

CM480

Construction Safety Management

[Onsite]

Course Description:

This course explores construction safety management from the point of view of the construction manager or general contractor. Studies include safety administration, program development, federal and state regulations, personnel protection and life saving equipment.

Prerequisite(s) and/or Corequisite(s):

Prerequisite: CM310 Commercial Construction Methods

Credit hours: 4

Contact hours: 50 (30 Theory Hours, 20 Lab Hours)

Where Does This Course Belong?

Construction Safety Management is a course required to obtain a bachelor's degree in the Construction Management program. This course introduces how to develop a safety culture, how to set safety priorities and explain the benefits of safe jobs.

The goal of the program is to help the student acquire the necessary skills to become a versatile member of a construction team. Graduates may begin their careers in a variety of entry-level positions involving construction estimating, construction safety assurance, construction project management, or building code compliance.

The following course sequence provides an overview of how Construction Safety Management fits into the program.

Construction Management Core





Course Summary

Major Instructional Areas

- *Developing a safety culture*
- *Setting safety priorities*
- *Identifying the benefits of safe jobs*
- *Setting priorities on the job*
- *Building a culture of zero accidents*
- *Managing staff support for ensuring safety*
- *Defining the responsibility for ensuring safety*
- *Identifying action steps for managers at job sites*
- *Selecting safe contractors and sub-contractors*
- *Recognizing occupational safety and health administration (OSHA) subparts and standards*
- *Developing an employee-safety training matrix*

Course Objectives

- Describe the importance of a safety management system in maintaining a safety culture within an organization.
 - Explain legal, moral, and financial reasons for implementing a safety program within an organization.
 - Define the safety priorities for a construction company.
 - Develop a comprehensive safety plan for a company.
 - Demonstrate how to develop and implement employee training programs on ensuring safety.
 - Develop safety control systems for preventing accidents on a construction site.
 - Determine by conducting onsite inspections whether a construction site complies with the OSHA safety regulations.
 - Evaluate contractors and sub-contractors during the prequalification phase in a construction project.
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Learning Materials and References

Required Resources

Textbook Package	New to this Course	Carried over from Previous Course(s)	Required for Subsequent Course(s)
MacCollum, D. (1995) <i>Construction safety management</i> . Hoboken, NJ: John Wiley and Sons, Inc.	■		

Recommended Resources

Internal

ITT Tech Virtual Library

Books

You may click “Books” or use the “Search” function on the home page to find the following books.

NetLibrary>

- Rowlinson, Stephen M. *Construction Safety Management Systems*. London: Taylor & Francis Routledge, 2004.

Periodicals

You may click “Periodicals” or use the “Search” function on the home page to find the following periodicals.

EbscoHost> EBSCOhost Databases>

- “A Horse's Ears: The Human-Interest Approach to Behavior-Based Safety.” By: Anderson, Denny. *Occupational Hazards*, Dec2006, Vol. 68 Issue 12, pp. 22–23, 2p; (AN 23549948)
- “Behavior-Based Safety: Myth or Magic?” By: Smith, Sandy. *Occupational Hazards*, Oct2007, Vol. 69 Issue 10, pp. 45–48, 3p, 1 illustration; (AN 27417206)
- “THE HUMAN DYNAMICS OF INJURY PREVENTION (Part 1) From Behavior-Based to People-Based Safety.” By: Geller, E. Scott. *Occupational Hazards*, Oct2006, Vol. 68 Issue 10, pp. 78–82, 4p; (AN 22956651)

External

Web Sites

- Address of Government Agencies: <http://www.fedworld.gov> (accessed June 6, 2011)

This web site is a gateway to government information. It serves as an online locator service for a comprehensive inventory of information disseminated by the federal government.

- National Highway Traffic Safety Administration: <http://www.nhtsa.dot.gov/> (accessed June 6, 2011)

This web site provides latest news and updates related to traffic safety.

- National Institute for Occupational Safety and Health: <http://www.cdc.gov/niosh/> (accessed June 6, 2011)

This web site provides a fun and educational forum for information related to occupational diseases and the methods for preventing them.

- Occupational Safety and Health Administration: <http://www.osha.gov/> (accessed June 6, 2011)

This web site provides access to the latest rules and guidelines related to OSHA.

