

Construction Management

CMG 1000 - Introduction to Construction Management

Introduction to the construction management profession, current issues and trends in residential and commercial construction industries. Focuses on developing problem-solving skills, construction computational skills, verbal, written, and graphical communication skills.

Credits: 3.0

Lec-Rec-Lab: (0-2-2)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Freshman, Sophomore

CMG 1140 - Basic Construction Materials

Covers properties and behavior of basic construction materials, including wood, metals, aggregates, asphalt, concrete, and composites. Laboratory exercises include field testing techniques, materials standards, report writing, and presentation of data.

Credits: 3.0

Lec-Rec-Lab: (0-2-2)

Semesters Offered: Spring

CMG 2110 - Building Utility Systems

Overview of the mechanical, electrical, and plumbing components of building systems. HVAC systems and controls, water supply and drainage, electrical power distribution and lighting, fire detection, alarm, and communications. Includes construction drawing interpretation and design projects.

Credits: 4.0

Lec-Rec-Lab: (0-4-0)

Semesters Offered: Spring

Pre-Requisite(s): PH 1140 or PH 1240

CMG 2120 - Statics and Strengths of Materials for Construction

Composition and resolution of forces and force systems, principles of equilibrium applied to various bodies, simple structures, friction, centroids, and moments of inertia. Mechanical behavior of materials, including calculation of stresses, strains, and deformations due to axial, torsional, and flexural loading.

Credits: 4.0

Lec-Rec-Lab: (0-3-2)

Semesters Offered: Spring

Pre-Requisite(s): PH 1110 or PH 1140

CMG 2140 - Building Materials & Methods

Materials, structural systems, building codes, and management procedures appropriate for residential and commercial construction. Includes construction drawing interpretation and graphic design project.

Credits: 4.0

Lec-Rec-Lab: (0-3-2)

Semesters Offered: Fall

Pre-Requisite(s): CMG 1140 and CMG 2120

CMG 2265 - Construction Quantity Survey

An introduction to the interpretation of construction drawings to perform quantity take-offs. Emphasis is on the civil and architectural components of building construction, with some discussion of other elements.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es):

Sophomore, Junior, Senior

Pre-Requisite(s): CMG 1000 and CMG 1140

CMG 3200 - Site Planning and Development

Land development methods including site analysis, survey layout, alignment and control, earthwork, sewers, storm water, and underground utilities. Includes design project.

Credits: 4.0

Lec-Rec-Lab: (0-3-2)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): SU 2150

CMG 3250 - Structural Analysis and Design

Elastic theory analysis and design of steel structural components, including tension, compression, truss frames, flexural beams, and connections. Includes an introduction to reinforced concrete structures and timber. All work is according to current applicable code manuals. Design projects include computer applications.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): CMG 2120 or ENG 2120 or MET 2120

CMG 3265 - Construction Cost Estimating

Advanced study of construction cost estimating topics. Includes conceptual estimating, unit price development, subcontract work, budgets, negotiated contracts, and related items. Extensive use of spreadsheets and estimating.

Credits: 4.0

Lec-Rec-Lab: (0-3-2)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): CMG 2265

CMG 4000 - Design-Build Project Delivery

Professional practice, financial, legal, and ethical considerations in construction management are illustrated and discussed in the context of the design-build delivery system.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: On Demand

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

CMG 4100 - Construction Equipment Management

Study of basic principles used in the construction industry for selecting and managing construction equipment. Focuses on understanding the time value of money, estimating equipment ownership and operating costs, selecting the proper equipment for specific tasks, and estimating equipment production.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: On Demand

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): CMG 3265 and EC 3400

CMG 4120 - Construction Planning and Scheduling

A study of planning and scheduling techniques, network diagrams, CPM calculations, construction schedules, and project cash flow. Time schedules for materials, labor, and equipment are evaluated. Integrates the use of computer software as a scheduling tool.

Credits: 3.0

Lec-Rec-Lab: (0-2-2)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): CMG 3265

CMG 4200 - Construction Contracts

Legal aspects of construction to include a study of construction documents, the project manual, report requirements, agreements, change orders, and other administrative functions in building construction.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: On Demand

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): BA 2500

CMG 4210 - Construction Project Management

Provides students with an understanding of the principles required to deliver a construction project on time, within budget, and with acceptable quality. Topics include construction law, contracts, delivery systems, jobsite layout and control, submittals, record keeping, subcontracting and purchasing, quality management, change orders, claims, and dispute resolution.

Credits: 4.0

Lec-Rec-Lab: (0-3-2)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

CMG 4300 - Construction Finance and Accounting

Focuses on the principles of accounting and financial management needed to make construction projects and companies financially successful. Includes profitability, projecting costs, cash flow and cash requirements, and equipment costs.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): BA 2330 and EC 3400

CMG 4400 - Construction Safety Management

Focuses on the needs of modern construction professionals and on the requirements set forth by OSHA and other regulatory agencies relating specifically to construction.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

CMG 4800 – Sustainable Construction

An introduction to the philosophy and practice of sustainable building construction with emphasis on underlying socio-environmental philosophies, sustainable directed building technologies and materials, and case studies of contemporary green buildings. Class will be in seminar format incorporating multiple texts.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): CMG 2110 or CMG 2140

CMG 4900 - Construction Project Simulation

Capstone course. Integrates all aspects of the construction management process. Students will explore the responsibilities of the construction manager and consider project management issues through a semester-long simulated construction project (residential, commercial, or design-build). Includes oral and written report components.

Credits: 4.0

Lec-Rec-Lab: (0-3-2)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Major(s): Construction Management; Must be enrolled in one of the following Class(es): Senior

Pre-Requisite(s): CMG 3200 and CMG 3250 and CMG 4120 and CMG 4210 and HU 3120

CMG 4996 - Special Topics in Construction Management

Selected additional topics of interest in Construction Management based on student and faculty demand and interest. May be a tutorial, seminar, workshop, project, or class study.

Credits: variable to 3.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Construction Management; Must be enrolled in one of the following Class(es): Senior

CMG 4997 - Independent Study in Construction Management

Independent study of an approved topic under the guidance of a Construction Management faculty member. May be either an academic, design or research problem/project.

Credits: variable to 3.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Construction Management; Must be enrolled in one of the following Class(es): Senior

CMG 4998 - Undergraduate Research in Construction Management

An undergraduate research experience in Construction Management. Under the guidance of a Construction Management faculty member, students work on a selected/approved research problem or work directly with faculty on active research projects/grants. May require more than one semester to complete.

Credits: variable to 6.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Construction Management; Must be enrolled in one of the following Class(es): Senior

CMG 4999 - Professional Practice Seminar

Provides a review of the latest developments in the construction management profession through participation in student chapter activities of NAHB and AGC.

Credits: 1.0; Repeatable to a Max of 6

Lec-Rec-Lab: (0-0-2)

Semesters Offered: Fall, Spring

Restrictions: Must be enrolled in one of the following Class(es): Sophomore, Junior, Senior