Construction Management (CMGT)

Courses

CMGT 2170 Construction Building Systems (4 Credits)
A survey of residential and commercial construction materials, means, and methods associated with the various structural and architectural systems used to design and construct buildings. Project plans and specifications are incorporated to teach the basic sequencing and overall construction process. The influence of sustainability in construction is introduced. Prerequisite: degree checkpoint 2.

CMGT 2300 Architectural Planning and Design Management (4 Credits)
This course introduces students to the significant value that architecture brings to real estate and the built environment and the various services and professions associated with it. Students are introduced to principles, protocols and the planning process related to the design function and the link between the architect's vision and the finished physical structure. Students are introduced to design thinking theory and application. Students learn to read and interpret the various graphical and written construction documents, know how they are developed and what information they contain. Coverage of architectural, structural, mechanical, electrical, plumbing, and civil drawings and specifications. The business model for design services is explored as well as the unique risks and challenges associated with managing the design throughout the various stages of development and construction.

CMGT 3100 Construction Estimating (4 Credits)
This course is designed to provide the student with the theory, principles and techniques of quantity analysis (take-off), labor determinations, overhead and profit analysis. It offers insight into the construction estimating process. The role of the estimator, types of estimating, CSI Divisions, bid/contract documents, change order pricing, design/build projects, and estimation compilation will be introduced. Discussions regarding the cost/benefit of sustainable materials and typical construction materials will enhance the requisite knowledge of construction estimating. Cross listed with CMGT 4420. Prerequisites: CMGT 2170 and degree checkpoint 2.

CMGT 3120 Construction Scheduling and Project Controls (4 Credits)
Understanding and applying scheduling and control to construction projects is essential to successful construction management. Project scheduling emphasizes network-based schedules, such as critical path management (CPM), network calculations, critical paths, resource scheduling, probabilistic scheduling and computer applications. Project control focuses on goals, flow of information, time and cost control, and change management. Prerequisites: CMGT 2170 and degree checkpoint 2.

CMGT 3170 Construction Accounting and Financial Management (4 Credits)
Introduction to construction related accounting practices and financial documents and control systems including: job cost accounting systems, cash flow analysis, schedule of values, labor and operations cost reports, income statements, balance sheets and construction budgets; emphasis on the development of techniques required to effectively monitor the financial aspects of a construction project. Prerequisite: degree checkpoint 2.

CMGT 3177 Environmental Systems and MEP Coordination (4 Credits)
A study of electrical and mechanical systems (MEP) used in the construction of buildings. Course content includes system design, component selection and utilization for energy conservation, cost estimating of systems, coordination and management of installation. Specific systems included are electrical, air conditioning, heating, ventilation and plumbing, fire protection, life safety, communication, power systems and lighting. The course also considers coordination of MEP systems and explores emerging technology and environmental issues related to mechanical and electrical systems in buildings. Cross listed with CMGT 4177. Prerequisite: degree checkpoint 2.

CMGT 3180 Construction Layout/Surveying (4 Credits)
Theory, principles and techniques of construction layout and surveying; field procedures in fundamental surveying; site, foundation and frame layout. Additional course fee. Cross listed with CMGT 4180. Prerequisite: degree checkpoint 2.

CMGT 3190 Residential Development (4 Credits)
A course sequence designed to emphasize the practical application of the theories and concepts of residential development. The course provides a capstone experience for seniors. Students are expected to apply their knowledge of general business, real estate and construction management practices by forming a student business entity, acquiring land, building and selling a residential property in a case format. Students will apply accounting, finance, marketing, real estate and construction management techniques in the planning for a residential development. The application of green building materials and methods is emphasized. Cross listed with CMGT 4490. Prerequisite: degree checkpoint 2.

CMGT 3200 Construction Contract Administration (4 Credits)
This course addresses how a successful construction project is managed and administered from design through construction to closeout. Emphasis is on how to unite the key stakeholders (contractors, architects, engineers, etc.) to provide them with a workable system for operating as an effective project team. The latest technology, laws and regulations associated with contract administration are presented. Topics pertinent to each stage of a project are introduced and discussed as they occur throughout the life of the project. Numerous real-world examples are utilized throughout the course. Various electronic project administration tools and techniques are demonstrated including Building Information Modeling. Prerequisite: degree checkpoint 2.

CMGT 3401 Residential Practicum I (4 Credits)
Practical application of residential development concepts and theories. Students form a business entity to acquire land for, build and sell a single-family residence. Accounting, finance, marketing, real estate and construction management techniques are utilized. Cross listed with CMGT 4401. Prerequisites: CMGT 2170 and degree checkpoint 2.
CMGT 3438 Legal Issues and Risk Management (4 Credits)
General contract and real estate law, tax law, landlord-tenant law, and various areas of liability for real estate practitioners. Construction contract preparation, bonding and insurance requirements, indemnity agreements, rights and remedies of property owners, contractors and subcontractors, emphasis on administration of a complete contract package for procurement and construction, risk evaluation, assessment, and management strategies. Prerequisite: degree checkpoint 2.

CMGT 3480 Construction Project Management (4 Credits)
This course offers a study of Construction Project Management including different scheduling techniques, use of estimation against scheduling, contracting, construction law, and software use for scheduling. Students obtain the needs for thought process of construction management including scheduling, bidding, proposals, communications, contracts, project planning and initialization, scheduling, estimating, resource planning, organizing, and project control. Use of software is critical and programs are chosen based on independent needs of students. Prerequisite: degree checkpoint 2.

CMGT 3700 Topics in Construction Mgmt (1-10 Credits)
Exploration of various topics and issues related to construction management. Prerequisite: degree checkpoint 2.

CMGT 3980 Construction Management Internship (1-10 Credits)
Practical experience (field study); requires written report. Prerequisite: instructor's permission and degree checkpoint 2.

CMGT 3991 Independent Study (1-10 Credits)
Individual research/study; requires written report. Prerequisite: junior standing and instructor's permission and degree checkpoint 2.

CMGT 3992 Directed Study (1-4 Credits)