CONSTRUCTION MANAGEMENT

Today's construction industry utilizes construction management best practices to oversee, manage and control the scope, schedule, budget, quality, safety and risk during all stages of its projects life-cycle (planning, design, procurement, pre-construction, construction and closeout). Upon successful completion, construction management courses prepare students with the foundational knowledge and skills that prepare them for entry-level opportunities in one of many functions and/or positions that support the construction project management team. For students who already have prior construction industry experience, this program will prepare them for potential promotional opportunities.

Faculty

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Courses

CM 110
Introduction and Fundamentals of Construction Management
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Strongly recommended: ENGL 101.
This course is a survey of the various functions, tasks, activities and environments of Construction Management and its disciplines. It covers the various aspects of residential, commercial and heavy civil construction, including today's applicable common practices, recognized standard construction documents, codes, regulations, basic means and methods, systems, processes, key participants, professional ethics, as well as current and future trends. Emphasis is in examining the various construction management disciplines and career opportunities; helping prepare students for their Construction Management career and serving the construction industry at large.

CM 120
Plans Reading
2 Units (AA/AS; CSU)
36 lecture hours
Grade Mode: Standard Letter
Strongly recommended: ENGL 101.
This course is designed to provide students with the foundational knowledge and practice at reading construction plans. Both residential and commercial construction drawings will be covered. The set of plans, such as the foundation plan, floor plan, elevations, sections and details that must be assembled into an organized set of drawings to show as much how plans are studied and analyzed.

CM 121
Construction Contract Documents, Codes and Specifications
2 Units (AA/AS; CSU)
36 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 110, CM 120.
Strongly recommended: ENGL 101.
This course covers the fundamentals (basic skills and techniques) required to produce construction documents conforming to current building codes and standards as well as interpretation of construction contracts documents (contracts, specifications, addendum, change orders and building codes) used in managing a construction project.

CM 130
Surveying Methods and Applications
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 110.
This course covers the theory and practice of plane surveying use of tools, instruments and methods for measuring distances, angles, elevations, cuts, fills, topographic information, building layout.

CM 140
Vertical and Horizontal Construction
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Introductory course to residential, commercial and heavy civil construction, including structural building systems and components, construction/assembly methods, utilities, subsurface improvements, and construction terminology.

CM 145
Construction Inspection and Materials Testing
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 110.
This course provides a comprehensive overview of construction inspection and materials testing processes relevant to the building and general engineering construction, including surface and subsurface construction improvements; consideration will be given to examining the various types of inspections, code versus contracts, inspection records, duties, responsibilities, and compliance and resolution, and interpersonal communication skills. Emphasis will be on exploring the various career opportunities.

CM 150
Computer Applications in Construction
1 Unit (AA/AS; CSU)
18 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 110.
This course covers applications of computer systems commonly utilized in today's construction industry, including applications that are used in construction management processes.

CM 155
Special Inspection - Reinforced Concrete
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 110.
This course provides a comprehensive overview of Special Inspection and testing processes relevant to reinforced concrete performed in permitted building construction, including the duties and responsibilities of the special inspector as mandated by respective Authority Having Jurisdiction (AHJ). Emphasis is on preparing students to become qualified to inspect and document reinforced concrete construction from pre-placement through post-placement operations. Successful completion of this course will prepare a student to pursue licensure by the Los Angeles Department of Building & Safety (LADBS) as a Deputy Building Inspector (Special Inspector).

CM 210
Construction Project Safety
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Strongly recommended: ENGL 101.
Introduction to construction project safety, OSHA requirements, Injury and Illness Prevention Program (IIPP), roles, functions, common construction hazards, accident costs, liability laws, field safety methods and controls.

CM 270
Construction Means, Methods and Equipment
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 110 and CM 210.
This course studies the means, methods, materials and equipment employed by contractors in building and general engineering construction projects. Topics include fundamentals of excavation, grading, trenching and earthmoving operations, including volume calculation and mass diagrams, soil remediation and dewatering systems, foundations, equipment operations and safety, selected construction materials, basic environmental practices, management and economics.

CM 275
Construction Estimating
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 270.
Concept and procedures for analyzing materials and methods involved in producing reliable complete project estimates as well as the bidding process.

CM 280
Safety Program Management
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Pass/No Pass, Standard Letter
Prerequisite(s): CM 210.
An overview of the planning, development, implementation and management of a comprehensive safety program. Topics covered include construction safety principles, methodologies, and best management practices. Emphasis is on the roles that construction managers, superintendents, forepersons, crew chiefs and other construction supervisors, who are charged with responsibilities to maintain safe worksite conditions, and the duties they fulfill in supporting an effective safety program. Successful completion of this course prepares qualified students to pursue certification as a Safety Trained Supervisor - Construction (STSC) by the Board of Certified Safety Professionals.

CM 281
Principles of Mechanical, Electrical and Piping Systems
2 Units (AA/AS; CSU)
36 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 121 and CM 270.
This course provides a basic understanding of the principles and current practices in the application of mechanical, electrical, and piping systems in construction.

CM 282
Principles of Structural Design
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 281.
This course provides a basic understanding of key construction structural elements including structural steel, reinforced concrete, structural masonry and timber.

CM 285
Construction Quality Management
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 110, CM 150 and CM 270.
Introduction to quality management in construction, the system and its supporting elements. Course addresses quality compliance, audits and reporting, including the development and implementation of Construction Contractor Quality Control Plan.

CM 290
Construction Planning, Scheduling and Cost Control
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 130 and CM 270.
Understand and apply conventional skills, techniques and applications to plan, schedule, and control cost of construction projects.