- U. S. Department of Transportation: <http://www.dot.gov/> (accessed June 6, 2011)

The web site gives latest information on the transport system in the U.S. It provides articles and news related to the U.S government's policies regarding the various means of transportation.

- U.S. Environmental Protection Agency (EPA): <http://www.epa.gov/> (accessed June 6, 2011)

This web site contains information about guidelines for protecting human health and the environment. It also provides latest reports and news about the environmental laws enforced by EPA.

- U.S. Department of Health and Human Services: <http://www.dhhs.gov/> (accessed June 6, 2011)

This link provides information about the health services offered by the U.S. government. It also contains articles on health-related problems.

- Bureau of Labor Statistics (BLS): <http://www.bls.gov> (accessed June 6, 2011)
This link provides statistics in a number of areas, including employment, pay and benefits, consumer expenditures, and more.
- The Construction Safety Council: <http://www.buildsafe.org> (accessed June 6, 2011)
This web site gives safety information and hazard alerts.
- The Center for Construction Research and Training: <http://www.cpwr.com/rp-elcosh.html> (accessed June 6, 2011)
This web site is developed by the National Institute for Occupational Safety and Health.

Information Search

Use the following keywords to search for additional online resources that may be used for supporting your work on the course assignments:

- OSHA
- NIOSH
- Construction safety
- Injury prevention
- Excavation
- Ladder safety
- Struck-by hazard
- Electrocution

NOTE: All links to Web references are subject to change without prior notice.

Course Plan

Instructional Methods

This course is designed to promote learner-centered activities and support the development of cognitive strategies and competencies necessary for effective task performance and critical problem solving. The course utilizes individual and group learning activities, performance-driven assignments, problem-based cases, projects, and discussions. These methods focus on building engaging learning experiences conducive to development of critical knowledge and skills that can be effectively applied in professional contexts.

Suggested Learning Approach

In this course, you will be studying individually and within a group of your peers. As you work on the course deliverables, you are encouraged to share ideas with your peers and instructor, work

collaboratively on projects and team assignments, raise critical questions, and provide constructive feedback.

Use the following advice to receive maximum learning benefits from your participation in this course:

DO	DON'T
<ul style="list-style-type: none"> ▪ Do take a proactive learning approach ▪ Do share your thoughts on critical issues and potential problem solutions ▪ Do plan your course work in advance ▪ Do explore a variety of learning resources in addition to the textbook ▪ Do offer relevant examples from your experience ▪ Do make an effort to understand different points of view ▪ Do connect concepts explored in this course to real-life professional situations and your own experiences 	<ul style="list-style-type: none"> ▪ Don't assume there is only one correct answer to a question ▪ Don't be afraid to share your perspective on the issues analyzed in the course ▪ Don't be negative about the points of view that are different from yours ▪ Don't underestimate the impact of collaboration on your learning ▪ Don't limit your course experience to reading the textbook ▪ Don't postpone your work on the course deliverables – work on small assignment components every day

Course Outline

Unit	Reading Assignments	Graded Activities & Deliverables

<p>1. Introduction to OSHA</p>	<p>MacCollum, Chapters 1, 3 & 4, pp.1-7; 15-25</p>	<ul style="list-style-type: none"> ▪ Unit 1. Assignment 1. OSHA Video Response ▪ Unit 1. Assignment 2. FAT/CAT Report ▪ Unit 1. Case Study 1. Solar Panel Installer
<p>2. Safety Planning</p>	<p>MacCollum, Chapters 5-7, pp. 26-48</p>	<ul style="list-style-type: none"> ▪ Unit 2. Assignment 1. Hazard Analysis Video Response ▪ Unit 2. Quiz 1 ▪ Unit 2. Case Study 1. Laborer Run Over by Front-End Loader
<p>3. Excavation and Cave-In</p>	<p>MacCollum, Chapter 23 pp. 156-177</p>	<ul style="list-style-type: none"> ▪ Unit 3. Assignment 1. Soil Excavation ▪ Unit 3. Assignment 2. Excavation/Trenching Safety Video Response ▪ Unit 3. Case Study 1. Trenches and Excavations
<p>4. Fall Prevention</p>	<p>MacCollum, Chapters 14 & 15, pp. 72-104</p>	<ul style="list-style-type: none"> ▪ Unit 4. Assignment 1. Safety Priorities ▪ Unit 4. Quiz 1 ▪ Unit 4. Case Study 1. Fall Prevention
<p>5. Struck-by Hazard</p>	<p>MacCollum, Chapters 11 & 29, pp. 57-67; 215-227</p>	<ul style="list-style-type: none"> ▪ Unit 5. Case Study 1. Struck-by Hazards ▪ Unit 5. Assignment 1. Crane Hazards Video Response ▪ Unit 5. Assignment 2. Accident Investigation Form

