Program
BS in Construction Management
   Option in Architectural Project Management
   Option in Construction Management

While the construction industry will always require many persons educated solely as architects, engineers, accountants, and other specialists, it is increasingly clear that the most effective education for the industry's leaders at all levels of managerial responsibility is a meaningful synthesis of construction, engineering, and business management education at the undergraduate level.

The construction industry's high regard and demand for our graduates are evidence that a meaningful synthesis has been accomplished.

There are two degree options available to those seeking the BS in Construction Management. The construction management option, accredited by the American Council for Construction Education, is available for those who wish to focus their career in the areas of construction project management. The Architectural Project Management (APM) option is available for those who wish to focus their career in the design/build method of project delivery.

CONSTRUCTION MANAGEMENT OPTION
The CM student's management knowledge and skills learned in the classroom are augmented by their application to actual construction projects in the CM computer labs. CM scheduling, estimating, cost management, and equipment simulation are conducted with state-of-the-art software. Traditional technical skills are enhanced through use of soils, survey, and testing labs.

ARCHITECTURAL PROJECT MANAGEMENT OPTION
CM students can also select the APM option. Other course work is further complemented by a comprehensive study of design and construction development projects. The program offers a wide variety of courses in design, art, CAD, professional practice, and law. Special emphasis is placed on constructability and cost-effective design alternatives. A degree with this option may provide two years of credit toward the architectural licensing requirements.

Faculty and Facilities
The varied academic background of the faculty enables students to develop a wide diversity of theoretical and technical competencies. A primary requirement of construction management (CM) faculty is extensive industry experience in managing construction projects, which assures students of the faculty's theoretical application being tempered by invaluable knowledge gained from practical experience. The teaching faculty's industry experience includes management of construction for heavy civil works, buildings, industrial, and real estate development. The faculty's strong technical and diverse academic preparation includes degrees in construction management, architecture, civil and electrical engineering, business administration and industrial education.

Student Organizations
The IOTA IV Chapter of Sigma Lambda Chi is the international honor society for leaders in construction. The fundamental purpose of Sigma Lambda Chi is to recognize outstanding students in the field of construction. Membership in the society is an honor and is based upon scholarship, leadership, and character, regardless of gender, race, color, or creed.

Experiential Education
Many students gain experience through work with highway, building, electrical, mechanical, and other contracts in estimating, project engineering, contract administration, or in the construction trades or with architectural firms.

Career Outlook
The construction industry is one of the largest goods-producing industries in the U.S. As a result there continues to be a high demand for CM graduates. The number of job offers per graduate exceeds two, which reflects the continuing demand. In the 2001-2002 academic year over 80 employers recruited graduates and interns on campus through the Construction Management Department. Opportunities abound with construction general contractors, specialty subcontractors, design firms, and material and equipment manufacturing and supply companies. Types of project assignments are very diverse and may include such areas as heavy civil (roads, bridges, tunnels, marine work), commercial, institutional and residential building. Typical starting job titles may include: field engineer, scheduler, cost engineer, assistant estimator, superintendent, office engineer, and assistant project coordinator.
**Construction Management**

**THE BACHELOR OF SCIENCE IN CONSTRUCTION MANAGEMENT**

**Total Course Requirements**

**for the Bachelor's Degree: 128 units**

See “Requirements for the Bachelor’s Degree” in The University Catalog for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

The department has prepared a suggested Four Year Advising Plan to help students meet all graduation requirements within four years. Please request a plan from your major adviser or view it and other current Advising information on the CSU, Chico Web.

**General Education Requirements: 48 units**

See “General Education Requirements” in The University Catalog and The Class Schedule for the most current information on General Education Requirements and course offerings. The course requirements marked below with an asterisk (*) may also be applied toward General Education.

Select an upper-division Humanities Thematic course and an upper-division Social Sciences Thematic course. For this major, this requirement is normally fulfilled by completing HIST 050 and POLS 055. For this major, HIST 050 may also be applied to General Education Breadth Area C1, C2, or C3, and POLS 055 may be applied to General Education Breadth Area D1, D2, or D3.

**Cultural Diversity Course Requirements: 6 units**

See “Cultural Diversity” in The University Catalog. Most courses used to satisfy these requirements may also apply to General Education.

**American Institutions Requirement: 6 units**

See the “American Institutions Requirement” under “Bachelor’s Degree Requirements.” For this major, this requirement is normally fulfilled by completing HIST 050 and POLS 055. For this major, HIST 050 may also be applied to General Education Breadth Area C1, C2, or C3, and POLS 055 may also be applied to General Education Breadth Area D1, D2, or D3.

