Major in Construction Management

The Construction Management (CM) program at CSU is one of the top-ranked programs in the nation. Since its inception in 1946, more than 5,000 students have graduated, many of them going on to become leaders in their field. The program is accredited by the American Council for Construction Education.

Construction management is the overall planning, coordination, and control of a project from inception to completion. The CM major addresses issues related to the management of multiple project sites and the applications of resource management, schedule control, cost control, design, and other requirements of the construction process. Design elements concentrate on the relationship between the built environment and the comfort of its inhabitants while safety education emphasizes the health of the individual worker.

A major in Construction Management provides a strong foundation for professional careers in the construction industry. The curriculum integrates technology and innovative management systems with the basics of civil engineering, business and management, and the communication skills required to be successful in today's world. Coursework includes construction methods, estimating, scheduling, computer technologies, architectural principles, fundamentals of management and law, steel and concrete structures, and soils. The curriculum incorporates hands-on labs for most courses. This diverse program creates a broad range of career options for graduates.

The Construction Management major is controlled, and all students admitted to CSU or seeking to change their major to CM must first be designated as pre-construction management. To be considered for admission to CM students must:

- Complete a minimum of 15 credits at CSU
- Earn a minimum 2.750 cumulative CSU GPA
- Complete CON 101 with a “B” grade or better
- Complete CO 150 with a “B” grade or better
- Complete MATH 125 with a “C” grade or better

Once a student has met the minimum requirements listed above they are eligible to apply to the CM program.

During their academic career, CM students are required to obtain an internship (full-time structured work experience) position with any one of a variety of construction companies and organizations. Our Phelps Placement Office assists current and graduating students as well as alumni with in-house interviews, bi-annual career fairs, and the publication of a graduate resume book.

Learning Outcomes

Students will develop and demonstrate:

- Professional, analytical, and problem solving skills related to the career requirements in construction management
- Strong professional communication skills with an emphasis on written, graphic, and verbal skills related to the career requirements in construction management
- Technical proficiency in the following construction management areas: design/engineering, management, materials and methods, estimating, scheduling, safety, surveying, and project administration

Potential Occupations

The construction industry has become a highly technical industry marked by continuous and dramatic change. There is a continued demand for capable and highly trained construction management professionals who can adapt and become effective leaders in the field. CM continues to boast one of the highest placement rates and entry level salaries of all majors.

In addition to the campus Career Center, the CM Department prides itself on its in-house career support. Services provided by the Phelps Placement Office include internship and career placement, bi-annual CM career fair, in-house industry interviews, graduate resume publication, year-round intern and job postings, resume and business correspondence resources, and career assessment counseling.

Entry-level occupations include, but are not limited to: field engineer, assistant estimator, project scheduler, cost control engineer, safety engineer, project supervisor, project coordinator, quality assurance specialist, project engineer, assistant project manager, and assistant superintendent. Recruiting Industries include: Commercial, Heavy Civil and Heavy Highway, Industrial and Utility, Mechanical and Electrical, Project Controls and Consulting, Residential Development, Specialty Contracting, and Transportation.

Students may consider simultaneously completing the requirements for a minor in Business Administration. Several of the courses required for the minor in Business Administration are also required for the major in Construction Management curriculum.

Requirements

Effective Spring 2015

View Major Completion Map (http://wsnet.colostate.edu/CWIS608/Home/MajorCompletionMap)

<table>
<thead>
<tr>
<th>Freshman</th>
<th>AUCC</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CO 150</td>
<td>1A</td>
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<tr>
<td>CON 101</td>
<td>3A</td>
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<tr>
<td>CON 131</td>
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<tr>
<td>CON 151</td>
<td>3C</td>
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<tr>
<td>ECON 202</td>
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<td>Select one course from the following:</td>
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<tr>
<td>GEOL 120</td>
<td>3A</td>
<td>3</td>
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<tr>
<td>GEOL 122</td>
<td>3A</td>
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<tr>
<td>GEOL 124</td>
<td>3A</td>
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<tr>
<td>GEOL 121</td>
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<tr>
<td>MATH 125</td>
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### Freshman

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 141</td>
<td>Calculus in Management Sciences (GT-MA1)</td>
<td>1B</td>
<td>3</td>
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<td></td>
<td>Arts and Humanities</td>
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<td></td>
<td>Historical Perspectives</td>
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**Total Credits**: 31

