

CMT - CONSTRUCTION MANAGEMENT

CMT 2200 Soils and Foundations Cr. 3

It is essential for construction manager to understand basic soil engineering properties, classification system, phase diagram, relationship between density and moisture content, and how it determines foundation design, and real-world application in the construction industry.

Application of International Building Code in foundation design. Offered Fall, Winter.

Restriction(s): Enrollment is limited to students with a major in Construction Management.

CMT 3000 Construction Estimating and Bidding Cr. 3

Fundamental cost estimating principles, processes and methods used in residential and commercial construction. Offered Fall.

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 3010 Introduction to Construction Management Cr. 3

Overview of construction industry; processes involved in construction projects from conception to final delivery. Offered Spring/Summer.

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 3020 Residential and Commercial Land Development and Design Cr. 3

Role and responsibilities of a developer; financing strategies and new trends in lending; forming an effective partnership. Technical processes: from undeveloped land to surveying, conceptual drawing, site planning process, engineering and design, permits, and construction. Offered Fall.

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 3030 Construction Safety Management Cr. 3

Construction safety and health management as applicable to contractors, owners, and designers. Construction injury and fatality statistics; humanitarian, legal and economic justification for safety; accident causation and control theories; OSHA standards and safe construction procedures. Safety policy, project safety rules, communications network, accident investigation and record keeping, worker orientation and training, and safety program evaluation and audits. Offered Fall.

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 3040 Building Codes Cr. 3

Requirements by regulatory agencies pertaining to the construction industry; current International Building Code and other regulations; emphasis on Michigan applications. Offered Winter.

Prerequisites: CMT 3010 with a minimum grade of C-

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 3050 Construction Accounting and Financial Management Cr. 3

Successful management of finances of the construction project and companies. Accounting systems, financial statements, overhead and profits, cash flows for construction projects and companies, project financing, and financial decision making. Offered Fall.

Prerequisites: ECO 2020 with a minimum grade of C

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 3070 Introduction to Green Construction Cr. 3

Sustainable or green-building design and construction: efficient use of resources to create healthier and more energy-efficient buildings. Motivations for green construction projects, technical aspects of their design, obstacles, future directions. Knowledge and capabilities to project-manage a green building. Offered Fall.

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 3080 Advanced Computers in Construction Cr. 3

Advanced applications of MS Excel software in estimating and financial management of construction projects; making effective project presentations using MS PowerPoint. Field applications of computers; use of PDAs and handheld devices in data acquisition and management. Use of REVIT software in Building Information Modeling (BIM). Offered Winter.

Prerequisites: ET 2140 with a minimum grade of C

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 4050 Construction Methods Cr. 3

Overview of construction practices in industry; processes and equipment involved in construction projects from conception to final delivery. Offered Winter.

Prerequisites: MAT 1800 with a minimum grade of C- or CMT 2200 with a minimum grade of C-

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 4140 Project Administration Cr. 3

Overview of construction project and contract administration and management. Use of Excel, Expedition, and Prolog software. Offered Winter.

Prerequisites: CMT 2X00 with a minimum grade of C

Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 4200 Senior Project Cr. 3

Satisfies General Education Requirement: Writing Intensive Competency Capstone project; senior students work in teams; application of skills, knowledge, techniques and concepts. Satisfies the University General Education Writing Intensive Course in the Major requirement. Offered Winter.

Restriction(s): Enrollment limited to students with a class of Senior; enrollment is limited to Undergraduate level students; enrollment limited to students in the College of Engineering.

CMT 5030 Facilities and Management Principles Cr. 3

An introduction to Facilities Management (FM) with an overview of the many facets of FM including the Facility lifecycle, strategic, master, and annual planning cycles. Including how these cycles are used in the management of finances, spaces, real property, sustainability, projects, security, emergencies, operations, and maintenance. Offered Fall.

Prerequisites: CMT 3010 with a minimum grade of C

Restriction(s): Enrollment limited to students in the College of Engineering.

CMT 5060 Planning and Scheduling Cr. 3

Provides an overview of the principles needed to successfully manage the time schedule of construction projects using Primavera P5.

These principles are attributed to many processes and techniques, including, Critical path Method (CPM) Technique, Time Scheduling and updating, Resource Management (Allocation, Leveling and Control), Cost Management, and Reporting. Offered Fall.

Prerequisites: CMT 3010 with a minimum grade of C-

CMT 5070 Mechanical and Electrical Systems in Buildings Cr. 3

Principles and applications of basic mechanical and electrical systems; design examples; emerging technology and environmental issues; essential engineering calculations and data. Offered Winter.

Prerequisites: MAT 1800 with a minimum grade of C-

Restriction(s): Enrollment limited to students in the College of Engineering.

CMT 5080 Construction Management Law Cr. 3

The objectives of this course are to introduce students to the legal responsibilities, risks, and rights inherent in the professional practice of construction management. Offered Winter.

CMT 7020 Construction Safety Management Cr. 3

This course covers building the safety culture, establishing accountability for safety, working with contractors, hazard prevention and control, and the steps to identify OSHA requirements. Offered Yearly.

Restriction(s): Enrollment is limited to Graduate level students.

CMT 7030 Building Information Modeling Cr. 3

This course will focus on improving skills in Revit and Navisworks while using advanced knowledge of the construction industry to manipulate models to create deliverables. Students will focus on completing detailed quantitative takeoffs for several building services including structural, mechanical, electrical, and plumbing. Offered Yearly.

Restriction(s): Enrollment is limited to Graduate level students.

CMT 7040 Lean Construction Management Cr. 3

Students will be introduced to LEAN-SIX SIGMA (LSS) philosophy, tools, and practices as they relate to real world issues in the construction industry. Offered Yearly.

Restriction(s): Enrollment is limited to Graduate level students.

CMT 7050 VR Technologies in Construction Management Cr. 3

Students will get hands-on experience with VR technology before spending time researching different products. This research will give students an understanding of the limitations of the software and which companies are proving to have an edge on the competition. Offered Yearly.

Prerequisite: CMT 7030 with a minimum grade of C

Restriction(s): Enrollment is limited to Graduate level students.

CMT 7060 Risk Management in Construction Cr. 3

Students will learn topics related to project risk management, including project risks and opportunities, plan risk analysis, implement risk responses and construction risk register templates and tools. Offered Yearly.

Restriction(s): Enrollment is limited to Graduate level students.

CMT 7070 Construction Cost Estimating Cr. 3

This course provides an in-depth analysis of cost estimates; budget estimates; preconstruction services estimates; subcontractor work estimates; and bid preparation. Offered Yearly.

Restriction(s): Enrollment is limited to Graduate level students.