CONSTRUCTION MANAGEMENT

College of Engineering and Computer Science

Program Description
The Sacramento State University Construction Management degree prepares students for managerial positions with contractors and other organizations involved in the construction process. For a graduate, this preparation can combine with experience and lead to recognition as a construction professional, a Constructor. The construction professional is responsible for the execution of construction work, for the creation of completed projects from plans prepared by design professionals such as architects and engineers. What is to be built is defined by design professionals; how the work is to be accomplished is the concern of the Constructor. A Constructor determines the methods to be used and directs the economical application of resources in the construction of timely and safe projects at satisfactory prices, and to the required standards of quality.

The immediate objective of the program is to provide university-level preparation for managerial positions in construction and a foundation for continued learning. The curriculum emphasizes subject areas that are significant to the Constructor: engineering fundamentals, construction management, business administration, humanities and social sciences, and the development of analytical and communication skills.

Degree Program
BS in Construction Management with a Minor in Business Administration (http://catalog.csus.edu/colleges/engineering-computer-science/engineering-construction-management/bs-in-construction-management/)

Accreditation
In addition to California State University, Sacramento’s full accreditation by the Western Association of Schools and Colleges, the Bachelor of Science in Construction Management is also individually accredited by the American Council for Construction Education.

Notice to Students RE: Professional Licensure and Certification
California State University programs for professions that require licensure or certification are intended to prepare the student for California licensure and certification requirements. Admission into programs for professions that require licensure and certification does not guarantee that students will obtain a license or certificate. Licensure and certification requirements are set by agencies that are not controlled by or affiliated with the California State University and licensure and certification requirements can change at any time.

The California State University has not determined whether its programs meet other states’ educational or professional requirements for licensure and certification. Students planning to pursue licensure or certification in other states are responsible for determining whether, if they complete a California State University program, they will meet their state’s requirements for license or certification. This disclosure is made pursuant to 34 CFR §668.43(a)(5)(v)(C).

Special Features
To meet the objectives of this specialized professional program, the Construction Management curriculum consists of four distinct components:

- **Engineering**: Based in sciences and mathematics, this component stresses engineering principles and their application to the construction process. This component provides sound engineering fundamentals.
- **Construction Management**: This component utilizes the functional approach as a framework for studying the management of the construction process. In the individual courses, construction activities are analyzed from a managerial viewpoint and the functions of management are stressed.
- **Business Administration Courses**: Business courses form the third component and reinforce the program’s management emphasis. A minor in Business Administration is obtained by combining the required lower and upper division business courses. Furthermore, completing the minor requirements can satisfy many of the core requirements of the graduate program in Business Administration at Sacramento State.
- **General Education Courses**: The fourth component is critical to the success of construction students who must be sensitive to the issues driving contemporary society.
  - This unique program is accredited by the American Council for Construction Education (ACCE).

Academic Policies and Procedures
The following is a summary of policies and procedures specific to the Construction Management program. Other university policies and procedures in this catalog also apply to Construction Management majors. The Department will not hear petitions for deviation from articulated policies made by students who disregard catalog policy.

- **Most Construction Management courses require a grade of ’C-‘ or better.**
- **Course Repeat Policy**: Undergraduate Construction Management courses that are used to meet the degree requirements for the Bachelor of Science degree in Construction Management may be repeated only twice (for a total of three attempts). Grades of the second and third attempt will be averaged in grade point calculations.

Career Possibilities
Construction Manager · General Contractor · Sub-Contractor · Project Manager · Construction Estimator · Technical Salesperson · Construction Scheduler or Planner · Forensic Construction Specialist · Environmental Remediation Contractor · Construction Consultant

Contact Information
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(916) 278-6616
Department of Construction Management Website (http://www.csus.edu/cm/)

Faculty
CM 9. Construction Surveying and Layout. 3 Units
Prerequisite(s): CM 10, CM 20, CM 21 and either Math 26A or MATH 30; CM 21 and Math 26A or MATH 30 may be taken concurrently.
Corequisite(s): CM 21.
Term Typically Offered: Fall, Spring

Geomatics and the principles of surveying measurements for distance, direction, and elevation. Special emphasis on the application of surveying skills relevant to the field of construction, including building, bridge, and sitework layout techniques and procedures, establishment of reference line and grade, topographic mapping, and earthwork computations. Lecture two hours. Laboratory 3 hours.