**Literacy Requirement:**

See “Mathematics and Writing Requirements” in The University Catalog. Writing proficiency in the major is a graduation requirement and may be demonstrated through satisfactory completion of a course in your major which has been designated as the Writing Proficiency (WP) course for the semester in which you take the course. Students who earn below a C- are required to repeat the course and earn a C- or better to receive WP credit. See The Class Schedule for the designated WP courses for each semester. You must pass ENGL 001 (or its equivalent) with a C- or better before you may register for a WP course.

**Course Requirements for the Major: 93-98 units**

The following courses, or their approved transfer equivalents, are required of all candidates for this degree.

**DEGREE CORE: 41 units**

**Lower-Division Requirements: 29 units**

8 courses required:
- ACCT 015 Intro to Financial Accounting 3.0 FS
- BLAW 100 Managing the Legal Environment 3.0 FS
- CM 091 Construction Graphics 3.0 FS
- CM 093 Construction Materials & Systems 3.0 FS
- CM 094 Analysis Construction Drawing 3.0 FS
- Prerequisites: CM 091, CM 093
- Prerequisites: PHYS 002A is a corequisite.
- MATH 007A Analytic Geometry and Calculus 4.0 FS
- Prerequisites: Completion of ELM requirement; both MATH 004 and MATH 006 or (high school equivalent); a score that meets department guidelines on a department administered calculus readiness exam.
- Prerequisites: PHYS 002A General Physics 4.0 FS
- Prerequisites: High school physics or faculty permission. High school trigonometry and second-year high school algebra or equivalent (MATH 003 and MATH 004 at CSU, Chico).

1 course selected from:
- ARCH 014 Computer-Aided Project Mgmt Sys 3.0 FA
- CM 140 Computer-Aid Construction Mgmt 3.0 FS
- Prerequisites: PHIL 002.

**MINIMUM GPA REQUIREMENT**

The following courses or their equivalents must be completed with a minimum grade point average (GPA) of 2.0 PRIOR to enrollment in any required 100-level ARCH course: ARCH 021A, ARCH 022B, ARCH 023 or CM 140, and CM 015.

**Upper-Division Requirements: 36 units**

9 courses required:
- ARCH 121A Architectural Design Project 3.0 FA
- Prerequisites: ARCH 021A, ARCH 022B, CM 015, and successful completion of a portfolio review. (The portfolio is comprised of work from ARCH 021A, ARCH 021B, ARCH 022A, and is reviewed by Construction Management faculty.)
- ARCH 121B Architectural Design Project 3.0 SP
- Prerequisites: ARCH 121A.
- ARCH 125 Architectural History 3.0 SP
- Prerequisites: ART 001A.
- ARCH 193 Arch Detailing & Specifications 3.0 FS
- Prerequisites: CM 093, CM 140, or permission of instructor.
- ARCH 221A Design Build Project 3.0 FA
- Prerequisites: ARCH 121B, ARCH 125.
- ARCH 231 Project Administration 3.0 FS
- Prerequisites: ARCH 125.
- ARCH 290 Law for Architects 3.0 FA
- Prerequisites: ENG 001 (or its equivalent) with a grade of C- or higher
- ARCH 296 Estimating 3.0 FA
- Prerequisites: ACCT 015, ARCH 121B.
- ARCH 297A Structures for Architects 3.0 FA
- Prerequisites: CM 190, CM 197.

9 units selected from:

In consultation with an adviser, select 9 units of Construction Management “restrictive electives.”
OPTION IN CONSTRUCTION MANAGEMENT: 52 units
The following additional courses constitute the specific construction management curriculum and must be completed by all students desiring this option.

Lower-Division Requirements: 22 units
7 courses required:
- ACCT 016 Intro to Managerial Accounting 3.0 FS
  Prerequisites: ACCT 015 (or ABUS 083 for ABUS majors only).
- CHEM 027 Gen Chem for Applied Sciences 4.0 FS *
  Prerequisites: Intermediate Algebra.
- CM 090 Concepts of Construction 2.0 FS
- ECON 002 Principles of Macro Analysis 3.0 FS *
- ECON 003 Principles of Micro Analysis 3.0 FS *
- ENGR 002 Surveying for Non-Engineers 3.0 FS
  Prerequisites: One semester of high school trigonometry or MATH 004.
- PHYS 002B General Physics 4.0 FS
  Prerequisites: PHYS 002A.