### Sophomore

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<tr>
<td>ACT 205</td>
<td>Fundamentals of Accounting</td>
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<tr>
<td>BUS 205</td>
<td>Legal and Ethical Issues in Business</td>
<td>3</td>
</tr>
<tr>
<td>CON 251</td>
<td>Materials Testing and Processing</td>
<td>2</td>
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<tr>
<td>CON 261</td>
<td>Construction Surveying</td>
<td>3</td>
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<tr>
<td>CON 265</td>
<td>Construction Estimating I</td>
<td>3</td>
</tr>
<tr>
<td>CON 317</td>
<td>Safety Management</td>
<td>2</td>
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<tr>
<td>CON 351</td>
<td>Construction Field Management</td>
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<tr>
<td>CON *** Elective</td>
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<tr>
<td>SPCM 200</td>
<td>Public Speaking</td>
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<tr>
<td>STAT 201 or 204</td>
<td>General Statistics or Statistics for Business Students</td>
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**Global and Cultural Awareness**: 3E

**Total Credits**: 30

### Junior

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<tr>
<td>CON 267</td>
<td>Construction Management Pre-Internship</td>
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<tr>
<td>CON 359</td>
<td>Structures I</td>
<td>4</td>
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<tr>
<td>CON 360</td>
<td>Electrical and Control Systems</td>
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<tr>
<td>CON 365</td>
<td>Construction Estimating II</td>
<td>4A</td>
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<td>CON 366</td>
<td>Construction Equipment and Methods</td>
<td>3</td>
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<tr>
<td>CON 367</td>
<td>Construction Contracts/Project Administration</td>
<td>4B</td>
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<tr>
<td>CON 371</td>
<td>Mechanical and Plumbing Systems</td>
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<tr>
<td>MGT 305</td>
<td>Fundamentals of Management</td>
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<tr>
<td>PH 121</td>
<td>General Physics I (GT-SC1)</td>
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<td></td>
<td>Advanced Writing</td>
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**Total Credits**: 31

### Senior

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<tr>
<td>CON 459</td>
<td>Structures II</td>
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<tr>
<td>CON 461</td>
<td>Construction Project Scheduling and Cost Control</td>
<td>4A</td>
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<tr>
<td>CON 462</td>
<td>Financial Management for Construction</td>
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<tr>
<td>CON 465</td>
<td>Construction Management Professional Practice</td>
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<tr>
<td>CON 469</td>
<td>Soils Engineering for Construction Managers</td>
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Select 6 credits from the following:

- **Group A**:
  - CON 487A Internship: Construction Management I

**Total Credits**: 31

### Technical Electives

**Business/Computer Science/Economics (prerequisites and major restrictions may apply)**

- AREC 240/ ECON 240 Issues in Environmental Economics (GT-SS1) 3
- AREC 346/ ECON 346 Economics of Outdoor Recreation 3
- BUS 150 Business Computing Concepts and Applications 3
- CS 110 Personal Computing 4
- CS 150 Interactive Programming with Java 4
- ECON 204 Principles of Macroeconomics (GT-SS1) 3
- ECON 304 Intermediate Macroeconomics 3
- ECON 306 Intermediate Microeconomics 3
- ECON 315 Money and Banking 3
- ECON 320 Economics of Public Finance 3
- FIN 305 Fundamentals of Finance 3
- MKT 305 Fundamentals of Marketing 3
- REL 360 Real Estate Principles 3

**Foreign Language (prerequisites may apply)**

- L*** 10* First-Year Language I or II 1 5
- L*** 20* Second-Year Language I or II 1 3-5
- LFRE 105 First-Year French I 5
- LFRE 106 First-Year French Review 3
- LFRE 108 Intensive French I 5
- LFRE 120 Reading for Proficiency-French 3
- LFRE 208 Intensive French II 5
- LGER 108 Intensive German I 5
- LGER 120 Reading for Proficiency-German 3
- LGER 208 Intensive German II 5
- LJPN 208 Kanji Study 1
- LSPA 106 First-Year Spanish Review 3
- LSPA 108 Intensive Spanish I 5
- LSPA 120 Reading for Proficiency-Spanish 3
- LSPA 208 Intensive Spanish II 5

