

# 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 License Option program. 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 and all other requirements for the Third Mate in order to graduate from Texas A&M University. Certain United States Coast Guard courses require a minimum grade of C (70%).

## Program Requirements

### First Year

|                                 |   | Semester<br>Credit<br>Hours |
|---------------------------------|---|-----------------------------|
| <b>Fall</b>                     |   |                             |
| CHEM 119                        | Fundamentals of Chemistry I   | 4                           |
| MARB 101                        | Succeeding in Science <sup>1</sup>  | 3                           |
| MART 103                        | Basic Safety and Lifeboatman Training <sup>2</sup>                                | 3                           |
| MART 201                        | Vessel Structure and Ship Knowledge <sup>2</sup>                                  | 3                           |
| MATH 147<br>or MATH 151         | Calculus I for Biological Sciences<br>or Engineering Mathematics I                | 4                           |
| <b>Semester Credit Hours</b>    |   | <b>17</b>                   |
| <b>Spring</b>                   |   |                             |
| BIOL 111                        | Introductory Biology I <sup>1,3</sup>   | 4                           |
| CHEM 120                        | Fundamentals of Chemistry II  | 4                           |
| MARS 102                        | Earth and Ocean Science <sup>1</sup>  | 4                           |
| MART 115                        | Seamanship I <sup>2</sup>   | 3                           |
| MART 204                        | Terrestrial Navigation <sup>2</sup>   | 3                           |
| <b>Semester Credit Hours</b>    |   | <b>18</b>                   |
| <b>Summer</b>                   |   |                             |
| MART 200                        | Deck Sea Training I: Basic Communications, Navigation and Seamanship <sup>2</sup> | 4                           |
| <b>Semester Credit Hours</b>    |   | <b>4</b>                    |
| <b>Second Year</b>              |   |                             |
| <b>Fall</b>                     |   |                             |
| MARB 215                        | Marine Zoology <sup>1</sup>   | 4                           |
| NVSC 200                        | Naval Science for the Merchant Marine Officer <sup>2</sup>                        | 3                           |
| Select one of the following:    |   | 4                           |
| MATH 148                        | Calculus II for Biological Sciences   | 4                           |
| MATH 150                        | Functions, Trigonometry and Linear Systems  | 4                           |
| MATH 152                        | Engineering Mathematics II  | 4                           |
| Pathway elective <sup>1,4</sup> |   | 4                           |
| <b>Semester Credit Hours</b>    |   | <b>15</b>                   |

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| <b>Spring</b>  |  |           |
| ENGL 104   | Composition and Rhetoric   | 3         |
| MART 215   | Seamanship II <sup>2,5</sup>   | 3         |
| MART 303   | Celestial Navigation <sup>2</sup>  | 3         |
| Pathway elective <sup>1,4</sup>  |  | 4         |
| Pathway elective <sup>1,4</sup>  |  | 4         |
| <b>Semester Credit Hours</b>   |  | <b>17</b> |
| <b>Summer</b>  |  |           |
| ECON 202   | Principles of Economics  | 3         |
| Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communications">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communications</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         |
| <b>Semester Credit Hours</b>   |  | <b>9</b>  |
| <b>Third Year</b>  |  |           |
| <b>Fall</b>  |  |           |
| MARB 303   | Biostatistics <sup>1</sup>   | 4         |
| MART 210   | Integrated Navigation I: RADAR/ARPA/ECDIS <sup>2</sup>   | 4         |
| MART 212   | Marine Dry Cargo Operations <sup>2</sup>   | 3         |
| MART 321   | Navigation Rules, International and Inland <sup>2</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         |
| <b>Semester Credit Hours</b>   |  | <b>16</b> |
| <b>Spring</b>  |  |           |
| MART 202   | Ship Stability and Trim <sup>2</sup>   | 3         |
| MART 307   | Global Maritime Distress Safety System <sup>2</sup>  | 3         |
| MART 310   | Integrated Navigation II: Electronic Navigation <sup>2</sup>   | 2         |
| MART 313   | Marine Liquid Cargo Operations <sup>2</sup>  | 3         |
| POLS 206   | American National Government   | 3         |
| <b>Semester Credit Hours</b>   |  | <b>14</b> |
| <b>Summer</b>  |  |           |
| MART 300<br>or MART 350  | Deck Sea Training II: Intermediate Communications, Navigation and Seamanship <sup>2</sup><br>or Deck Sea Training II – Commercial Internship | 4         |
| <b>Semester Credit Hours</b>   |  | <b>4</b>  |
| <b>Fourth Year</b>   |  |           |
| <b>Fall</b>  |  |           |
| MARB 425   | Marine Ecology <sup>1</sup>  | 4         |
| MART 410   | Integrated Navigation III: Bridge Watchstanding <sup>2,5</sup>   | 2         |
| PHYS 201   | College Physics  | 4         |
| 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         |
| <b>Semester Credit Hours</b>   |  | <b>16</b> |

|  |  |            |
|--|--|------------|
| <b>Spring</b>  |  |            |
| MART 208   | Maritime Meteorology <sup>2</sup>  | 3          |
| MART 498   | Maritime Medical Care <sup>2,6</sup>   | 2          |
| PHYS 202   | 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          |
| Pathway elective <sup>1,4</sup>  |  | 4          |
| <b>Semester Credit Hours</b>   |  | <b>16</b>  |
| <b>Summer</b>  |  |            |
| MART 400   | Deck Sea Training III: Advanced Communications, Navigation and Seamanship <sup>2</sup> | 4          |
| <b>Semester Credit Hours</b>   |  | <b>4</b>   |
| <b>Total Semester Credit Hours</b>   |  | <b>150</b> |

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> Indicates required courses in Marine Biology License Option major. These courses will be used to compute the major GPR.

<sup>2</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>3</sup> A grade of C or better is required before advancing to upper level courses.

<sup>4</sup> Select one of the following pathways options for a total of 16 hours.

- Ecology: Take MARB 360, MARB 430, and select two of the following: MARB 311, MARB 315, MARB 435.
- Molecular: Take CHEM 227 and CHEM 237, CHEM 228 and CHEM 238, MARB 310, and select one of the following: MARB 311, MARB 315, MARB 435.

<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 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