Upper-Division Requirements: 30 units
9 courses required:
- BLAW 214 Labor Law/Collective Bargaining 3.0 FS
  Prerequisites: At least industrial/organizational permission.
- CM 193 Construction Method Analysis 3.0 FS
  Corequisites: CM 140.
- CM 195 Construction Equipment 3.0 SP
  Prerequisites: ACCT 015; CM 190.
- CM 209 Heavy Const Estimating 3.0 SP
  Prerequisites: CM 296.
- CM 290 Legal Aspects of Construction 3.0 FS
  Prerequisites: ENGL 001 (or its equivalent) with a grade of C- or higher; BLAW 100; CM 090; MGMT 129; senior standing.
- CM 294 Temporary Structures 3.0 FA
  Prerequisites: CM 197.
- CM 296 Construction Estimating 3.0 FA
  Prerequisites: ACCT 016; CM 095; CM 140; CM 193; CM 195.
- CM 297 Construction Cost Management 3.0 SP
  Prerequisites: CM 296.
- MGMT 129 Communication in Business 3.0 FS
  Prerequisites: ENGL 001 (or its equivalent) with a grade of C- or higher.

3 units selected from:
- ABUS 281 Land Economics 3.0 Inq
  Prerequisites: ABUS 080.
- ACCT 110 Cost Accounting 3.0 FS
  Prerequisites: ACCT 016, BADM 003.
- CM 015 Build Codes/Municipal Process 3.0 FS
  Prerequisites: CM 093.
- FIN 090 Personal Investment Management 3.0 FS
- FIN 150 Survey of Finance 3.0 FS
  Prerequisites: ACCT 015, ECON 003.
- MGMT 131 Human Resource Management 3.0 FS
- MGMT 145 Negotiation Techn for Conflict 3.0 SP
- MGMT 149 Management of Organizations 3.0 Inq
- MGMT 180 Managing People, Bus Proc, & Chg 3.0 FS
- MINS 110 Corporate Tech Integration 3.0 FS
- MKTG 170 Survey of Marketing 3.0 FS
- POMG 143 Operations Management 3.0 FS
  Prerequisites: Business Administration or Business Information Systems status required for business majors. Completion of General Education Breadth Area A4 requirements required for all majors.
- POMG 145 Cost Management for Operations 3.0 SP
- PSY 260 Industrial/Organizational Psych 3.0 FS
- R E 101 Principles of Real Estate 3.0 FS
  Prerequisites: ECON 002; ECON 003.

Electives Requirement:
To complete the total units required for the bachelor's degree, select additional elective courses from the total university offerings. You should consult with an adviser regarding the selection of courses which will provide breadth to your university experience and apply to a supportive second major or minor.

Grading Requirement:
All courses taken to fulfill major course requirements must be taken for a letter grade, except those courses specified by the department as Credit/No Credit grading only.

Advising Requirement:
Advising is mandatory for all majors in this degree program. Consult your undergraduate adviser for specific information.

Honors in the Major
Honors in the Major is a program of independent work in your major. It involves 6 units of honors course work completed over two semesters. Your Honors work will be recognized at your graduation, on your permanent transcripts, and on your diploma. It is often accompanied by letters of commendation from your mentor in the department or the department chair. Most importantly, however, the Honors in the Major program allows you to work closely with a faculty mentor in your area of interest on an original performance or research project. This year-long collaboration allows you to work in your field at a professional level and culminates in a public presentation of your work. Students sometimes take their projects beyond the university for submission in professional journals, presentation at conferences, or competition in shows; such experience is valuable for graduate school and later professional life.

Some common features of Honors in the Major program are
1. You must take 6 units of Honors in the Major course work. At least 3 of these 6 units are independent study (299H) as specified by your department. You must complete each class with a minimum grade of B.
2. You must have completed 9 units of upper-division course work or 21 overall units in your major before you can be admitted to Honors in the Major. Check the requirements carefully, as there may be specific courses that must be included in these units.
3. Your cumulative GPA should be at least 3.5 or within the top 5 percent of majors in your department.
4. Your GPA in your major should be at least 3.5 or within the top 5 percent of majors in your department.
5. Most students apply for or are invited to participate in Honors in the Major during the second semester of their junior year. Then they complete the 6 units of course work over the two semesters of their senior year.
6. Your honors work culminates with a public presentation of your Honors project.

While Honors in the Major is part of the Honors Program, each department administers its own program. Please contact your major department or major adviser for further information.

