

Construction Management (CMGT)

CMGT 1010

Introduction to Construction Management 3:3:0 Fall, Spring

Presents an overview of the practice of construction management including heavy civil, commercial, and residential construction. Examines the 5 M's of Construction Management-Money, Machines, Materials, Manpower and Marketing. Introduces construction documents including 2D and 3D building information models (BIM). Utilizes guest lecturers, and field trips in addition to traditional classroom activities.

CMGT 1020

Construction Materials and Methods I 3:2:2 Fall, Spring

* Prerequisite(s): MAT 0950 or higher or appropriate test scores

Provides a basic knowledge of the materials and methods used in heavy civil, commercial, and residential construction projects. Includes lectures, site visits and laboratory work. Lab access fee of \$35 for computers applies.

CMGT 1150

Construction Safety 2:1:2 Fall, Spring, Summer

Introduces OSHA safety practices and its role in the construction industry. Reviews related safety theories, procedures and practices used in the construction industry. Software fee of \$5 applies. Lab access fee of \$35 for computers applies.

CMGT 1190

Concrete and Framing Lab 3:0:9 Fall

Offers learning experience in concrete and framing applied construction methods. Course Lab Supply fee of \$10 for materials applies.

CMGT 1220

Finishing Lab 3:0:9 Spring

Offers lab experience in finishing methods and techniques. Course Lab Supply fee of \$10 for materials applies.

CMGT 2010

Construction Materials and Methods II 3:2:2 Fall, Spring

* Prerequisite(s): MAT 0950 (or higher)

Provides additional basic knowledge of the materials and methods used in heavy civil, commercial, and residential construction projects. Includes lectures, site visits and laboratory work. Software fee of \$5 applies. Lab access fee of \$35 for computers applies.

CMGT 2025

Heavy Civil Plans and Specifications 3:3:0 On Sufficient Demand

* Prerequisite(s): CMGT 1010, CMGT 1020

Designed for students interested in heavy/civil construction and design. Studies plans, standards and specifications for infrastructure construction. Emphasizes roadway systems, highway and bridge construction utilized in the heavy civil construction industry. Utilizes current project plans. May include site visits and guest lecturers as appropriate.

CMGT 281R

Internship 1 to 6:1 to 6:0 Fall, Spring, Summer

* Prerequisite(s): Department approval

For Construction Management majors. Provides on-the-job work experience in the student's major. Work experience is approved and coordinated with the Internship Coordinator. Includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and presentations. Provides experience in writing and completing individualized work objectives that improve present work performance. May be repeated for a maximum of 6 credits toward graduation. May be graded Credit/No Credit.

CMGT 299R

Skills USA 1:1:0

* Prerequisite(s): Requires adviser or department approval.

Supports and facilitates the goals and objectives of Skills USA pre-professional student organization that develops social awareness, civic, recreational, and social activities. Students may participate in local, state, and national contests. May be repeated for a maximum of 2 credits toward graduation.

CMGT 3000

Principles of Construction Scheduling 3:2:2 Fall, Spring

* Prerequisite(s): CMGT 1010, CMGT 2010, IM 2010, and University Advanced Standing

Provides fundamental skills required to plan and schedule civil and commercial construction projects. Familiarizes students with computer scheduling software packages. Covers the efficient assignment of available resources to complete projects on time and within budget. Software fee of \$5 applies. Lab access fee of \$35 for computers applies.

CMGT 3010

Construction Materials Testing 3:2:3 Fall, Spring

* Prerequisite(s): CMGT 1020 and (MAT 1010 or higher or EGDT 1600) and University Advanced Standing

Investigates the general physical properties of construction materials and their common quality control/assurance tests conducted in the construction industry. Analyzes results of these tests and how they affect construction design. Emphasis is placed on the performance of field and lab testing procedures used in heavy civil construction. Course Lab Supplies fee of \$17 for materials applies.

CMGT 3020

Building Envelopes and Mechanical Systems 3:2:2 Fall, Spring

* Prerequisite(s): CMGT 1010, IM 1010 or computer proficiency exam, and University Advanced Standing

Covers mechanical, electrical and plumbing (MEP) principles. Provides problem solving experience in the analysis and design of building envelopes and MEP systems used in construction applications. Software fee of \$5 applies. Course fee of \$10 for materials, transportation applies. Lab access fee of \$35 for computers applies.

CMGT 3030

Principles of Construction Estimating 3:2:3 Fall, Spring

* Prerequisite(s): CMGT 1020, CMGT 2010, MAT 1010 or higher or EGDT 1600, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): IM 2010 or IM 2360

Covers the preparation of detailed cost estimates based on contract models and documents. Includes the use of software for performing reliable quantity take-offs. Covers labor, material, and equipment pricing. Includes lectures and laboratory work. Software fee of \$5 applies. Lab access fee of \$35 for computers applies.

CMGT 3040

Construction Job Site Management 3:2:2 Fall, Spring

* Prerequisite(s): CMGT 2010 and University Advanced Standing

Covers the role and duties of job site managers of heavy civil and commercial construction projects. Includes documentation, time and cost control, jobsite layout and control, labor relations, conflict resolution, OSHA safety practices. Emphasizes the design and implementation of project safety plans. Focuses on project quality, productivity, cost control and safety management. Lab access fee of \$35 for computers applies.