CM 295
Construction Project Management Capstone
3 Units (AA/AS; CSU)
54 lecture hours
Grade Mode: Standard Letter
Prerequisite(s): CM 275 and CM 290.
In this course, students will demonstrate knowledge and skills acquired throughout the construction program of study. The course will simulate construction project management processes on a construction related project and will include a formal presentation. Subject areas include project analyses, cost estimating, planning and scheduling processes will be addressed, as well as construction safety and ethics, as well as applications and implementation of project management principles for alternative project delivery systems in today's construction industry with actual case studies.

CM 698A
Cooperative Education
1 Unit (AA/AS)
60 lab hours arranged
Grade Mode: Pass/No Pass, Standard Letter
Prerequisite(s): CM 110 and approval of the CM Program Director.
Strongly recommended: Completion of minimum 21 units of program coursework.
Co-Requisite(s): The student must be simultaneously enrolled in a class that relates to the Cooperative Education class.
CM 698A – Cooperative Education is intended to fulfil fieldwork experience (hands-on) requirements, which consist of no less than 60 hours volunteer employment in an approved construction company, consultant firm or public agency. The student must hold a position equivalent to an internship or higher, which affords the opportunities usually given to an entry-level position. Field work must be completed prior to graduation and must be approved by the CM program director.

CM 698B
Cooperative Education
2 Units (AA/AS)
120 lab hours arranged
Grade Mode: Pass/No Pass, Standard Letter
Prerequisite(s): CM 110, completion of minimum 21 units of program core coursework and approval of the CM Program Director.
Co-Requisite(s): The student must be simultaneously enrolled in a class that relates to the Cooperative Education class.
CM 698B – Cooperative Education is intended to fulfil fieldwork experience (hands-on) requirements, which consist of no less than 120 hours volunteer employment in an approved construction company, consultant firm or public agency. The student must hold a position equivalent to an internship or higher, which affords the opportunities usually given to an entry-level position. Field work must be completed prior to graduation and must be approved by the CM program director.

CM 698C
Cooperative Education
3 Units (AA/AS)
180 lab hours arranged
Grade Mode: Pass/No Pass, Standard Letter
Prerequisite(s): CM 110 and approval of the CM Program Director.
Strongly recommended: Completion of minimum 21 units of program coursework.
Co-Requisite(s): The student must be simultaneously enrolled in a class that relates to the Cooperative Education class.
CM 698C – Cooperative Education is intended to fulfil fieldwork experience (hands-on) requirements, which consist of no less than 180 hours volunteer employment in an approved construction company, consultant firm or public agency. The student must hold a position equivalent to an internship or higher, which affords the opportunities usually given to an entry-level position. Field work must be completed prior to graduation and must be approved by the CM program director.

CM 699A
Cooperative Education
1 Unit (AA/AS)
75 lab hours arranged
Grade Mode: Standard Letter
Prerequisite(s): CM 110 and approval of the CM program director.
Strongly recommended: Completion of minimum 21 units of program coursework.
Co-Requisite(s): The student must be simultaneously enrolled in a class that relates to the Cooperative Education class.
CM 699A – Cooperative Education is intended to fulfil fieldwork experience (hands-on) requirements, which consist of no less than 75 hours full time (or equivalent part time) employment in an approved construction company, consultant firm or public agency. The student must hold a position equivalent to an internship or higher, which affords the opportunities usually given to an entry-level position. Field work must be completed prior to graduation and must be approved by the CM program director.

CM 699B
Cooperative Education
2.5 Units (AA/AS)
150 lab hours arranged
Grade Mode: Pass/No Pass, Standard Letter
Prerequisite(s): CM 110 and approval of the CM Program Director.
Strongly recommended: Completion of minimum 21 units of program coursework.
Co-Requisite(s): The student must be simultaneously enrolled in a class that relates to the Cooperative Education class.
CM 699B – Cooperative Education is intended to fulfil fieldwork experience (hands-on) requirements, which consist of no less than 150 hours full time (or equivalent part time) employment in an approved construction company, consultant firm or public agency. The student must hold a position equivalent to an internship or higher, which affords the opportunities usually given to an entry-level position. Field work must be completed prior to graduation and must be approved by the CM program director.

CM 699C
Cooperative Education
4 Units (AA/AS)
225 lab hours arranged
Grade Mode: Pass/No Pass, Standard Letter
Prerequisite(s): CM 110 and approval of the CM program director.
Strongly recommended: Completion of minimum 21 units of program coursework.
Co-Requisite(s): The student must be simultaneously enrolled in a class that relates to the Cooperative Education class.
CM 699C – Cooperative Education is intended to fulfil fieldwork experience (hands-on) requirements, which consist of no less than 225 hours full time (or equivalent part time) employment in an approved construction company, consultant firm or public agency. The student must hold a position equivalent to an internship or higher, which affords the opportunities usually given to an entry-level position. Field work must be completed prior to graduation and must be approved by the CM program director.

Programs

Associate Degrees

- A.S. in Construction Management (http://catalog.citruscollege.edu/disciplines/construction-management/construction-management-as/)

Certificates of Achievement

- Construction Inspection (http://catalog.citruscollege.edu/disciplines/construction-management/construction-inspection-certificate-achievement/)
- Construction Management (http://catalog.citruscollege.edu/disciplines/construction-management/construction-management-certificate-achievement/)
- Construction Quality Control (http://catalog.citruscollege.edu/disciplines/construction-management/construction-quality-control-certificate-achievement/)
- Special Inspection - Reinforced Concrete (http://catalog.citruscollege.edu/disciplines/construction-management/special-inspection-reinforced-concrete-certificate-achievement/)

Skill Award

- Construction Health and Safety Specialist (http://catalog.citruscollege.edu/disciplines/construction-management/construction-health-safety-specialist-skill-award/)*

* See Counseling department for updates to this program.