

PHYS 201	College Physics	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 14

### Spring

CHEM 228	Organic Chemistry II	3
CHEM 238	Organic Chemistry Laboratory	1
ENGL 104	Composition and Rhetoric	3
MART 215	Seamanship II <sup>3,5</sup>	3
MART 303	Celestial Navigation <sup>3</sup>	3
PHYS 202	College Physics	4

Semester Credit Hours 17

### Summer

COMM 205	Communication for Technical Professions	3
ECON 203	Principles of Economics	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

Semester Credit Hours 9

### Third Year

Fall		Semester Credit Hours
MARB 303	Biostatistics <sup>2</sup>	4
MARB 315	Natural History of Vertebrates <sup>2</sup>	4
MART 210	Integrated Navigation I: RADAR/ARPA/ECDIS <sup>3</sup>	4
MART 212	Marine Dry Cargo Operations <sup>3</sup>	3
MART 321	Navigation Rules, International and Inland <sup>3</sup>	2
Semester Credit Hours		17

### Spring

MART 202	Ship Stability and Trim <sup>3</sup>	3
MART 307	Global Maritime Distress Safety System <sup>3</sup>	3
MART 310	Integrated Navigation II: Electronic Navigation <sup>3</sup>	2
MART 313	Marine Liquid Cargo Operations <sup>3</sup>	3
POLS 206	American National Government	3
Semester Credit Hours		14

### Summer

MART 300 or MART 350	Deck Sea Training II: Intermediate Communications, Navigation and Seamanship <sup>3</sup> or Deck Sea Training II – Commercial Internship	4
Semester Credit Hours		4

### Fourth Year

Fall		Semester Credit Hours
MARB 310	Introduction to Cell Biology <sup>2</sup>	4
MARB 425	Marine Ecology <sup>2</sup>	4
MART 410	Integrated Navigation III: Bridge Watchstanding <sup>3,5</sup>	2
POLS 207	State and Local Government	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
Semester Credit Hours		16
<b>Spring</b>		
MARB 311	Ichthyology <sup>2</sup>	4
MARB 435	Marine Invertebrate Zoology <sup>2,5</sup>	4
MART 208	Maritime Meteorology <sup>3</sup>	3
MART 498	Maritime Medical Care <sup>3,6</sup>	2
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		16
<b>Summer</b>		
MART 400	Deck Sea Training III: Advanced Communications, Navigation and Seamanship <sup>3</sup>	4
Semester Credit Hours		4
Total Semester Credit Hours		150

requirements outlined here, the cadet must also complete the following requirements to receive the degree:

- Successfully complete required sea service and minimum training cruise requirements
- Pass a comprehensive professional examination (either the Third Mate Unlimited-Oceans or Third Assistant Engineering Unlimited) administered by the U.S. Coast Guard (USCG).
- Successfully complete all competencies required by the International Convention on Standards for Training, Certification and Watchkeeping (STCW).

Note: STCW competency certifications expire 5 years after completion. If the cadet does not complete the degree within that time period, the cadet will be required to revalidate the expired competency prior to graduation.

- <sup>1</sup> A grade of C or better is required before advancing to upper level courses.
- <sup>2</sup> Indicates required courses in Marine Biology License Option major. These courses will be used to compute the major GPR.
- <sup>3</sup> Indicates license courses leading to a USCG/STCW license endorsement or sea time credit accrual which require a minimum grade of C (70%) or better to earn the endorsement or accrual. Students will be required to repeat the course until they earn a grade of C (70%) or better. MART 307 requires a grade of 75% or better.
- <sup>4</sup> Other calculus or logic elective may be substituted with approval.
- <sup>5</sup> Designated writing intensive course.
- <sup>6</sup> MART 498 must be taken within one year of graduation to receive USCG approval.

All electives must be chosen in consultation with, and approved by, the student's academic advisor. Unless courses are specifically listed, see University Core Curriculum at <http://core.tamu.edu/> for a listing of course options for Communication; Mathematics; Life and Physical Sciences; Language, Philosophy and Culture; Creative Arts; American History; Government and Political Sciences; and Social and Behavioral Sciences. The 3-hour University Core Curriculum requirement for International and Cultural Diversity may be met with courses used to satisfy other degree requirements. The 3-hour University Core Curriculum requirement for Cultural Discourse may be met with courses used to satisfy other degree requirements.

The total hours may be increased if the student is required to take remedial math, remedial English, foreign language or International and Cultural Diversity courses, or any of the six hour cruise options. The six hour cruise options (NAUT 200, NAUT 300 and NAUT 400 or MARR 200, MARR 300 and MARR 400) do not add any required hours to the degree plan.

This degree requires full participation in the Texas A&M University Maritime Academy Corps of Cadets as a qualified License Option cadet. Refer to the University catalog section on the Texas A&M Maritime Academy for additional information. In addition to the academic