**Interior Design (prerequisites and major restrictions may apply)**

- INTD 200 Housing Values in America 3
- INTD 210 Interior Design Anatomy 3
- INTD 235 Interior Design Technologies 3
- INTD 236 Three-Dimensional Thinking 3
- INTD 255 Residential Interiors 3
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>INTD 266</td>
<td>Visual Communication-Multi-Media</td>
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<tr>
<td>INTD 276</td>
<td>Interior Design I</td>
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<tr>
<td>INTD 330</td>
<td>Lighting Design</td>
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<td>INTD 340</td>
<td>Interior Materials and Finishes</td>
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<td>INTD 350</td>
<td>Codes-Health and Safety</td>
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<td><strong>Mathematics/Statistics (prerequisites and major restrictions may apply)</strong></td>
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<td>MATH 161</td>
<td>Calculus for Physical Scientists II (GT-MA1)</td>
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<tr>
<td>STAT 321</td>
<td>Elementary Probabilistic-Stochastic Modeling</td>
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<td>STAT 340</td>
<td>Multiple Regression Analysis</td>
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<td><strong>Science (prerequisites and major restrictions may apply)</strong></td>
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<td>CHEM 103</td>
<td>Chemistry in Context (GT-SC2)</td>
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<td>CHEM 104</td>
<td>Chemistry in Context Laboratory (GT-SC1)</td>
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<td>CHEM 107</td>
<td>Fundamentals of Chemistry (GT-SC2)</td>
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<td>CHEM 108</td>
<td>Fundamentals of Chemistry Laboratory (GT-SC1)</td>
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<td>CHEM 111</td>
<td>General Chemistry I (GT-SC2)</td>
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<td>CHEM 112</td>
<td>General Chemistry Lab I (GT-SC1)</td>
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<td>CHEM 113</td>
<td>General Chemistry II</td>
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<td>CHEM 114</td>
<td>General Chemistry Lab II</td>
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<td>HES 240</td>
<td>First Aid and Emergency Care</td>
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<td>PH 142</td>
<td>Physics for Scientists and Engineers II (GT-SC1)</td>
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<td><strong>Civil Engineering (prerequisites and major restrictions may apply)</strong></td>
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<tr>
<td>CIVE 300</td>
<td>Fluid Mechanics</td>
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<tr>
<td>CIVE 303</td>
<td>Infrastructure and Transportation Systems</td>
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<tr>
<td>CIVE 322</td>
<td>Basic Hydrology</td>
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<tr>
<td>CIVE 330</td>
<td>Ecological Engineering</td>
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<tr>
<td>CIVE 355</td>
<td>Introduction to Geotechnical Engineering</td>
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<td>CIVE 356</td>
<td>Geotechnical Engineering Laboratory</td>
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<td>CIVE 360</td>
<td>Mechanics of Solids</td>
<td>3</td>
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<tr>
<td>CIVE 363</td>
<td>Material Properties</td>
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<td>CIVE 367</td>
<td>Structural Analysis</td>
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<tr>
<td>CIVE 390</td>
<td>Civil Engineering Student Projects Workshop</td>
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<tr>
<td>CIVE 401</td>
<td>Hydraulic Engineering</td>
<td>3</td>
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<tr>
<td>CIVE 423</td>
<td>Groundwater Engineering</td>
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<tr>
<td>CIVE 425</td>
<td>Soil and Water Engineering</td>
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<tr>
<td>CIVE 437</td>
<td>Wastewater Treatment Facility Design</td>
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<tr>
<td>CIVE 438</td>
<td>Environmental Engineering Concepts</td>
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<td>CIVE 455</td>
<td>Applications in Geotechnical Engineering</td>
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<td>CIVE 467</td>
<td>Design of Reinforced Concrete Structures</td>
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<td>CIVE 575</td>
<td>Sustainable Water and Waste Management</td>
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<td><strong>Communication (prerequisites and major restrictions may apply)</strong></td>
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<td>CO 401</td>
<td>Writing and Style</td>
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<td>JTC 301</td>
<td>Corporate and Professional Communication</td>
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<td>JTC 411</td>
<td>Media Ethics and Issues</td>
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<tr>
<td><strong>Internship</strong></td>
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<td>CON 487A</td>
<td>Internship: Construction Management I</td>
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1 Select any L*** 105 or L*** 107 first-year language course(s) except LLAT 105 and LLAT 107, or any L*** 205 or L*** 207 second-year language course.

2 This is a 24-week internship. Additional credits accepted to fulfill Technical Elective requirement.