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.
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 (http://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext) section of this catalog, including:
- 60 units of upper division courses
- Graduation Writing Requirement (GWR)

MAJOR COURSES
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM 102</td>
<td>Introduction to Construction Management</td>
<td>2</td>
</tr>
<tr>
<td>CM 113</td>
<td>Construction Materials and Assemblies</td>
<td>2</td>
</tr>
<tr>
<td>CM 114</td>
<td>Construction Materials and Assemblies Lab</td>
<td>2</td>
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<tr>
<td>CM 115</td>
<td>Fundamentals of Construction Management</td>
<td>6</td>
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<tr>
<td>CM 214</td>
<td>Residential Construction Management</td>
<td>5</td>
</tr>
<tr>
<td>CM 232</td>
<td>Evaluation of Cost Alternatives</td>
<td>3</td>
</tr>
<tr>
<td>CM 280</td>
<td>Building Information Modeling</td>
<td>2</td>
</tr>
<tr>
<td>CM 313</td>
<td>Commercial Construction Management</td>
<td>5</td>
</tr>
<tr>
<td>CM 314</td>
<td>Heavy Civil Construction Management</td>
<td>5</td>
</tr>
<tr>
<td>CM 317</td>
<td>Sustainability and the Built Environment (Area B7)</td>
<td>4</td>
</tr>
<tr>
<td>CM 318</td>
<td>Housing and Communities (D5)</td>
<td>4</td>
</tr>
<tr>
<td>CM 334</td>
<td>Construction Law</td>
<td>2</td>
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<tr>
<td>CM 335</td>
<td>Construction Accounting</td>
<td>2</td>
</tr>
<tr>
<td>CM 411</td>
<td>Specialty Contracting Construction Management</td>
<td>5</td>
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<tr>
<td>CM 413</td>
<td>Jobsite Construction Management</td>
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<tr>
<td>CM 443</td>
<td>Management of the Construction Firm</td>
<td>3</td>
</tr>
<tr>
<td>CM 450</td>
<td>Integrated Project, Design and Program Management</td>
<td>5</td>
</tr>
<tr>
<td>CM 460</td>
<td>Senior Project Methodology</td>
<td>2</td>
</tr>
<tr>
<td>CM 461</td>
<td>Senior Project I</td>
<td>1</td>
</tr>
<tr>
<td>CM 462</td>
<td>Senior Project II</td>
<td>1</td>
</tr>
</tbody>
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Technical Electives
Select from the following: 8

- 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 485 Cooperative Education Experience (6 units maximum)

SUPPORT COURSES
Select from the following: 6

- ARCE 211 Structures I
- ARCE 212 Structures II (3, 3)
- ME 211 Engineering Statics
- ME 204 and Mechanics of Materials I (3, 3)
- ARCE 226 Introduction to Structural Systems 3

Note: No major or support courses may be selected as credit/no credit.
ARCE 315  Introduction to Structural Design  4
ARCE 421  Soil Mechanics  3
BRAE 239  Engineering Surveying  4
or CM 239  Construction Surveying
BUS 207  Legal Responsibilities of Business  4
BUS 214  Financial Accounting  4
BUS 215  Managerial Accounting  4
ECON 201  Survey of Economics (D2)  4
EDES 123  Principles of Environmental Design (E)  4
ENGL 310  Corporate Communication (GWR)  4
GEOL 201  Physical Geology  3
MATH 141  Calculus I (B1)  1
MATH 182  Calculus for Architecture and Construction Management  2
PHYS 141  General Physics IA  4

Select from the following:  4
PHYS 132  General Physics II (B3 & B4)  1
CHEM 124  General Chemistry for Physical Science and Engineering I (B3 & B4)  1
CHEM 127  General Chemistry for Agriculture and Life Science I (B3 & B4)  1
STAT 251  Statistical Inference for Management I (B1)  1
or STAT 312  Statistical Methods for Engineers  4

Select any upper-division 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/Support; also satisfies GE.
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.
- See the complete GE course listing (http://catalog.calpoly.edu/ generalrequirementsbachelorsdegree/#generaleducationtext).
- Minimum of 12 units required at the 300 level.

Area A  Communication
A1  Expository Writing  4
A2  Oral Communication  4
A3  Reasoning, Argumentation and Writing  4

Area B  Math, Science, and Quantitative Reasoning
B1  Mathematics/Statistics (8 units in Support)  1
B2  Life Science  4
B3  Physical Science (4 units in Support)  1
B4  One lab taken with either a B2 or B3 course  0
B7  Upper-division elective (4 units in Major)  0

Area C  Arts and Humanities
C1  Literature  4
C2  Philosophy  4
C3  Fine/Performing Arts  4
C4  Upper-division elective  4
Area C elective  (Choose one course from C1-C5)  4

Area D  Society and the Individual
D1  The American Experience (Title 5, Section 40404 requirement)  4
D2  Political Economy (4 units in Support)  1
D3  Comparative Social Institutions  4
D5  Upper-division elective (4 units in Major)  1

Area E  Lifelong Learning and Self-Development
E  Lower-division elective (4 units in Support)  0

Total units  44

1  Required in Major/Support; also satisfies GE.