FACILITIES ENGINEERING TECHNOLOGY (BS)

Offered at: Solano Campus

The Facilities Engineering Technology major provides an undergraduate education for industrial engineers employed in large-scale facilities; commercial buildings, power plants and manufacturing facilities. The curriculum provides a foundation in the fundamentals of mechanical and electrical system engineering, as well as practical training in the operation and maintenance of real-world commercial and industrial facilities.

The curriculum includes three practical training experiences; one sea training period aboard Training Ship *Golden Bear* and two industry co-operative education opportunities.

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		
CEP 2270	Facilities Engineering Technology Industry Cooperative I	3
CEP 3370	Facilities Engineering Technology Industry Cooperative II	3
COM 2220L	Programming Applications for Engineering Technology Lab	1
CRU 1150	Sea Training I - 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 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 3319	Facilities Engineering Diagnostics Laboratory	1
EPO 3321	Introduction to Power Generation Plants	1
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 4442 & 4442L	Heating, Ventilation, and Air Conditioning and Heating, Ventilation, and Air Conditioning Laboratory	3
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
CHE 2205	Chemistry of Power Plant Processes	3
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 4472	Facilities Management	3
FF 1100	Basic 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	**159**

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

- 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 Major) [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 Major) [1]	0
Total Units		**21**

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

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