Master of Construction Management (MCM)

Course requirements
Construction Management Curriculum

Overview

Complete the core courses from the following list:

- T60-502 Financial Principles of the Company*
- T64-523A Construction Cost Estimating*
- T64-572 Legal Aspects of Construction*
- T64-573 Fundamentals in Construction Management*
- T64-574C Construction Project Planning and Scheduling*
- T64-579 Advanced Construction Management

*These courses are required to earn a Graduate Certificate in Construction Management.

Electives

Complete twelve additional units of elective courses.

- T64-538 Quality Processes in Construction Management
- T64-550A Special Topics: Sustainable Construction
- T64-550B Business Development for Construction Professionals
- T64-550D Special Topics: Heavy Civil Construction Management
- T64-580B Digital Construction Technology

Students can choose from a broad range of School of Engineering courses that are relevant to their study of Construction Management. Please contact our academic advisor, Holly Stanwich to discuss elective options.
Course Descriptions  Complete all of the following courses:

Financial Principles of the Company

**Total Units: 3.0**

The course is designed to a) provide incoming program enrollees with little or no finance and accounting experience or background with a solid basic understanding of financial accounting concepts with an emphasis on the managerial applications of financial data, b) prepare those incoming students for the more advanced, discipline specific courses offered later in the program and, c) give those students a grounding in financial concepts that the student can utilize as they advance to higher and more responsible leadership positions post-graduation. The course is divided into three phases. The first consists of introducing and stressing basic financial concepts, rules, and principles. The second phase consists of leveraging that basic skill set to perform and evaluate analysis in the organization. The last phase will be case study driven and will challenge the student to take the lessons of the first two phases, combine that information with already existing experience and background, and develop a business correction plan for an ailing organization.

Construction Cost Estimating

**Total Units 3.0**

Construction cost estimating explores the application of cost estimating principles and estimating within a project management framework in conjunction with scope definition, quality control, planning and scheduling, risk management and loss prevention techniques, local conditions, information and communication, and working relations with stakeholders. Using a single building project, the course introduces the application of basic quantity surveying and estimating principles using a methodical approach with suggested check lists and techniques for arriving at a reliable cost estimate including direct, indirect, and contingency costs and profits. Student’s estimating efforts culminate with a competitive bid day scenario. Prerequisites: T64-573 or permission of instructor

Legal Aspects of Construction

**Total Units 3.0**

A survey of the legal problems of the construction manager; including but not limited to, liability in the areas of contracts, agency, torts, insurance, bad judgment and oversight. Prerequisite: graduate status or permission of instructor

Fundamentals in Construction Management

**Total Units 3.0**

In this course, students will be exposed to the overall construction process from initial concept through startup of the completed facility. The focus is to provide familiarization of the construction and contracting process and potential involvements by construction managers in the planning, design, construction, and post construction phases. Additional topics are introduced to provide a foundation which will prepare students for future construction management coursework. Case studies and industry examples are used throughout the course to authenticate the lectures and assignments. Prereq: Graduate Standing

Construction Project Planning and Scheduling

**Total Units 3.0**

Project planning and scheduling process utilizing current techniques including critical path analysis for effective and logical scheduling of construction projects. Identification of project activities and their relationships; schedule development, analysis, and updating; relationship of project costs and resources to the schedule; legal implications; effective communication of schedule information; development of procedures to monitor actual field progress; computer application in project scheduling. Prereqs: T64-573 or permission of instructor

Advanced Construction Management

**Total Units 3.0**

This course provides students with an opportunity to synthesize their knowledge and skills developed in their previous courses. A “capstone” course by design, the course allows students to demonstrate comprehension of the construction management process and its role in the construction industry. Students will perform research and prepare and present professional-level proposals and presentations by assuming senior management roles to address issues/problems within the industry. The course also includes a ‘Lessons from Leaders’ component featuring Presidents/CEO’s from the local construction community. These executives will provide their perspectives on a variety of topics.
Electives:
Complete twelve additional units to meet program requirements:

Quality Processes in Construction Management
Total Units: 3.0
This course will introduce the student to the various theories of quality and provide them with the tools to apply various quality practices/principles to the construction management process. This course is designed to enable the student to enhance the effectiveness of the Construction Management process through application of two performance improvement methodologies...the Baldridge Criteria for Performance Excellence and Six Sigma. Prereq: Graduate Standing

Special Topics: Sustainable Construction
Total Units: 1.5
The course will focus on sustainable planning, design and construction during all phases of a project. Also covered is how LEED Accredited Professionals manage the building certification process and the documents required for submittal to the USGBC to verify that the requirements for LEED certification are met. At the end of this course, students will be prepared to take the new USGBC LEED AP+ Exam Structure. Additional self-study will be required after the course to fully prepare for the exam. Prereqs: Graduate Standing, and CNST 573 or permission of instructor.

Business Development for Construction Professionals
Total Units: 1.5
This course focuses on the foundational issues of securing new business while ensuring project and company profitability. Topics include creating and implementing marketing and business development strategies; customer relations management; Developing competitive strategies for delivering professional construction services; bidding strategies; developing public relations strategies; managerial leadership; strategic planning. Prereqs: CNST 573 or permission of instructor. In preparation for this course, some study materials will be provided to enrolled students approximately two weeks prior to the first meeting.

Special Topics: Heavy Civil Construction Management
Total Units: 3.0
This course provides a broad perspective of the means, methods, and procedures associated with managing civil engineering and heavy construction projects. Topics include strategic bidding and estimating, heavy equipment, marine construction heavy civil operations and bridge building. Integration of scheduling, estimating, and construction contracts with a project based approach. (Three half-day Saturday site visits are required.) Prereqs: Graduate Standing, and CNST 573 or permission of instructor.

Digital Construction Technology
Total Units: 3.0
This course focuses on BIM's philosophy of integration between designers, construction professional, and owners, in order to overcome both technological and implementation changes using Virtual Design and Construction (VDC) and Integrated Project Delivery (IPD). VDC is a methodology that relies on a multidisciplinary collaboration of the digital simulation of design & construction. IPD, on the other hand, integrates people, systems, business structures and practices into a process to optimize efficiency and productivity. In this course, students will learn about BIM's application by exploring 3D, 4D aspects of BIM including geometry, spatial relationships, quantity take off, estimation and scheduling. Along with that, students also will learn about Virtual Design and Construction (VDC) and Integrated Project Delivery (IPD) system that are integral component of a successful BIM projects.

If you have questions, contact us at:
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