

# CONSTRUCTION MANAGEMENT (BS)

Offered at: San Luis Obispo Campus

The professional constructor plays the central role in building and maintaining the infrastructure of this country and in markets around the world, making significant contributions throughout the planning, design, construction, and facilities management phases of major projects. The curriculum of the Construction Management program is specifically designed to prepare students to fill this essential role. Building on a solid foundation in architecture, engineering, and business, the curriculum introduces students to construction methods and materials; to the techniques used to manage budgets, schedules, quality, and safety; to the varied contracting approaches used to deliver today's complex construction projects; and to the leadership and teamwork skills demanded by this profession. This curricular content is delivered in a unique, project-based environment that explores how these management principles are applied in each of the construction sectors, such as, commercial building, residential, heavy/civil, industrial, and specialty.

## Program Learning Objectives

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 methods, materials, and equipment used to construct projects.
8. Apply electronic-based technology to manage the construction process.
9. Apply basic surveying techniques for construction layout and control.
10. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
11. Understand construction accounting and cost control.
12. Understand construction quality assurance and control.
13. Understand construction project control processes.
14. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
15. Understand the basic principles of sustainable construction.
16. Understand the basic principles of structural behavior.
17. Understand the basic principles of mechanical, electrical and plumbing systems.
18. Understand the role construction managers play in enhancing the needs of society.
19. Understand the importance of creating and planning for continuing education and lifelong learning.
20. Understand the key leadership characteristics that are successful in building and strengthening construction management teams.
21. Understand the importance of recognizing culture differences and the role culture plays on influencing project success for a construction team.
22. 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/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
<b>MAJOR COURSES</b>		
CM 1113	Construction Materials and Assemblies	2
CM 1114	Mechanical, Electrical, and Plumbing Construction Materials and Assemblies	2
CM 1115	Fundamentals of Construction Management	4

CM 1280	Fundamentals of Virtual Design and Construction Management	3
CM 1413	Jobsite Construction Management	3
CM 2113	Soil Analysis and Construction of Foundations & Temporary Structures	2
CM 2114	Principles of Mechanical, Electrical, and Plumbing Building Systems	2
CM 2239	Construction Surveying	3
CM 3214	Residential Construction Management	4
CM 3313	Commercial Construction Management	4
CM 3314	Heavy Civil Construction Management	4
CM 3317	Sustainability and the Built Environment (Upper-Division 2/5) <sup>1</sup>	3
CM 3318	Housing and Communities (Upper-Division 4) <sup>1</sup>	3
CM 3334	Construction Law	2
CM 3335	Construction Economics, Finance, and Accounting	3
CM 4411	Specialty Contracting Construction Management	4
CM 4420	Professional Preparation	4

Select from the following: 3

ARCH 4415	Topics in Design	
ARCH 4435	Advanced Topics in Architectural Representation	
CM 4421	Interdisciplinary Practices	
CM 4475	Real Property Development Principles	
CRP 3303	Smart Cities	
CRP 3334	Cities in a Global World	
CRP 4325	Planning for Bicycling and Walking	
CRP 4433	Latino Urbanism	
CRP 4442	Planning and Housing	
CRP 4445	Green Infrastructure	
CRP 4455	Transportation Policy and Planning	
CRP 4458	Hazard Mitigation Planning and Resilient Design	
CRP 4481	Urban Design and Real Estate Development Case Studies	
LA 3304	Contemporary Issues in Cultural Landscapes	
LA 4410	Sustainability, Resilience, and Climate Ecology in Design	
LA 4413	Social Equity and Design	
LA 4417	Social and Behavioral Factors for Landscape Architecture	
LA 4418	Contemporary Issues in Landscape Architecture	
CM 4443	Management of the Construction Firm	2
CM 4450	Integrated Facility Development, Design, Construction, and Operations	3
CM 4461	Senior Project I	3
CM 4462	Senior Project II	3

#### SUPPORT COURSES

ARCE 1121	Structural Principles I	3
ARCE 3301	Introduction to Structural Systems	4
BUS 2207	Legal Responsibilities of Business	3
BUS 2212	Financial Accounting for Nonbusiness Majors	3
or BUS 2214	Financial Accounting	

Select from the following: 3

BUS 2215	Managerial Accounting	
or any 3000-4000 level BUS course		
ECON 2001	Survey of Economics (4B) <sup>1</sup>	3
EDES 1123	Place, People, and the Built Environment	3
MATH 1261	Calculus I (2) <sup>1</sup>	4
PHYS 1141	General Physics I (5A & 5C) <sup>1</sup>	4

#### GENERAL EDUCATION

(See GE program requirements below)

**FREE ELECTIVES**

Free Electives	0
<b>Total Units</b>	<b>123</b>

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

## General Education (GE) Requirements

- 43 units required, 16 of which are specified in Major and/or Support.
- If any of the remaining 27 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**

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

**Upper-Division General Education**

Upper-Division 2/5	Mathematics and Quantitative Reasoning or Physical and Life Sciences (3 units in Major) <sup>1</sup>	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 units in Major) <sup>1</sup>	0

<b>Total Units</b>		<b>27</b>
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<sup>1</sup> Required in Major or Support; also satisfies General Education (GE) requirement.

**Coming soon**