

MARINE ENGINEERING TECHNOLOGY (BS)

Offered at: Solano Campus

The Marine Engineering Technology (MET) major provides an undergraduate education for marine engineers employed aboard commercial and military vessels. The curriculum provides a foundation in the engineering fundamentals of shipboard mechanical and electrical systems, as well as practical training in the operation and maintenance of steam, motor, and gas turbine propulsion plants.

The MET curriculum includes three practical training experiences; two sea training periods aboard Training Ship *Golden Bear* and one sea training period aboard a military or commercial vessel. The MET program also requires satisfactory completion of a qualifying examination administered by the U.S. Coast Guard to become a Third Assistant Engineer, Steam and Motor Vessels, Unlimited Horsepower.

Program Learning Objectives

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline.
2. An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline.
3. An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.
4. An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes.
5. An ability to function effectively as a member as well as a leader on technical teams.

Degree Requirements and Curriculum

In addition to the program requirements listed on this page, students must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation (<https://catalog.calpoly.edu/academic-standards-policies/general-requirements-bachelors-degree/>) section of this catalog, including:

- 40 units of upper-division courses
- 2.0 GPA
- Graduation Writing Requirement (GWR)
- U.S. Cultural Pluralism (USCP)

Note: No Major, Support or Concentration courses may be selected as credit/no credit. In addition, no more than 12 units of cooperative or internship courses can count towards your degree requirements.

Code	Title	Units
MAJOR COURSES		
COM 2220L	Programming Applications for Engineering Technology Lab	1
CRU 1150	Sea Training I - Engine	8
CRU 2250	Sea Training II - Engine	8
CRU 3350	Sea Training III - Engine	8
EPO 1110	Plant Operations I	1
EPO 1125 & 1125L	Introduction to Marine Engineering and Introduction to Marine Engineering Laboratory	4
EPO 2210	Plant Operations II	1
EPO 2213	Welding Laboratory	1
EPO 2214	Boilers	3
EPO 2215	Manufacturing Processes I	1
EPO 2217	Shipboard Medical	1
EPO 2220 & 2220L	Diesel Engineering I and Diesel Engineering I Laboratory	2
EPO 2230	Steam Plant System Operations	1
EPO 2235	Steam Plant Watch Team Management	1
EPO 3310	Plant Operations III	1
EPO 3312	Turbines	3
EPO 3315	Manufacturing Processes II	1

EPO 3322 & 3322L	Diesel Engineering II/Simulator and Diesel Engineering II/Simulator Laboratory	2
ET 1110	Introduction to Engineering Technology	1
ET 2230	Properties of Materials	2
ET 2230L	Properties of Materials Laboratory	1
ET 2232	Statics	3
ET 2250 & 2250L	Electrical Circuits and Electrical Circuits Laboratory	4
ET 3330	Dynamics	3
ET 3332	Strength of Materials	3
ET 3340 & 3340L	Fluid Mechanics and Fluid Mechanics Laboratory	4
ET 3342 & 3342L	Refrigeration and Air Conditioning and Refrigeration and Air Conditioning Laboratory	3
ET 3344	Thermodynamics	3
ET 3350 & 3350L	Electrical Machinery and Electrical Machinery Laboratory	4
ET 3370 & 3370L	Electronics and Electronics Laboratory	4
ET 4400 & 4400L	Instrumentation and Measurement and Instrumentation and Measurement Laboratory	4
ET 4460 & 4460L	Automation and Automation Laboratory	4
ET 4470	Engineering Management	3
ET 4490 & 4490L	Power Engineering Technology and Power Engineering Technology Laboratory	4

SUPPORT COURSES

CHE 1110 & 1110L	General Chemistry and General Chemistry Laboratory (5A & 5C) ¹	4
DL 1105 & 1105L	Marine Survival and Marine Survival Laboratory	2
DL 1105X	United States Coast Guard Lifeboatman's Exam	0
EGL 1100	English Composition (1A) ¹	3
EGL 1110	Speech Communication (1C) ¹	3
EGL 2220	Critical Thinking (1B) ¹	3
ENG 1100	Engineering Graphics	2
ENG 3310	Engineering Ethics (Upper-Division 4) ¹	3
ENG 4430	Naval Architecture	3
FF 1100	Basic Marine Firefighting	0
FF 3300	Advanced Marine Firefighting	0
GOV 2200	American Government (4A) ¹	3
LIB 1100	Information Fluency in the Digital World	2
MTH 2210	Calculus I (2) ¹	4
MTH 2211	Calculus II	4
NAU 1104	Shipboard Security and Responsibility	1
PE 1101	Swim Competency Exam ²	0
PHY 2200 & 2200L	Engineering Physics I and Engineering Physics I Laboratory	4
PHY 2205 & 2205L	Engineering Physics II and Engineering Physics II Laboratory	4

GENERAL EDUCATION (GE)

(See GE program requirements below)

21

FREE ELECTIVES

Free Electives

0

Total Units
164
¹ Required in Major or Support; also satisfies General Education (GE) requirement.

² Swim assessments are required of all cadets during Orientation week. If PE 1101 is not passed with a grade CR, then enrollment in PE 1102 will be required.

General Education (GE) Requirements

General Education (GE) Requirements

- 43 units required, 22 of which are specified in Major and/or Support.
- If any of the remaining 21 Units is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.
- See the complete GE course listing (<https://catalog.calpoly.edu/academic-standards-policies/general-requirements-bachelors-degree/#generaleducationtext>).
- A grade of C- or better is required in one course in each of the following GE Areas: 1A (English Composition), 1B (Critical Thinking), 1C (Oral Communication), and 2 (Mathematics and Quantitative Reasoning).

Lower-Division General Education

Area 1	English Communication and Critical Thinking	
1A	Written Communication (3 units in Support) ¹	0
1B	Critical Thinking (3 units in Support) ¹	0
1C	Oral Communication (3 units in Support) ¹	0
Area 2	Mathematics and Quantitative Reasoning	
2	Mathematics and Quantitative Reasoning (3 units in Support) ¹	0
Area 3	Arts and Humanities	
3A	Arts	3
3B	Humanities: Literature, Philosophy, Languages other than English	3
Area 4	Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.)	
4A	American Institutions (Title 5, Section 40404 Requirement) (3 units in Support) ¹	0
4B	Social and Behavioral Sciences	3
Area 5	Physical and Life Sciences	
5A	Physical Sciences (3 units in Support) ¹	0
5B	Life Sciences	3
5C	Laboratory (may be embedded in a 5A or 5B course) (1 units in Support) ¹	0
Area 6	Ethnic Studies	
6	Ethnic Studies	3

Upper-Division General Education

Upper-Division 2/5	Mathematics and Quantitative Reasoning or Physical and Life Sciences	3
Upper-Division 3	Arts and Humanities	3
Upper-Division 4	Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.) (3 units in Support) ¹	0

Total Units
21
¹ Required in Major or Support; also satisfies General Education (GE) requirement.

Coming soon