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		**Semester Credit Hours**
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
	Semester Credit Hours	**16**
Spring		
MARE 111	Methods in Engineering Technology [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 [2]	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
	Semester Credit Hours	**16**
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 [2]	4
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication)		3
	Semester Credit Hours	**16**
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
	Semester Credit Hours	**15**
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
	Semester Credit Hours	**16**
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
	Semester Credit Hours	**15**
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
	Semester Credit Hours	**15**
Spring		
MARE 402	Shipboard Automation and Control [1]	3

MARE 452	Senior Design Project II [1,4]	2
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences)		3
MARE elective [1,5]		3
Technical elective [1,3]		3
	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/ 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 Required to earn a grade of C or better in MATH 151, 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. 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.

3 Technical electives may be any course with the following prefixes: MARE (http://catalog.tamu.edu/undergraduate/course-descriptions/mare/), MARS (http://catalog.tamu.edu/undergraduate/course-descriptions/mars/), MART (http://catalog.tamu.edu/undergraduate/course-descriptions/mart/), OCEN (http://catalog.tamu.edu/undergraduate/course-descriptions/ocen/), CVEN (http://catalog.tamu.edu/undergraduate/course-descriptions/cven/), MATH (http://catalog.tamu.edu/undergraduate/course-descriptions/math/), PHYS (http://catalog.tamu.edu/undergraduate/course-descriptions/phys/), or OCNG (http://catalog.tamu.edu/undergraduate/course-descriptions/ocng/) in consultation with the student's advisor. At least one elective must be at the 300 or 400 level.

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.