

CONSTRUCTION SCIENCE AND MANAGEMENT (CSM)

Construction Science and Management (CSM) Courses

CSM 2113. Construction Materials and Methods. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an Architecture, Interior Design, or Construction Science and Management major or permission of instructor. Introduction to materials, methods, equipment, and sequences of the construction process including structural elements, components, and assemblies. Course Fee: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 2143. Construction Materials and Testing. (2-3) 3 Credit Hours.

Prerequisites: CSM 2113, PHY 1603, and enrollment as a Construction Science and Management major or permission of instructor. Analysis of materials and methods used in the design and construction process with a particular emphasis on quality control, quality assurance, and testing including soils, concrete, steel, masonry, and wood. Course Fees: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 3113. Construction Surveying. (2-3) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Practical applications of surveying, including distance, grade and angular measurements, surveying equipment and its application to construction layout and control, surveying documentation, and fieldwork. (Formerly CSM 3111. Credit cannot be earned for both CSM 3113 and CSM 3111.) This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 3123. Technical Communication in Construction. (3-0) 3 Credit Hours.

Prerequisite: MAT 1043 or MAT 1053 and enrollment as a Construction Science and Management major or permission of instructor. Visualization, interpretation, and communication of graphical geometry in construction design and engineering; graphical analysis of problems; plan reading; computer aided design, and fundamentals of information modeling software; introduction to common quantitative tools in construction. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 3143. Structures I. (3-0) 3 Credit Hours.

Prerequisites: PHY 1603 and enrollment as a Construction Science and Management major or permission of instructor. Introduction to the physical principles that govern classical statics and strengths of materials through the design of concrete, timber, and steel components of structures. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4013. Construction Estimating I. (3-0) 3 Credit Hours.

Prerequisites: CSM 2113 and CSM 3123. Introduction to estimating procedures for buildings related to quantity surveying, cost of materials and labor, life-cycle costs, and applicable software. (Formerly ARC 4013. Credit cannot be earned for both CSM 4013 and ARC 4013.) Generally offered: Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 4023. Construction Estimating II. (3-0) 3 Credit Hours.

Prerequisites: CSM 2143 and CSM 4013. Continuation of CSM 4013 with emphasis on pricing work, subcontracting, and bidding strategies utilizing applicable software. (Formerly ARC 4023. Credit cannot be earned for both CSM 4023 and ARC 4023.) Generally offered: Fall, Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 4143. Structures II. (3-0) 3 Credit Hours.

Prerequisite: CSM 3143. Analysis and design of structural members in steel, reinforced concrete, reinforced masonry, and their relationship to design and construction. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4513. Project Management. (3-0) 3 Credit Hours.

Prerequisite: CSM 3123. Introduction to project management of the construction process and integration with allied professions. Introduction to applicable software. (Formerly ARC 4613. Credit cannot be earned for both CSM 4513 and ARC 4613.) Generally offered: Fall, Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 4523. Project Planning and Scheduling. (3-0) 3 Credit Hours.

Prerequisite: CSM 4513. Continuation of CSM 4513 with emphasis on scheduling and project delivery methods utilizing applicable software. (Formerly ARC 4623. Credit cannot be earned for both CSM 4523 and ARC 4623.) (Formerly titled "Construction Management II.") Generally offered: Fall, Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4533. Building Information Modeling for Construction Management. (3-0) 3 Credit Hours.

Prerequisite: CSM 3123. Introduction to techniques used in development and management of Building Information Models. Emphasis on constructability and management. Generally offered: Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 4613. Sustainable Building Practice. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Ethics and application of environmental sustainability practice in building construction. Introduction to U.S. Green Building Council LEED program standards, methods, and procedures as applied to construction documents interpretation and construction. Generally offered: Fall, Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4623. Construction Safety. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Development and management of safety programs, worker's compensation, OSHA compliance, safety policies, standards, and record keeping. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4633. Construction Law. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Legal and ethical aspects of construction contracts, bonds, insurance, and bidding. Owner, architect, contractor, and subcontractor relationships. Generally offered: Fall, Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30; DL01 \$75.

CSM 4643. Mechanical, Electrical and Plumbing Systems. (3-0) 3 Credit Hours.

Prerequisite: CSM 3123. Building systems with an emphasis on design, installation and control of heating, ventilation and cooling, plumbing and drainage, electrical, fire and lightning protection systems. Generally offered: Fall. This course has Differential Tuition. Course Fee: DL01 \$75; SAP1 \$25; STSE \$30.

CSM 4713. Construction Capstone. (3-0) 3 Credit Hours.

Prerequisites: CSM 4023, CSM 4523, CSM 4633, and CSM 4643. Senior capstone project emphasizing integration of the design and construction processes. Project delivery systems, project development, estimating, scheduling and project controls of various types of construction projects. Generally offered: Fall, Spring, Summer. This course has Differential Tuition. Course Fees: DL01 \$75; SAP1 \$25; STSE \$30.

CSM 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the School Director, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree. Generally offered: Fall. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$10.

CSM 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the School Director, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4931. Summer Internship. (0-0) 1 Credit Hour.

Prerequisite: CSM 4623, CSM 4013, and CSM 4523. This is a part-time, on-site, construction work experience. Supervised by a qualified construction manager and intern mentor to prepare the intern for construction management functions. In addition, the CSM Internship Coordinator's prior approval of the selected internship organization is required. Must be repeated for credit and taken in consecutive five-week summer sessions. Generally offered: Summer. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$10.

CSM 4932. Internship. (0-0) 2 Credit Hours.

Prerequisite: CSM 4623, CSM 4013, and CSM 4523. This is a part-time, on-site, construction work experience. Supervised by a qualified construction manager and intern mentor to prepare the intern for construction management functions. In addition, the CSM Internship Coordinator's prior approval of the selected internship organization is required. Generally offered: Fall, Spring. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$20.

CSM 4933. Summer Internship. (0-0) 3 Credit Hours.

Prerequisite: CSM 4623, CSM 4013, and CSM 4523. This is a full-time, on-site, construction work experience during the summer semester. Supervised by a qualified construction manager and intern mentor to prepare the intern for construction management functions. In addition, the CSM Internship Coordinator's prior approval of the selected internship organization is required. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4943. Internship I. (0-0) 3 Credit Hours.

Prerequisite: CSM 4623, CSM 4013, and CSM 4523. This is a part-time, on-site, construction work experience during the Fall or Spring semesters. Supervised by a qualified construction manager and intern mentor to prepare the intern for construction management functions. In addition, the CSM Internship Coordinator's prior approval of the selected internship organization is required. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.

CSM 4946. Internship II. (0-0) 6 Credit Hours.

Prerequisite: CSM 4623, CSM 4013, and CSM 4523. This is a full-time, on-site, construction work experience during the Fall or Spring semesters. Supervision by a qualified construction manager and intern mentor to prepare the intern for construction management functions. In addition, the CSM Internship Coordinator's prior approval of the selected internship organization is required. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$60.

CSM 4953. Special Studies in Construction Science and Management. (0-9) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 3 hours for CSM 4951, 6 hours for CSM 4953, or 12 hours for CSM 4956, regardless of discipline, will apply to a bachelor's degree. This course has Differential Tuition. Course Fee: SAP1 \$25; STSE \$30.