The Faculty
Stuart H. Bartholomew, 1984, Professor Emeritus, PE, MS, UC Berkeley.
K. Michael Borzage, 1985, Professor, Arch, MA, CSU Chico.
Lori A. Dixon, 1987, Assoc Professor, MSEE, CSU Chico.
Maxine Harrington, 2001, Lecturer B, MS, CSUSJ.
Thomas L. Heustis, 2003, Chair, Professor, MS, CSU Chico.
Richard Holman, 1996, Assoc Professor, MBA, CSU Chico.
Mark Maybee, 1998, Lecturer A, BS, CSU Chico.
James E. O’Bannon, 1975, Professor, PhD, U Missouri.
Bruce L. Yoakum, 1988, Professor Emeritus, PE, MS, U Michigan.
Rovane Younger, 1978, Professor, MS, Stanford U.
PE designates Registered Professional Engineer.
Architectural Project Management Course Offerings

Please see the section on “Course Description Symbols and Terms” in The University Catalog for an explanation of course description terminology and symbols, the course numbering system, and course credit units. All courses are lecture and discussion and employ letter grading unless otherwise stated. Some prerequisites may be waived with faculty permission. Many syllabi are available on the Chico Web.

ARCH 021A Design Fundamentals for Architects 3.0 Fall
Prerequisites: CM 091.
Corequisites: CM 093, CM 140, or permission of instructor.
Basic fundamentals of 2-D design are developed, including material and color presentations, presentation boards, perspective, and rendering. 1.0 hour discussion, 6.0 hours laboratory.

ARCH 021B Architectural Design Project 3.0 Spring
Prerequisites: ARCH 121B, ARCH 125.
Design requirements for building space will be discussed, including basic human space, and ADA (Americans with Disabilities Act) requirements. Students will apply these principles to various design situations. 1.0 hour discussion, 6.0 hours laboratory.

ARCH 022A Computer Drafting 3.0 Fall
Prerequisites: CM 091.
This class covers the fundamentals of computer-aided drafting software. 1.0 hour discussion, 6.0 hours laboratory. Special fee required; see The Class Schedule.

ARCH 022B Working Drawings 3.0 Spring
Prerequisites: ARCH 022A.
Architectural working drawings will be prepared utilizing CAD techniques developed in ARCH 022A. 1.0 hour discussion, 6.0 hours laboratory. Special fee required; see The Class Schedule.

ARCH 022C Technical Communication 3.0 Fall
Prerequisites: ARCH 022A, ARCH 022B, CM 015, and successful completion of a portfolio review. (The portfolio is comprised of work from ARCH 021A, ARCH 021B, ARCH 022A, and ARCH 022B, and is reviewed by Construction Management faculty.) Students will develop a comprehensive architectural design project, including programming of needs, building costs, market conditions, and architectural styles, concluding in a comprehensive design presentation. 1.0 hour discussion, 6.0 hours laboratory. Special fee required; see The Class Schedule.

ARCH 121A Architectural Design Project 3.0 Fall
Prerequisites: ARCH 021B, ARCH 125.
Students will develop a comprehensive architectural design project, including programming of needs, building codes, market conditions, and architectural styles, concluding in a comprehensive design presentation. 1.0 hour discussion, 6.0 hours laboratory. Special fee required; see The Class Schedule.

ARCH 121B Architectural Design Project 3.0 Spring
Prerequisites: ARCH 121A.
Students will develop a comprehensive architectural design project, including programming of needs, building codes, market conditions, and architectural styles, concluding in a comprehensive design presentation. 1.0 hour discussion, 6.0 hours laboratory. Special fee required; see The Class Schedule.

ARCH 125 Architectural History 3.0 Spring
Prerequisites: ART 001A.
This course presents a study of architectural history with an emphasis on contemporary projects.

ARCH 193 Architectural Detailing and Specifications 3.0 Fa/Spr
Prerequisites: CM 093, CM 094, CM 095.
A study of the performance of materials with an emphasis on why materials fail. Architectural details and specifications are developed.

ARCH 221A Design Build Project 3.0 Fall
Prerequisites: ARCH 121B, ARCH 125.
A comprehensive development project will be undertaken, including basic architectural design practices, site considerations, project financing, feasibility studies, value, and market conditions. 1.0 hour discussion, 6.0 hours laboratory. Special fee required; see The Class Schedule.