Construction Management

CMGT 3050

Construction Equipment, Planning and Logistics

3:2:2 Spring

* Prerequisite(s): CMGT 3000, CMGT 3030, ACC 3000 (recommended) or (ACC 2010 and ACC 2020), and University Advanced Standing

Teaches construction equipment, productivity, logistics and associated costs. Emphasizes equipment used in heavy civil construction. Lab access fee of \$35 for computers applies.

CMGT 3060

Applied Statics and Strength of Materials

3:2:3 Fall, Spring

* Prerequisite(s): (MATH 1060 or EGDT 1610) and University Advanced Standing

Teaches basic principles of static, coplanar force systems, coplanar-nonconcurrent force systems, stresses and strains, properties of materials, Poisson's ratio, shear and bending diagrams, and beam design. Explores materials used in construction projects.

CMGT 3080

Construction Financial Management

3:3:0 Fall, Spring

* Prerequisite(s): ACC 3000 (Recommended) or (ACC 2010 and ACC 2020), and University Advanced Standing

* Prerequisite(s) or Corequisite(s): CMGT 3030

Builds on basic principles of accounting and finance as utilized in the construction industry. Emphasizes labor burden, financial needs and decision tools, construction accounting systems, cash flow, profit and tax projections on construction projects. Lab access fee of \$35 for computers applies.

CMGT 3160

Building Information Modeling

3:3:0 Fall, Spring

* Prerequisite(s): EGDT 1020, IM 2010 or equivalent, and University Advanced Standing

Introduces 3D architectural models for cost estimating, clash detection, collaboration between multiple disciplines and documenting and quantifying project data. Covers model design theory, parametric modeling methods, generation of residential and commercial construction plans and details sufficient for cost estimating, building components and systems, and manipulation of model information. Lab access fee of \$35 for computers applies.

CMGT 399R

Student Professional Organization

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* Prerequisite(s): University Advanced Standing

Provides students the opportunity to participate in a professional organization in the construction field. Utilizes guest speakers, attendance at professional meetings, and competitions. Should be taken once each year during BS program for a maximum of two (2) credits toward graduation.

CMGT 4010

Construction Contracts

3:3:0 Fall, Spring

* Prerequisite(s): (ENGL 2010 or ENGL 2020), CMGT 1010, Junior Standing, and University Advanced Standing

Prepares learners to be able to interpret and utilize appropriate construction documents such as contracts, waivers, change orders, employee documents and specifications, etc. Addresses the dispute process in the United States and the contractual relationship associated with construction project delivery methods.

CMGT 4020

Construction Project Management

3:3:0 Spring

* Prerequisite(s): CMGT 3000, University Advanced Standing

Exposes students to best management practices in the construction industry. Utilizes construction planning and problem solving tools on real world construction issues. Identifies and quantifies waste in the industry and determines appropriate methods to eliminate such. Discusses lean philosophy and its impact on construction projects and the industry. Exposes students to the latest research on the topic of lean construction.

CMGT 405G

Global Sustainability and the Built Environment

3:2:2 Fall, Spring

* Prerequisite(s): Minimum junior status and University Advanced Standing

For construction management majors and individuals interested in sustainable construction. Focuses on sustainability issues from a global perspective. Discusses global sustainability and focuses specifically on the LEED green building rating system. May include guest lectures, site visits, and group assignments. Lab access fee of \$35 for computers applies.

CMGT 4500

Senior Capstone Project

3:1:4 Fall

* Prerequisite(s): Junior Standing, Department Approval, and University Advanced Standing

Designed for senior Construction Management and related majors. Involves execution of a construction project case simulation covering all aspects of construction management for either heavy civil, commercial or residential projects. Engages students with local representatives from the construction industry. Requires a written project report and oral presentations. Lab access fee of \$35 for computers applies.

CMGT 459R

Current Topics in Construction

1 to 3:0 to 3:0 to 9 Fall

* Prerequisite(s): Junior Standing, Department Approval, and University Advanced Standing

Provides exposure to emerging technologies and topics of current interest in Construction. Varies each semester depending upon the state of technology. May apply a maximum of 6 hours toward graduation.

CMGT 481R

Internship

1 to 3:1 to 3:0 Fall, Spring, Summer

* Prerequisite(s): Approval of Construction Technologies Department Chair and University Advanced Standing

Provides opportunities to apply classroom theory while students work as employees in a job that relates to their careers. Students communicate regularly with a School of Technology and Computing coordinator. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May apply 3 credits toward a Bachelor of Science Degree in Construction Management. May be graded credit/no credit.

CMGT 489R

Undergraduate Research in Construction

1 to 3:0:5 to 15 On Sufficient Demand

* Prerequisite(s): Department approval and University Advanced Standing

Provides the opportunity to conduct research under the mentorship of a faculty member. Practices the theoretical knowledge gained in prior major courses. Creates a significant intellectual or creative product that is characteristic of the Construction discipline and worthy of communication to a broader audience. May be repeated for a maximum of 3 credits toward graduation.

CMGT 497R

Independent Study

1 to 3:0:3 to 9 On Sufficient Demand

* Prerequisite(s): Approval of Construction Technologies Department Chair and University Advanced Standing

Offers independent study as directed in reading or individual projects at the discretion and approval of the department chair. May be repeated for a maximum of 6 credits toward graduation.