Construction Management Technology (CMG)

CMG 100 Construction Orientation

1 Hour

Prerequisites: None

1 hour weekly (1-0)

Construction Orientation is designed to introduce the student to the many career opportunities in the construction industry. The course allows the student the opportunity to ask questions about the industry as a whole. The course also refines construction math skills to help facilitate the other construction management courses.

CMG 104 Building Layout

4 Hours

Prerequisites: None

6 hours weekly (2-4)

The student will perform basic surveying operations necessary for the location, layout, and construction of a building. Techniques will include taping, differential leveling, laying off vertical and horizontal angles, topographic surveys, and construction control surveys.

CMG 105 Estimating Techniques

3 Hours

Prerequisites: None

3 hours weekly (3-0)

This course is designed to familiarize the student with construction cost estimating. The five (5) basic elements involved in the estimating process will be covered. These five elements are: (1) working drawings and specifications; (2) subcontractor's bids; (3) quantity take-offs; (4) checklists; and (5) a summary cost estimate. A major emphasis will be placed on accurate quantity takeoffs.

CMG 107 Construction Document Interpretation

3 Hours

Prerequisites: None

4 hours weekly (2-2)

The purpose of this course is to introduce the student to the various conceptual documents used in the construction process. The primary focus will concentrate on interpretation and visualization of construction blueprints and understanding the use of construction specifications. Residential and commercial projects will be covered.

CMG 108 Construction Materials

4 Hours

Prerequisites: None

6 hours weekly (2-4)

The student will learn about soil properties and how they play a major role in building design and site work. Students will also obtain knowledge of concrete, its physical and mechanical properties, and the design and control of concrete mixes. In the laboratory portion of the class, students will learn the fundamentals of placing, finishing, and testing for quality control.

CMG 110 Structural Framing I

4 Hours

Prerequisites: None

5 hours weekly (3-2)

This course will introduce the student to the basic processes, terminology, procedures, and building components of wood frame construction. With this basic understanding of construction concepts, the student can build a foundation for a career in the construction

industry. The course facilitates classroom learning with actual field applications.

CMG 111 Structural Framing II

3 Hours

Prerequisites: None

4 hours weekly (2-2)

This course is a continuation from the wood framing construction course, designed so the student can synthesis a complete residential building. Special emphasis will be directed at the materials and application of these materials to complete the exterior and interior of the building.

CMG 112 Construction OSHA 30 Safety for Applied Technology

2 Hours

Prerequisites: None

2 hours weekly (2-0)

This course introduces students to OSHA regulations and industry practices related to creating and maintaining safe construction sites. At the completion of the course, students who attend classes will be eligible to receive an OSHA 30 Hour Course Completion Card. This class requires 100% attendance to receive the OSHA 30 Hour training card.

CMG 130 Surveying Principles I

3 Hours

Prerequisites: None

4 hours weekly (2-2)

This course is the first of two courses that make up a comprehensive study of the elements of Surveying. It is intended to provide students with a complete background of the knowledge and skills needed to be active in the world of surveying. Specifically, students should gain the skills and knowledge needed to successfully complete certification in the National Society of Professional Surveyors (NSPS) Certified Survey Technician (CST) program. This is the first of two classes to achieve this end.

CMG 131 Surveying Principles II

3 Hours

Prerequisites: CMG 130

4 hours weekly (2-2)

This course is the second of two courses that make up a comprehensive study of the elements of Surveying. It is intended to provide students with a complete background of the knowledge and skills needed to be active in the world of surveying. Specifically, students should gain the skills and knowledge needed to successfully complete certification in the National Society of Professional Surveyors (NSPS) Certified Survey Technician (CST) program. This is the second of two classes to achieve this end.

CMG 207 Construction Administration

2 Hours

Prerequisites: CMG 105 and CMG 107

2 hours weekly (2-0)

This course is designed to help the student understand the concepts involved with the management and ownership in the construction process. The focus of this course will cover pre-construction through final completion, viewed from the constructor's perspective.

CMG 208 Processes in Estimating

3 Hours

Prerequisites: CMG 105 or consent of instructor

3 hours weekly (3-0)

The course builds upon CMG 105, Estimating Techniques, and will introduce more advanced methods of cost estimating. From a set of blueprints the students will apply man hours, labor costs, and material costs to quantity takeoffs. In a portion of this course the students will learn to utilize Timberline Corporation's Precision Estimating software package. Students will learn how to interpret data generated and how to modify the computer program to meet their estimating needs.

CMG 209 Environmental Systems

3 Hours

Prerequisites: CMG 105 and CMG 107

3 hours weekly (2-2)

This course is designed to introduce the student to the basic terminology and principles of electrical, plumbing, and air conditioning systems. The student will also gain an understanding of the importance of the respective design engineers in the building process.

CMG 210 Building Renovations

3 Hours

Prerequisites: CMG 110

4 hours weekly (2-2)

Students will acquire knowledge of the techniques and technologies necessary to remodel, repair, or renovate existing residential and commercial buildings. The student will study the design and construction techniques required to convert unused areas into additional living space, make additions to existing structures, upgrade mechanical and electrical systems to meet building codes and repair, renovate, and maintain older buildings.

CMG 211 Commercial Construction

3 Hours

Prerequisites: CMG 108 or consent of instructor.

3 hours weekly (3-0)

The course will acquaint the student with the latest methods, materials, and equipment used within the industry and will familiarize the student with concepts of the construction industry that have stood the test of time. Traditional materials such as reinforced concrete, masonry, steel, and timber will be thoroughly examined in conjunction with recent developments in the construction industry.

CMG 212 Construction Business Management

3 Hours

Prerequisites: CMG 105 and CMG 107

3 hours weekly (3-0)

The student will be introduced to processes and methods of administrative responsibilities, which will help in producing a quality construction project.

CMG 215 Green Building in the 21st Century

3 Hours

Prerequisites: Students must be second year Construction Management majors.

3 hours weekly (3-0)

This course provides an overview of new emerging building systems for single, multi-family and remodeling to meet the national green building standard. The course will also focus on energy efficiency and discuss the impact that construction has on the environment.

CMG 218 CADD for Applied Technology

3 Hours

Prerequisites: None

4 hours weekly (2-2)

This course provides a comprehensive introduction to Computer-Aided Design and Drafting (CADD) with a focus on applied technologies. Students will learn to use industry-standard CADD software to create, modify, and manage both 2D and 3D designs. The course covers essential CADD skills, including geometric construction, dimensioning, and annotation, as well as advanced techniques for creating detailed and complex designs.

CMG 220 Construction Scheduling

3 Hours

Prerequisites: CMG 105 and CMG 107

3 hours weekly (3-0)

This course is an introduction to modern construction scheduling methods and techniques. The application of various scheduling methods will provide an understanding of the importance that time phasing and coordination have on completing a construction project in a timely manner.

CMG 221 Land Development

3 Hours

Prerequisites: Students must be second year Construction Management majors.

4 hours weekly (2-2)

This course will present the social and economic needs, and the legal regulations involved when developing a parcel of land into a housing community. The student will design and calculate the infrastructure to meet the mandated code requirements.

CMG 226 Statics for Structures

3 Hours

3 hours weekly (3-0)

Prerequisites: None

Students will learn fundamental principles of mechanics as they use tables and formulas in the determination of loads and the selection of wooden members and steel connectors which will safely carry these loads on floor and roof systems.