ARCH 221B Project Administration 3.0 Fa/Spr
Prerequisites: ARCH 290.
A study of the fundamentals of project practice, including AIA and AGC general conditions, AIA and AGC general conditions, and conflict avoidance. This is a writing proficiency, WP, course; a grade of C- or better certifies writing proficiency for majors.

ARCH 290 Law for Architects 3.0 Fall
Prerequisites: ENGL 001 (or its equivalent) with a grade of C- or higher.
A study of contract law for architects, including construction conditions, AIA and AGC general conditions, and conflict avoidance. This is a writing proficiency, WP, course; a grade of C- or better certifies writing proficiency for majors.

ARCH 296 Estimating 3.0 Fall
Prerequisites: ACCT 015, ARCH 123B.
The class covers material takeoff processes and estimating, using a methodical approach with checklists and techniques for arriving at a reliable estimate of the cost of a construction task or project. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see The Class Schedule.

ARCH 297A Structures for Architects 3.0 Fall
Prerequisites: CM 190, CM 197.
A basic study of the design of wood, concrete, steel, and masonry structures.

Construction Management Course Offerings

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CM 015 Building Codes and the Municipal Process 3.0 Fa/Spr
Prerequisites: CM 093.
A study of the network of local and regional regulatory agencies controlling the design and construction of buildings, with specific emphasis on the uniform building code.

CM 090 Concepts of Construction 2.0 Fa/Spr
Prerequisites: ENGL 001 (or its equivalent) with a grade of C- or higher.
An overview of construction trends, methods, materials, practices, contracts, laws, and codes.

CM 091 Construction Graphics 3.0 Fa/Spr
Prerequisites: CM 091, CM 093.
A comprehensive study of the principal materials used in the construction industry and the various systems employing these materials to build structures.

CM 094 Analysis of Construction Drawings and Specifications 3.0 Fa/Spr
Prerequisites: CM 091, CM 093.
A detailed study of construction drawings and specifications for residential, commercial, industrial, and civil projects. 2.0 hours discussion, 2.0 hours activity.

CM 095 Electrical and Mechanical Systems 3.0 Fa/Spr
Prerequisites: PHYS 002A is a corequisite.
An introduction to the basic climate control, plumbing, and electrical systems used in construction.

CM 140 Computer-Aided Construction Management 3.0 Fa/Spr
Prerequisites: PHIL 002.
Introduction and development of Computer-Aided Construction Management (CACM) software. Course will include PC-based disc operating systems, spreadsheets, and database management software typically or predominantly used in the construction industry, and specializes CACM software. A working knowledge will be developed by applications to specific and unique construction problems. 1.0 hour discussion, 6.0 hours laboratory. Special fee required; see The Class Schedule.

CM 190 Principles of Soil Mechanics and Foundations 3.0 Fall
Prerequisites: PHYS 002A. We recommend CM 093 as appropriate background.
A study of the properties and behaviors of soils when used as construction material. Included are compaction, permeability, compressibility, shear strength, etc. Laboratory and field tests are performed. Introduction to the design principles of foundations and earth structures. 2.0 hours discussion, 3.0 hours laboratory.

CM 193 Construction Method Analysis 3.0 Fa/Spr
Prerequisites: CM 093, CM 094.
Corequisite: CM 140.
Provides methods and techniques to analyze all facets of a construction project or task, including preplanning techniques, processes of analysis and improvement, time-lapse recording and analysis, mathematical simulation, ergonomics, human factors, and safety programs. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see The Class Schedule.
CM 193H Construction Methods Analysis—Honors 3.0 Fa/Spr
Prerequisites: Admission to the department's Honors in the Major program, faculty permission.
This is an Honors in the Major course which is open to students by invitation only. In addition to the course content of CM 193, this course will involve the selection and start of a significant project in some aspect of construction methods analysis. The student will select the project topic with the assistance of the faculty member. The project will be completed in CM 299H. 2.0 hours discussion, 3.0 hours laboratory.

CM 195 Construction Equipment 3.0 Spring
Prerequisites: ACCT 015; CM 190.
A study of the equipment used in the construction industry. Included are the types, capabilities,选thes, purchase/lease/rental options, and balancing of equipment. Special fee required; see The Class Schedule.

CM 196 Principles of Statics 3.0 Fall
Prerequisites: MATH 007A or equivalent; PHYS 002A.
The fundamentals of engineering mechanics, including forces, static equilibrium, simple truss analysis and properties of sections.

