

CONSTRUCTION MANAGEMENT (CMGT)

CMGT 1XX: Construction Mgmt Elective

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lab, Lecture

CMGT 3XX: Construction Mgmt Elective

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

CMGT 101: Construction Graphics

CMGT 101 Construction Graphics (2-2-3) An introduction to the nature and vocabulary of graphical expression used in construction drawings, details, and sketches to include, architectural, structural, civil, mechanical, electrical, disciplines. Students develop an appreciation for the importance of effective graphical documentation and interpret drawings in terms of form, size, distance, quantity and interrelation of elements. Emphasis is placed on effective sketched, verbal, and written expression of drawing interpretations to audiences not familiar with construction drawings.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Hybrid, Lab, Lecture, Lecture/Lab, On-Line

CMGT 102: Intro to the Constructn Industry

Through analysis of relevant case studies, this course examines construction management concepts and principles as applied to contemporary practice and investigates the intersecting roles of construction manager, architect, client, and general contractor. Topics include planning, programming and documentation from pre-construction to project close-out; legal aspects relative to environmental protection, public and worker safety, contract documents, insurance and bonds; labor relations and inspection; project control, total quality management and ethics in construction management.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Hybrid, Lecture, On-Line

CMGT 104: Intro to Estimating and Schdl

Utilizing pertinent case studies, this course focuses upon the planning and scheduling stages of the building process, with particular emphasis upon reading construction documents and basic estimating principles applied to small-scale, residential and commercial projects. Construction site procedures as well as techniques for estimating unit quantities and costs of materials, labor and equipment, are introduced, and given industry application utilizing building specifications and computer software.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Prerequisites: CMGT 102 [Min Grade: D]

Schedule Type: Lecture, On-Line

CMGT 104AC: Intro to Estimating and Schdl

This course teaches the methodology, procedures, and organizational techniques involved in the preparation of a competitive bid and schedule. Conceptual and detailed estimates are prepared based on real construction documents. The course is structured in laboratory modules that cover the Project Development Process. The intent is to pull the process together in a single course to provide a strong understanding of preliminary design, estimation, scheduling and analysis.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment - 3 students, Lecture

CMGT 200: Const Proj Plann & Scheduling

A study and application of the tools and concepts used in planning and controlling construction projects. Students employ the Critical Path Method (CPM) of project scheduling, resource leveling, and time-cost analysis using manual and computer-based solution methods to develop and maintain working project schedule models.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Prerequisites: CMGT 104 [Min Grade: D]

Schedule Type: Lab, Lecture

CMGT 202: Const Cost Estimatr & Budgtn

This experiential course familiarizes students with manual and computer aided techniques of contract document quantity surveys, estimated cost calculations, and the development and maintenance of purchase and management budgets.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Prerequisites: CMGT 104 [Min Grade: D]

Schedule Type: Lab, Lecture, Lecture/Lab

CMGT 204: Behavior of Materials

This course familiarizes students with the mechanical behavior of materials and systems in equilibrium using Newton's laws of motion. Students will examine the principles of force equilibrium, construct free-body diagrams, and model the effect on various structural shapes and materials under load.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Prerequisites: (MATH 103 or MATH 111) and PHYC 101 [Min Grade: D]

Schedule Type: Hybrid, Lecture

CMGT 206: Building Systems

This course introduces students to the foundation, structural, envelope, Mechanical, electrical, plumbing, and automation systems and their interaction in a functioning building facility. Emphasis is placed on value achieved through constructability, performance, and sustainability characteristics.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Prerequisites: CMGT 104 [Min Grade: D]

Schedule Type: Lecture

CMGT 208: Materials & Mthds of Construc

This course is an introduction to the materials, assemblies and methodologies of general construction organized around Construction Specifications Institute division format. Topics include site-work and excavation techniques and proceed through basic building systems in concrete, masonry, wood, plastic and steel along with interior and exterior finishes. Emphasis is placed on achieving design intent through appropriate construction techniques and sequencing. Case studies, site visits, ongoing project examples are an integral part of the course.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** CMGT 104 [Min Grade: D]**Schedule Type:** By Appointment - 1 student, Lecture**CMGT 208AC: Materials & Mthds of Construc**

This course is an introduction to the materials, assemblies and methodologies of general construction organized around Construction Specifications Institute division format. Topics include site-work and excavation techniques and proceed through basic building systems in concrete, masonry, wood, plastic and steel along with interior and exterior finishes. Emphasis is placed on achieving design intent through appropriate construction techniques and sequencing. Case studies, site visits, ongoing project examples are an integral part of the course. Weekly Blackboard activities will account for 10 hours of work outside of the classroom setting.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** By Appointment - 1 student, Lecture**CMGT 220: Intro to Construction Drawings**

This course introduces the graphical language of construction and design documents. Students will learn to read construction plans and understand the terminology and functions of Computer Aided Design (CAD) and Building Information Modeling (BIM) software applications. Instruction will be through a combination of interactive lecture and lab time.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** By Appointment - 1 student, Lecture**CMGT 220AC: Intro to Construction Drawings**

This course introduces the graphical language of construction and design documents. Students will learn to read construction plans and understand the terminology and functions of Computer Aided Design (CAD) and Building Information Modeling (BIM) software applications. Instruction will be through a combination of interactive lecture and lab time.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** By Appointment - 2 students, Lecture, On-Line**CMGT 300: Constructn Acct/Cost Control**

