

CIVIL 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)

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 | | |
| CE 1111 | Introduction to Civil Engineering | 1 |
| CE/ENVE 1112 | Spatial Visualization and Drawing | 3 |
| CE 2251 | Computational Applications in Civil and Environmental Engineering | 2 |
| CE 2259 | Civil Engineering Materials | 3 |
| CE 3321 | Fundamentals of Transportation Engineering | 4 |
| CE/ENVE 3336 | Environmental Fluid Mechanics and Hydraulic Systems | 4 |
| CE/ENVE 3337 | Water Resources & Environmental Engineering | 4 |
| CE 3352 | Structural Analysis | 4 |
| CE 3355 | Reinforced Concrete Design | 3 |
| CE 3375 | Fundamentals of Construction Engineering and Management | 4 |
| CE 3381 | Geotechnical Engineering | 4 |
| CE/ENVE 3465 | Infrastructure Systems | 2 |
| CE 4466 | Senior Design Project I | 1 |
| CE 4467 | Senior Design Project II | 3 |
| Technical Electives | | |
| Select from the following: | | 18 |
| Select any 4000-5000 level CE or ENVE course not required in major | | |
| SUPPORT COURSES | | |
| CHEM 1120 | Fundamentals of Chemical Structure and Properties (5A & 5C) ¹ | 4 |
| ENGR 2211 | Introduction to Mechanics | 4 |
| ENGR 2212 | Introduction to Engineering Dynamics | 2 |
| GEOL 2240 | Physical Geology | 3 |
| MATH 1261 | Calculus I (2) ¹ | 4 |
| MATH 1262 | Calculus II | 4 |
| MATH 2263 | Calculus III | 3 |
| MATH 2341 | Linear Analysis | 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) | | 33 |
| FREE ELECTIVES | | |
| Free Electives | | 0 |
| Total Units | | 132 |

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

General Education (GE) Requirements

General Education (GE) Requirements

- 43 units required, 10 of which are specified in Major and/or Support.
- If any of the remaining 33 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 |
| 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 | | 33 |

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