CM 197 Mechanics of Materials 3.0 Spring
Prerequisites: CM 196.
The mechanics of stress, strain, and deflection within the typical structural elements encountered in construction formed of timber, steel, and reinforced concrete. Rationale for sizing major structural elements and for design of their connections.

CM 198 Special Topics 1.0-3.0 Fa/Spr
This course is for special topics offered as 198A-C for 1.0 to 3.0 units respectively. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See The Class Schedule for the specific topic being offered.

CM 199 Special Problems 1.0-3.0 Fa/Spr
This course is an independent study of special problems and is offered as 199A-C for 1.0 to 3.0 units respectively. You must register directly with a supervising faculty member. Credit/no credit grading only.

CM 209 Heavy Construction Estimating 3.0 Spring
Prerequisites: CM 296.
The rationale and technique of analysis of the work operations required for heavy construction projects. Cost estimation with an emphasis on computer applications. Problems of project selection and preparation of competitive bids for the firm-price heavy construction project. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see The Class Schedule.

CM 209 Cooperative Education 1.0-3.0 Fa/Spr
Prerequisites: CM 094, ENGR 002, and 60 units within the CM major; faculty permission. This course is an internship offered as 289A-C, for 1-3 units respectively. You must register directly with a supervising faculty member. This program is designed to provide the student with management and administrative experiences within the construction industry.

CM 290 Legal Aspects of Construction 3.0 Fa/Spr
Prerequisites: ENGL 001 (or its equivalent) with a grade of C- or higher; BLAW 100; CM 090; MGMT 129; senior standing.
Overview of basic construction laws, construction-related acts and orders, rules and regulations affecting construction, mechanic lien laws, and construction contracts. This is a writing proficiency, WP, course; a grade of C- or better certifies writing proficiency for majors.

CM 290H Legal Aspects of Construction—Honors 3.0 Fa/Spr
Prerequisites: Admission to the department's Honors in the Major program; ENGL 001 (or its equivalent) with a grade of C- or higher; faculty permission.
This is an Honors in the Major course which is open to students by invitation only. In addition to the course content of CM 290, this course will involve the selection and start of a significant project in some aspect of construction law. The student will select the project topic with the assistance of the faculty member. The project will be completed in CM 299H. This is a writing proficiency, WP, course; a grade of C- or better certifies writing proficiency for majors.

CM 291 Construction Development Analysis 3.0 Spring
Prerequisites: CM 140.
Investigation, market research, finance, cost estimating, and land use with respect to the development process. A major development project will be prepared and evaluated. 2.0 hours discussion, 3.0 hours laboratory.

CM 292 Project Control and Scheduling 3.0 Spring
Prerequisites: CM 296 or ARCH 296.
Includes critical path method techniques, planning, logic, scheduling and updating, diagramming, analysis, and the use of computer for scheduling. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see The Class Schedule.

CM 294 Temporary Structures 3.0 Fall
Prerequisites: CM 197.
A study of temporary structures used in construction, including scaffolding, ground support systems, dewatering systems, deckings/ramps/bridges, and concrete shoring and form work. The emphasis is on factors affecting cost, the legal significance, and the engineering basis for the design of the structures.

CM 296 Construction Estimating 3.0 Fall
Prerequisites: ACCT 016; CM 095; CM 140; CM 193; CM 195.
Material takeoff processes and estimating, using a methodical approach with suggested check lists and techniques for arriving at a reliable estimate of the cost of a construction task or project, to include direct, indirect, and contingency costs and profits. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see The Class Schedule.

CM 297 Construction Cost Management 3.0 Spring
Prerequisites: CM 296.
Construction cost monitoring and analysis instruments that are developed from the project estimate. These include budgets, billing instruments, and scheduling data. Also included will be the development of overhead allocation systems. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see The Class Schedule.

CM 298 Special Topics 1.0-3.0 Fa/Spr
This course is for special topics offered as 298A-C for 1.0 to 3.0 units respectively. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See The Class Schedule for the specific topic being offered.

CM 299H Honors Project in Construction Management 3.0 Fa/Spr
Prerequisites: Admission to the department's Honors in the Major program; ENGR 298 or CM 299H with a grade of B or higher; faculty permission.
Open by invitation to construction management majors who have a GPA of 3.5 or higher. The culminating work of this course will be the written and oral presentation of a project of value in the field of construction management.

CM 299 Independent Study 1.0-3.0 Fa/Spr
This course is a graduate level independent study offered as 299A-C for 1.0 to 3.0 units respectively. You must register directly with a supervising faculty member.