

**HOSTOS COMMUNITY COLLEGE
DEPARTMENT OF MATHEMATICS**

CMT 270 CONSTRUCTION QUALITY AND SAFETY PROCEDURES
CREDIT HOURS: 3.0
EQUATED HOURS: 3.0
CLASS HOURS: 3.0 (3 Class Hour, 0 Lab Hours)
PREREQUISITE: CMT 150 (Construction Management II)

REQUIRED TEXT(S): *Construction Safety Engineering Principles*, McCollum, McGraw-Hill
2007 (ISBN 007148244X and 9780071482448)

REFERENCE(S): *OSHA regulations* (<https://www.osha.gov/laws-regs>)

DESCRIPTION: This course offers an introduction to construction hazards, safety precautions, and the effective integration of safety regulations into the design and construction phases. Students learn different types of construction-related hazards including crane equipment, machinery, universal, access, construction, operation, and maintenance hazards together with methods to prevent them from happening. Project safety is addressed as part of the required 10-hour OSHA certification training portion of the course. Upon successful completion, the student earns a certification card from OSHA.

GRADING CRITERIA:

Attendance/Participation	5%
Homework (5 x 3 points = 15 points)	15%
Quizzes (5 x 2 points = 10 points)	10%
Presentation	10%
Midterm Exam	25%
Final Exam	<u>35%</u>
	100%

Attendance policy: Grade drops after three missed classes (for example, A to a B; B+ to a C+). Three late arrivals are equal to one skipped class. Six or more unexcused absences will result in a failing grade for the course. **THIS POLICY WILL BE STRICTLY ENFORCED.**

GRADES: A, A⁻, B⁺, B, B⁻, C⁺, C, D, I, F.

Program Criteria

ABET, Inc. is the nationally recognized accrediting body for engineering technology programs. The Department has adopted the most current ABET Program Criteria. Graduates of a construction degree programs typically specify project methods and materials, perform cost estimates and analyses, and manage construction activities. The curriculum provides instruction in the following areas:

- utilization of techniques that are appropriate to administer and evaluate construction contracts,

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documents, and codes;

- estimation of costs, estimation of quantities, and evaluation of materials for construction projects;
- utilization of measuring methods, hardware, and software that are appropriate for field, laboratory, and office processes related to construction; and
- application of fundamental computational methods and elementary analytical techniques in sub-disciplines related to construction engineering.

Student Learning Outcomes

The Department has adopted the most current ABET student outcomes criteria. Student performance in this course will be assessed based on the following learned capabilities:

- an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline (Criterion 3.A.1.); and
- an ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature (Criterion 3.A.3.).

COURSE OUTLINE

Week	Topic	Assignment
1	Introduction to Construction Safety and Hazards (Chapter 1 and 2)	
2	Categories of Hazards (Chapter 3)	HW 1
3	a. Safe Design Hierarchy to Physically Control Hazards (Chapter 4) b. Controlling Hazards Through Design Improvement (Chapter 5)	Quiz 1
4	a. Evaluating Safe Performance (Chapter 6) b. Overview of OSHA Safety Regulations (OSHA Regulations)	HW 2, Quiz 2
5	a. Crane Hazards (Chapter 7) b. Equipment and Machinery Hazards (Chapter 8)	
6	a. Universal Hazards (Chapter 9) b. Access Hazards (Chapter 10)	HW 3, Quiz 3
7	Midterm Exam	
8	a. Types Construction Hazards (Chapter 11) b. Operation and Maintenance Hazards (Chapter 12)	HW 4, Quiz 4
9	Including Safety into Design Planning (Chapter 13)	HW 5, Quiz 5
10	Including Safety into Construction Planning (Chapter 14)	
11	OSHA 10 Training	
12	OSHA 10 Training	
13	OSHA 10 Training	
14	Presentation of Student Case Studies	Presentation Due
15	Final Exam	

Note that this syllabus is a suggested timeline only. Instructors are responsible for covering all of the material in the syllabus, but they may do so at their own pace.