CM 10. The Construction Industry. 1 Unit
Term Typically Offered: Fall, Spring

Introduction to the Construction Management program and the many facets of the construction industry and to the various career opportunities. The unique products of construction, the organizations involved, and the people that make it happen. Guest speakers. Lecture one hour.
Credit/No Credit

CM 15. Fundamentals of Construction Management. 3 Units
Prerequisite(s): CM 10. CM 10 may be taken concurrently.
Term Typically Offered: Fall, Spring

Introduction to the Construction Management program and industry. Critical reading, thinking and writing for the construction profession. Introduction to visualization and graphic communication using both manual and computer assisted techniques. Introduction to quantitative software commonly used in the construction industry.

CM 20. Construction Materials and Processes. 3 Units
Prerequisite(s): CM 10, ENGL 1A; CM 10 may be taken concurrently.
Term Typically Offered: Spring only

Introduction to construction materials; to their properties in-place in completed projects, and to their characteristics that affect construction processes. The organizations, methods, equipment and safety considerations that are common to projects of all types and to all segments of the industry. Field trips. Lecture two hours; laboratory three hours.
Field trip(s) may be required.

CM 21. Construction Graphics. 3 Units
Prerequisite(s): ENGL 1A and CM 10; CM 10 may be taken concurrently.
Term Typically Offered: Fall only

Instruction and exercises in graphic techniques and procedures applicable to construction. Analysis of drawings in the civil, architectural, structural, mechanical, and electrical fields and how drawings affect construction planning. Freehand sketching. Isometric and oblique projections. Material quantity surveying. Lecture two hours; laboratory three hours.

CM 22. Construction Documents. 3 Units
Prerequisite(s): ENGL 1A, CM 20, and CM 21; CM 20 may be taken concurrently.
Term Typically Offered: Spring only

Analyzes construction contract documents. Technical and legal interpretations and implications to managers of the construction process. Quantity surveying. Lecture two hours; laboratory three hours.

CM 30. Engineering Mechanics--Statics. 3 Units
Prerequisite(s): MATH 26A or MATH 30; and PSYC 5A or PSYC 11A.
Term Typically Offered: Spring only

Introduction to the solution of engineering design problems. Concepts of units, vectors, equilibrium, forces, force systems, shear and moment diagrams. Lecture three hours.

CM 40. Properties of Construction Materials. 3 Units
Prerequisite(s): PHYS 5A.
Term Typically Offered: Fall only

Study of the engineering performance characteristics of materials. Covers testing concepts and procedures. Includes basic properties of metals, aggregates, cements, concrete, timber, asphalt, masonry and plastics with emphasis on construction applications. Lecture two hours; laboratory three hours.

CM 110. Legal Aspects of Construction. 3 Units
Prerequisite(s): Senior class standing, MGMT 101, CM 22.
Corequisite(s): CM 126
Term Typically Offered: Fall only

Application of advanced legal concepts to the construction process. Analyzes problems relating to contract formation, administration, and interpretation. Includes bidding and contract enforcement; litigation of disputes vs. arbitration; liability for negligence, warranty, and strict liability; safety; license law requirements; mechanics’ liens and stop notices; bond rights and obligations. Lecture three hours.

CM 111. Construction Labor Relations. 3 Units
Term Typically Offered: Spring only

Study of federal and state labor law; labor unions, and their importance in the construction industry; and an analysis of the growth of open-shop construction. Employment law. Lecture three hours.

CM 120. Construction Operations and Methods Analysis. 3 Units
Prerequisite(s): CM 121.
Corequisite(s): CM 122.
Term Typically Offered: Fall only

Introduction to the analysis and management of construction projects in terms of the work that must be performed in the construction process. Analyzes operations and methods using concepts and techniques, including video, that are applicable to all types of projects in all segments of the industry, variables affecting productivity. Safety as an integral part of project and operations management. Field trips. Lecture two hours; laboratory three hours.
Field trip(s) may be required.

CM 121. Fundamentals of Construction Estimating. 3 Units
Prerequisite(s): CM 22.
Corequisite(s): CM 120.
Term Typically Offered: Fall only

Study of the basic approaches to estimating the cost of construction projects from a managerial viewpoint. Types of estimates and methods; elements of cost, variables and costing concepts; analysis procedures for detailed estimates. Lecture two hours; laboratory three hours.
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