

ENVIRONMENTAL ENGINEERING (BS)

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 or Support 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 | | |
| ENVE 1111 | Introduction to Environmental Engineering | 1 |
| ENVE/CE 1112 | Spatial Visualization and Drawing | 3 |
| ENVE/CE 2251 | Computational Applications in Civil and Environmental Engineering | 2 |
| ENVE 2325 | Air Quality Engineering and Measurements | 4 |
| ENVE 2331 | Fundamentals of Environmental Engineering | 2 |
| ENVE 3309 | Noise Control and Occupational Safety and Health | 3 |
| ENVE/CE 3336 | Environmental Fluid Mechanics and Hydraulic Systems | 4 |
| ENVE/CE 3337 | Water Resources & Environmental Engineering | 4 |
| ENVE 3450 | Sustainable Systems Engineering | 3 |
| ENVE 3434 | Chemistry of Environmental Systems | 4 |
| ENVE 3421 | Transfer Phenomena and Process Thermodynamics | 4 |
| ENVE 3438 | Water and Wastewater Treatment Design | 4 |
| ENVE/CE 3465 | Infrastructure Systems | 2 |
| ENVE 4437 | Fate, Transport & Control of Environmental Pollutants | 3 |
| ENVE 4439 | Solid and Hazardous Waste Management | 3 |
| ENVE 4466 | Senior Project Design I | 2 |
| ENVE 4467 | Senior Project Design II | 2 |
| Technical Electives | | |
| Select from the following: | | 13 |
| A minimum of 6 units of any 3000, 4000, or 5000 level ENVE class not taken to satisfy other curriculum requirements, with the following exceptions: ENVE 5500, ENVE 5591 & ENVE 5592, ENVE 5597, ENVE 5599, or classes that satisfy a General Education requirement. ² | | |
| A minimum of 6 units from the following: | | |
| CE 3321 | Fundamentals of Transportation Engineering | |
| CE 3352 | Structural Analysis | |
| CE 3375 | Fundamentals of Construction Engineering and Management | |
| CE 3381 | Geotechnical Engineering | |
| CE 4400 | Special Problems ² | |
| CE 4413 | Advanced Civil Computer-Aided Site Design | |
| CE 4433 | Open Channel Hydraulics | |
| CE 4434 | Groundwater Hydraulics and Hydrology | |
| CE 4435 | Engineering Hydrology and Stormwater Management | |
| CE 4440 | Hydraulic Systems Engineering | |
| CE 4474 | Environmental Compliance and Permitting | |
| CE 4475 | Mechanical, Electrical, and Energy Systems in Buildings | |
| CE 5536 | Advanced Modeling in Water Resources | |
| CE 5537 | Groundwater Contamination | |

| | | |
|-------------------------------------|--|------------|
| CE 5538 | Urban Water Systems | |
| CE 5539 | Environmental Hydraulics | |
| CE 5541 | Extreme Events and Climate Change in Water Resources | |
| SUPPORT COURSES | | |
| CHEM 1120 | Fundamentals of Chemical Structure and Properties (5A & 5C) ¹ | 4 |
| CHEM 1122 | Fundamentals of Chemical Reactivity | 4 |
| ENGR 2211 | Introduction to Mechanics | 4 |
| MATH 1261 | Calculus I (2) ¹ | 4 |
| MATH 1262 | Calculus II | 4 |
| MATH 2341 | Linear Analysis | 4 |
| MCRO 2221 | Introduction to Microbiology (5B) ¹ | 4 |
| PHYS 1141 | General Physics I | 4 |
| PHYS 1143 | General Physics II | 4 |
| STAT 3210 | Engineering Statistics (Upper-Division 2/5) ¹ | 3 |
| GENERAL EDUCATION (GE) | | |
| (See GE program requirements below) | | 30 |
| FREE ELECTIVES | | |
| Free Electives | | 0 |
| Total Units | | 132 |

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

² A combined maximum of 4 units from ENVE 4400, ENVE 4405, and ENVE 4407 may count towards technical electives.

General Education (GE) Requirements
General Education (GE) Requirements

- 43 units required, 13 of which are specified in Major and/or Support.
- If any of the remaining 30 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 |
| 1B | Critical Thinking | 3 |
| 1C | Oral Communication | 3 |
| 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 |
| 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 units in Support) ¹ | 0 |
| 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 units in Support) ¹ | 0 |
| 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 |
| Total Units | | 30 |

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