### MARINE ENGINEERING TECHNOLOGY - BS

The Marine Engineering Technology (MARR) program is designed to prepare the student for a career as an engineering professional in the maritime industry. Students receive an education in applied engineering with a maritime focus. The MARR curriculum is a thermal power-oriented specialization of a classical Mechanical Engineering Technology program. A thorough preparation in mathematics, science, and engineering courses is the foundation for further study in ship propulsion plants, electrical power generation and distribution equipment. Marine Engineering Technology focuses on power cycles, principles, and methods used to convert various forms of energy into useful power. The Maritime industry is moving toward clean energy production onboard its vessels. The use of alternative fuels and Hybrid Energy Storage Systems (HESS) is becoming common. The curriculum explores the selection and operation of the major components and support systems in the power cycle. Courses in marine engineering are supplemented with studies in automation and control systems, naval architecture and the maritime application of electrical engineering fundamentals. The students' education is enhanced through the use of computer simulation of propulsion plants and direct operation of marine machinery aboard the University's training ship. Students who wish to pursue USCG license should enroll in the license option. Marine Engineering Technology (MARR) Program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org (http://www.abet.org/).

### Program Requirements

#### First Year

**Fall**

- **CHEM 107** General Chemistry for Engineering Students 3
- **CHEM 117** General Chemistry for Engineering Students Laboratory 1
- **ENGL 104** Composition and Rhetoric 3
- **MARE 100** Marine Engineering Fundamentals 1 3
- **MARE 242** Manufacturing Methods I 1 2
- **MATH 151** Engineering Mathematics I 2 4

#### Spring

- **MARE 111** Methods in Engineering Technology 1 1 2
- **MATH 152** Engineering Mathematics II 4
- **PHYS 206 & PHYS 226** Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences 4

American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) 3

Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) 3

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<th>Semester Credit Hours</th>
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#### Second Year

**Fall**

- **MARE 112** Graphics for Engineering Technology 1 2
- **MARE 202** Marine Thermodynamics 1,2 3
- **MARE 205** Engineering Mechanics I 1,2 3
- **MARE 243** Manufacturing Methods II 1
- **PHYS 207 & PHYS 227** Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences 4

Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) 3

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**Spring**

- **MARE 206** Engineering Mechanics II 1,2 3
- **MARE 209** Mechanics of Materials 1 3
- **MARE 211** Steam Propulsion Plants 3
- **MARE 261** Engineering Analysis 1 3

American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) 3

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#### Third Year

**Fall**

- **MARE 207** Electrical Power I 1,2 3
- **MARE 305** Fluid Mechanics Theory 1 4
- **MARE 313** Heat Transfer 1 3
- **POLS 207** State and Local Government 3
- **Technical elective 1,3** 3

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**Spring**

- **MARE 306** Electrical Power II 1 3
- **MARE 309** Marine Construction Materials 1 3
- **MARE 312** Diesel Propulsion Plants 1 3
- **MARE 399** High Impact Experience in Marine Engineering Technology 0
- **MARE 441** Engineering Economics and Project Management 1 3

Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) 3

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#### Fourth Year

**Fall**

- **MARE 307** Marine Electronics 1 3
- **MARE 405** Fundamentals of Naval Architecture 1,4 3
- **MARE 451** Senior Design Project I 1 2
- **MARE 481** Seminar 1
- **POLS 206** American National Government 3
- **MARE elective 1,5** 3

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**Spring**

- **MARE 402** Shipboard Automation and Control 1 3

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<td>Course</td>
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<td>MARE 452</td>
<td>Social and behavioral sciences</td>
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<td>MARE elective</td>
<td>Technical elective</td>
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**Semester Credit Hours**

14

**Total Semester Credit Hours**

123

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/](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 another institution below a C in engineering, mathematics and physics will not be accepted by the TAMUG engineering technology program toward the degree.

1 Indicates required courses in Marine Engineering major. These courses will be used to compute the major GPA.

2 MARR students are required to earn a grade of C or better in MATH 151, PHYS 206, PHYS 207, 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. Although they may count for credit, grades from another institution below a C in engineering, mathematics and physics will not be accepted by the TAMUG engineering programs toward the degree.


4 Designated Writing intensive course.

5 Students may take any of the 400-level courses (except MARE 402 and MARE 405) offered by the Marine Engineering Department in their senior year including standard courses such as MARE 401 which are offered to license option students.

The total hours may be increased if the student is required to take remedial math, remedial English, computer science, foreign language or if the creative arts; language, philosophy and culture or social science requirements do not fulfill the International and Cultural Diversity requirement.