

# MARINE ENGINEERING TECHNOLOGY - BS, LICENSE OPTION

## Program Requirements

### First Year

		Semester Credit Hours
<b>Fall</b>		
CHEM 107	General Chemistry for Engineering Students	3
CHEM 117	General Chemistry for Engineering Students Laboratory	1
ENGL 104	Composition and Rhetoric	3
MART 103	Basic Safety and Lifeboatman Training <sup>2</sup>	3
MARE 100	Marine Engineering Fundamentals	3
MATH 151	Engineering Mathematics I <sup>3</sup>	4
<b>Semester Credit Hours</b>		<b>17</b>

### Spring

MARE 111	Methods in Engineering Technology <sup>1</sup>	2
MARE 102	Engine Room Resource Management <sup>2</sup>	1
MARE 242	Manufacturing Methods I <sup>1,2</sup>	2
MATH 152	Engineering Mathematics II <sup>3</sup>	4
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences <sup>3</sup>	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
<b>Semester Credit Hours</b>		<b>16</b>

### Summer

MARE 200	Basic Operations <sup>1,2</sup>	4
<b>Semester Credit Hours</b>		<b>4</b>

### Second Year

		Semester Credit Hours
<b>Fall</b>		
MARE 112	Graphics for Engineering Technology <sup>1</sup>	2
MARE 202	Marine Thermodynamics <sup>1,3</sup>	3
MARE 205	Engineering Mechanics I <sup>1,3</sup>	3
MARE 243	Manufacturing Methods II <sup>1,2</sup>	1
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences <sup>3</sup>	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
<b>Semester Credit Hours</b>		<b>16</b>

### Spring

MARE 206	Engineering Mechanics II <sup>1,3</sup>	3
MARE 209	Mechanics of Materials <sup>1</sup>	3
MARE 211	Steam Propulsion Plants <sup>1,2</sup>	3

MARE 261	Engineering Analysis <sup>1</sup>	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 15**

### Summer

MARE 300 or MARE 350	Intermediate Operations <sup>1,2</sup> or Commercial Cruise Internship	4
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**Semester Credit Hours 4**

### Third Year

		Semester Credit Hours
<b>Fall</b>		
MARE 207	Electrical Power I <sup>1,2,3</sup>	3
MARE 305	Fluid Mechanics Theory <sup>1,2</sup>	4
MARE 313	Heat Transfer <sup>1</sup>	3
NVSC 200	Naval Science for the Merchant Marine Officer <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> )		3

**Semester Credit Hours 16**

### Spring

MARE 309	Marine Construction Materials <sup>1</sup>	3
MARE 312	Diesel Propulsion Plants <sup>1,2</sup>	3
MARE 306	Electrical Power II <sup>1,2</sup>	3
MARE 399	High Impact Experience in Marine Engineering Technology	0
MARE 401	Marine Auxiliary Systems <sup>1,2</sup>	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 15**

### Summer

MARE 400	Advanced Operations <sup>1,2</sup>	4
<b>Semester Credit Hours</b>		<b>4</b>

### Fourth Year

		Semester Credit Hours
<b>Fall</b>		
MARE 307	Marine Electronics <sup>1,2</sup>	3
MARE 405	Fundamentals of Naval Architecture <sup>1,2</sup>	3
MARE 451	Senior Design Project I <sup>1</sup>	2
MARE 482	License Preparation Seminar	1
POLS 206	American National Government	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> )		3

**Semester Credit Hours 15**

### Spring

MARE 402	Shipboard Automation and Control <sup>1,2</sup>	3
MARE 441	Engineering Economics and Project Management	3
MARE 452	Senior Design Project II <sup>1</sup>	2
MART 498	Maritime Medical Care <sup>2</sup>	2
POLS 207	State and Local Government	3

Technical elective <sup>1,5</sup>	3
<b>Semester Credit Hours</b>	<b>16</b>
<b>Total Semester Credit Hours</b>	<b>138</b>

<sup>1</sup> Indicates required courses in the Marine Engineering Technology License Option major. These courses will be used to compute the major GPA.

<sup>2</sup> Indicates license courses leading to a USCG/STCW license endorsement or sea time or workshops skills credit accrual which require a minimum grade of C (70%) or better to earn the endorsement or workshop skills accrual. Cadets will be required to repeat the course until they earn a grade of C (70%) or better. Failure to meet this requirement will prevent the student from continuing any sequence in which the course is a prerequisite.

<sup>3</sup> Students are required to earn a grade of C or better in MATH 151, MATH 152, PHYS 206, PHYS 207, PHYS 226, PHYS 227, MARE 202, MARE 205, MARE 206, and MARE 207. Failure to meet this requirement will prevent the student from continuing any sequence in which the course is a prerequisite.

<sup>4</sup> Designated Writing intensive course.

<sup>5</sup> Technical electives may be any course with the following prefixes: CSCE (<https://catalog.tamu.edu/undergraduate/course-descriptions/csce/>), MARE (<http://catalog.tamu.edu/undergraduate/course-descriptions/mare/>), MART (<http://catalog.tamu.edu/undergraduate/course-descriptions/mart/>), OCEN (<http://catalog.tamu.edu/undergraduate/course-descriptions/ocen/>), MATH (<http://catalog.tamu.edu/undergraduate/course-descriptions/math/>), PHYS (<http://catalog.tamu.edu/undergraduate/course-descriptions/phys/>), MARS (<http://catalog.tamu.edu/undergraduate/course-descriptions/mars/>), or OCNG (<http://catalog.tamu.edu/undergraduate/course-descriptions/ocng/>) at the 300 or 400 level in consultation with the student's advisor.

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 and the 3-hour University Core Curriculum requirement for Cultural Discourse may be met with courses used to satisfy other degree requirements. Although they may count for university credit, grades from an other institution below a C in engineering, mathematics and physics will not be accepted by the TAMUG engineering programs toward the degree.

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.

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 for the Texas A&M Maritime Academy for additional information. In addition to the academic 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.