

BS CONSTRUCTION MANAGEMENT

Program Learning Outcomes

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline.
3. Create a construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedules.
6. Analyze professional decisions based on ethical principles.
7. Analyze construction documents for planning and management of construction processes.
8. Analyze methods, materials, and equipment used to construct projects.
9. Apply construction management skills as a member of a multidisciplinary team.
10. Apply electronic-based technology to manage the construction process.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
13. Understand construction risk management.
14. Understand construction accounting and cost control.
15. Understand construction quality assurance and control.
16. Understand construction project control processes.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the basic principles of sustainable construction.
19. Understand the basic principles of structural behavior.
20. Understand the basic principles of mechanical, electrical and piping systems.
21. Understand the role construction managers play in enhancing the needs of society.
22. Understand the importance of creating and planning for continuing education and lifelong learning.
23. Understand the key leadership characteristics that are successful in building and strengthening construction management teams.
24. Understand the importance of recognizing cultural differences and the role culture plays in influencing project success for a construction team.
25. Understand the benefits of respecting the unique and diverse backgrounds individuals bring to a construction team.

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/generalrequirementsbachelorsdegree/#generaleducationtext>) section of this catalog, including:

- 60 units of upper-division courses
- Graduation Writing Requirement (GWR)

- 2.0 GPA
- U.S. Cultural Pluralism (USCP)

Note: No Major or Support courses may be selected as credit/no credit.

MAJOR COURSES

| | | |
|--------|--|---|
| CM 102 | Introduction to Construction Management | 2 |
| CM 113 | Construction Materials and Assemblies | 2 |
| CM 114 | Construction Materials and Assemblies Lab | 2 |
| CM 115 | Fundamentals of Construction Management | 6 |
| CM 214 | Residential Construction Management | 5 |
| CM 232 | Evaluation of Cost Alternatives | 3 |
| CM 280 | Building Information Modeling | 2 |
| CM 313 | Commercial Construction Management | 5 |
| CM 314 | Heavy Civil Construction Management | 5 |
| CM 317 | Sustainability and the Built Environment (Upper-Division B) ¹ | 4 |
| CM 318 | Housing and Communities (Upper-Division D) ¹ | 4 |
| CM 334 | Construction Law | 2 |
| CM 335 | Construction Accounting | 2 |
| CM 411 | Specialty Contracting Construction Management | 5 |
| CM 413 | Jobsite Construction Management | 5 |
| CM 443 | Management of the Construction Firm | 3 |
| CM 450 | Integrated Project, Design and Program Management | 5 |
| CM 460 | Senior Project Methodology | 2 |
| CM 461 | Senior Project I | 1 |
| CM 462 | Senior Project II | 1 |

Technical Electives

| | | |
|----------------------------|--|---|
| Select from the following: | | 8 |
| CE 413 | Advanced Civil Computer-Aided Site Design | |
| CE 429 | Highway Pavement Designs | |
| CE 474 | Environmental Compliance and Permitting | |
| CM 420 | Service / Experiential Learning | |
| CM 421 | Emerging Trends | |
| CM 422 | Professional Preparation | |
| CM 423 | Construction Materials / Assemblies | |
| CM 424 | Construction Technology | |
| CM 425 | Sustainability and Environment | |
| CM 426 | International Construction Studies | |
| CM 475 | Real Property Development Principles | |
| CM 485 | Cooperative Education Experience (6 units maximum) | |

SUPPORT COURSES

| | |
|---|---|
| Select from the following: | 6 |
| ARCE 211 & ARCE 212 | Structures I and Structures II (3, 3) |
| ME 211 & CE 204 | Engineering Statics and Mechanics of Materials I (3, 3) |
| ARCE 226 | Introduction to Structural Systems |
| ARCE 315 | Introduction to Structural Design |
| ARCE 421 | Soil Mechanics |
| BRAE 239 | Engineering Surveying |
| or CM 239 | Construction Surveying |
| BUS 207 | Legal Responsibilities of Business |
| BUS 212 | Financial Accounting for Nonbusiness Majors |
| or BUS 214 | Financial Accounting |
| BUS 215 | Managerial Accounting |
| ECON 201 | Survey of Economics (D2) ¹ |
| EDES 123 | Principles of Environmental Design (E) ¹ |
| ENGL 310 | Corporate Communication (GWR) |
| GEOL 201 | Physical Geology |
| MATH 141 | Calculus I (B4) ¹ |
| MATH 182 | Calculus for Architecture and Construction Management (GE Electives) ^{1,2} |
| PHYS 141 | General Physics I |
| Select from the following: | 4 |
| PHYS 142 | General Physics II (B1 & B3) ¹ |
| CHEM 124 | General Chemistry for Physical Science and Engineering I (B1 & B3) ¹ |
| CHEM 127 | General Chemistry for Agriculture and Life Science I (B1 & B3) ¹ |
| STAT 251 | Statistical Inference for Management I |
| or STAT 312 | Statistical Methods for Engineers |
| Select any upper-division (300-400 level) BUS, ECON, ITP course | 4 |
| GENERAL EDUCATION (GE) | |
| (See GE program requirements below.) | 44 |
| FREE ELECTIVES | |
| Free Electives | 0 |
| Total units | 189 |

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

² MATH 142 Calculus II substitutes for MATH 182.

General Education (GE) Requirements

- 72 units required, 28 of which are specified in Major and/or Support.
- If any of the remaining 44 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/generalrequirementsbachelorsdegree/#generaleducationtext>).
- A grade of C- or better is required in one course in each of the following GE Areas: A1 (Oral Communication), A2 (Written

Communication), A3 (Critical Thinking), and B4 (Mathematics/Quantitative Reasoning).

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|---|--|-----------|
| Area A | English Language Communication and Critical Thinking | |
| A1 | Oral Communication | 4 |
| A2 | Written Communication | 4 |
| A3 | Critical Thinking | 4 |
| Area B | Scientific Inquiry and Quantitative Reasoning | |
| B1 | Physical Science (4 units in Support) ¹ | 0 |
| B2 | Life Science | 4 |
| B3 | One lab taken with either a B1 or B2 course | |
| B4 | Mathematics/Quantitative Reasoning (4 units in Support) ¹ | 0 |
| Upper-Division B (4 units in Major) ¹ | | 0 |
| Area C | Arts and Humanities | |
| Lower-division courses in Area C must come from three different subject prefixes. | | |
| C1 | Arts: Arts, Cinema, Dance, Music, Theater | 4 |
| C2 | Humanities: Literature, Philosophy, Languages other than English | 4 |
| Lower-Division C Elective - Select a course from either C1 or C2 | | 4 |
| Upper-Division C | | 4 |
| Area D | Social Sciences - Select courses in Area D from at least two different prefixes | |
| D1 | American Institutions (Title 5, Section 40404 Requirement) | 4 |
| D2 | Lower-Division D (4 units in Support) ¹ | 0 |
| Upper-Division D (4 units in Major) ¹ | | 0 |
| Area E | Lifelong Learning and Self-Development | |
| Lower-Division E (4 units in Support) ¹ | | 0 |
| Area F | Ethnic Studies | |
| F | Ethnic Studies | 4 |
| GE Electives in Areas B, C, and D | | |
| Select courses from two different areas; may be lower-division or upper-division courses. | | |
| GE Electives (4 units in Support plus 4 units in GE) ¹ | | 4 |
| Total units | | 44 |

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