This course familiarizes students with construction cost accounting systems and reporting formats. Students will examine the sources of cost data and report generation and will evaluate performance based on analysis of data for labor, material, equipment, and subcontract cost. Emphasis is placed on the formulation of management decisions and the ongoing evaluation of their effectiveness.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** CMGT 102 and ACCT 101 [Min Grade: D]**Schedule Type:** Lecture**CMGT 302: Construction Contract Admin.**

This course familiarizes students with the various forms of contract used in the construction industry and best practices for their administration and management. Through exploration of cases and current events, students will explore contract operation regarding rights, duties, responsibilities, claims management and assignment of risk. Emphasis is placed on the management of contracts as a means for the achievement of overall project success.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** CMGT 102 [Min Grade: D]**Schedule Type:** Lecture**CMGT 302AC: Construction Contract Admin.**

This course familiarizes students with the various forms of contract used in the construction industry and best practices for their administration and management. Through exploration of cases and current events, students will explore contract operation regarding rights, duties, responsibilities, claims management and assignment of risk. Emphasis is placed on the management of contracts as a means for the achievement of overall project success.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** By Appointment - 3 students, Hybrid, Lecture, On-Line**CMGT 304: Construc Safety & Risk Magmt.**

This course familiarizes students with best practices for risk identification, assessment, and mitigation for construction businesses and projects. Students will examine case examples of construction industry businesses and construction project site conditions, identify and assess specific risks, and formulate management plans to mitigate and manage the risks. Particular emphasis is placed on OSHA compliance and worksite safety management.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** CMGT 200 and CMGT 202 [Min Grade: D]**Schedule Type:** Lecture**CMGT 306: Construction Site Operations**

This course familiarizes students with methods, procedures, and practices required for the effective management of field operations preparing students to assess construction project sites and prepare comprehensive site management plans. The course explores aspects of site management such as layout, logistics, sustainable practices, administration, and false work in a hands-on collaborative environment.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** CMGT 200 and CMGT 202 [Min Grade: D]**Schedule Type:** Lecture, Studio**CMGT 308: Construction Safety Lab****Credits:** 1**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** CMGT 102 [Min Grade: D]**Schedule Type:** Lab

CMGT 310: Constructn Surveying

This course presents the basic surveying principles and their applications in construction. Students are introduced the use of surveying equipment to achieve horizontal and vertical distance measurement, horizontal and vertical angle measurement, and computation of coordinates. The course includes additional topics like field data collection for site mapping, such as topographic surveys, boundary surveys, feature location, ground survey control, and traverse computations in addition to construction layout practices with the use of digital instruments.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lab, Lecture, Lecture/Lab

CMGT 398: CMGT Designated Elective

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

CMGT 401: Codes and Specifications

The course offers an introduction to building code requirements and their application to the building design process. Students develop an appreciation for how building codes seek to ensure building performance and occupant safety. Emphasis is placed on learning a methodical approach to applying the codes to the design of different structures and occupancies.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture, Lecture/Lab

CMGT 402: Special Topics in Construction

This course addresses pertinent issues relative to construction. Special issues related to construction will be investigated by individual or groups of students based on a discussion with the instructor. The course is designed to broaden the Construction Management topics to include enhanced research opportunities.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

CMGT 403: Introduction to BIM

This course introduces students with the basic concepts of Building Information Modeling (BIM) with practical applications of Autodesk Revit. The sequence will include starting a project, adding basic building elements, modifying elements as needed, and creating a 3D Revit model. Students will be able to get used to the Revit interface and explore how information and building components are integrated in BIM. The course will also introduce utilizing Revit for purposes in addition to modeling, such as estimating. Students will develop the Revit model of an actual building to strengthen their BIM knowledge.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture/Lab, On-Line

CMGT 404: Special Topics in Construction

This course addresses pertinent issues relative to construction. Special issues related to construction will be investigated by individual or groups of students based on a discussion with the instructor. 3.0 credits; lecture

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment - 4 students, Hybrid, Lecture, On-Line

CMGT 410: Heavy Constr Princ & Practice

This course is intended to provide students with an introduction to the principles and practices employed in heavy/civil infrastructure and marine construction. The course content is presented from a practical perspective focusing on the management of heavy/civil construction projects. The course is designed for construction management majors as well as those majoring in related fields and is intended to provide a broad understanding of heavy construction techniques and contracting.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

CMGT 450: Construction Mgmt Seminar

This seminar course is an opportunity for upper-level construction management students to explore emerging trends in the construction industry while integrating the knowledge and skills developed through their previous coursework. Seminar discussions will respond to readings, guest lecturers and project reviews presented by industry partners. The course includes individual and group research projects the results of which are also discussed during seminar meetings. Material and discussions will include topics such as professional practice, integrated project delivery, industryspecific ethical challenges, sustainable practice, and career alternatives. [Writing Intensive]

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Prerequisites: CMGT 302 and CMGT 300 [Min Grade: D]

Schedule Type: By Appointment - 1 student, Hybrid, Lecture, On-Line

CMGT 499: Construction Capstone Project

This course develops a higher level understanding of the construction process by examining the problem solving that begins with conception and progresses through the completion, start-up and maintenance of a project. Utilizing the technical design drawings that students completed in ARCH-324 Visualization: Experimental Modeling and generated through Building Information Modeling (BIM) software, this course provides an opportunity to simulate the progressive stages of a construction project, thereby synthesizing knowledge and skills acquired in previous coursework.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Hybrid, Lab, Lecture