<p>6. Electrocution</p>	<p>MacCollum, Chapter 27, pp. 195–203</p>	<ul style="list-style-type: none"> ▪ Unit 6. Assignment 1. Electrical Safety Video Response ▪ Unit 6. Quiz 1 ▪ Unit 6. Case Study 1. Safety Plan Part I
<p>7. Ladders, Scaffolds</p>	<p>MacCollum, Chapters 28, 29 & 30, pp. 204–227</p>	<ul style="list-style-type: none"> ▪ Unit 7. Assignment 1. Ladder Safety Video Response ▪ Unit 7. Quiz 1 ▪ Unit 7 Case Study 1. Safety Plan Part II
<p>8. Personal Protective Equipment</p>	<p>MacCollum, Chapter 16, pp. 105–116</p>	<ul style="list-style-type: none"> ▪ Unit 8. Assignment 1. PPE Video Response ▪ Unit 8. Assignment 2. Types of Hazards ▪ Unit 8. Assignment 3. Hazard Assessment
<p>9. Accident Prevention</p>	<p>MacCollum, Chapters 32 & 34, pp. 239–243; 246–257</p>	<ul style="list-style-type: none"> ▪ Unit 9. Assignment 1. Challenger Accident Video Response ▪ Unit 9. Quiz 1 ▪ Unit 9. Case Study 1. Accident Investigation and Report
<p>10. Recordkeeping</p>	<p>MacCollum, Chapter 35, pp. 258–261</p>	<ul style="list-style-type: none"> ▪ Unit 10. Assignment 1. Recordkeeping Video Response ▪ Unit 10. Quiz 1 ▪ Unit 10. Case Study 1. Recordable Events
<p>11. Course Review and Final Exam</p>		<p>Final Exam</p>

Evaluation and Grading

Evaluation Criteria

The graded assignments will be evaluated using the following weighted categories:

Category	Weight
Assignment	37%
Quiz	12%
Case Study	31%
Exam	20%
TOTAL	100%

Grade Conversion

The final grades will be calculated from the percentages earned in the course, as follows:

Grade	Percentage	Credit
A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5

D	60–64%	1.0
F	<60%	0.0

Graded Activities and Deliverables

Grading Category	Category Weight	Graded Deliverable	Weight
Assignment	37%	Unit 1. Assignment 1. OSHA Video Response	2%
		Unit 1. Assignment 2. FAT/CAT Report	2%
		Unit 2. Assignment 1. Hazard Analysis Video Response	2%
		Unit 3. Assignment 1. Soil Excavation	3%
		Unit 3. Assignment 2. Excavation/Trenching Safety Video Response	2%
		Unit 4. Assignment 1. Safety Priorities	3%
		Unit 5. Assignment 1. Crane Hazards Video Response	2%
		Unit 5. Assignment 2. Accident Investigation Form	4%
		Unit 6. Assignment 1. Electrical Safety Video Response	2%
		Unit 7. Assignment 1. Ladder Safety Video Response	2%
		Unit 8. Assignment 1. PPE Video Response	2%
		Unit 8. Assignment 2. Types of Hazards	3%
		Unit 8. Assignment 3. Hazard Assessment	4%
		Unit 9. Assignment 1. Challenger Accident Video Response	2%
		Unit 10. Assignment 1. Recordkeeping Video Response	2%
Quiz	12%	Unit 2. Quiz 1	2%
		Unit 4. Quiz 1	2%

Grading Category	Category Weight	Graded Deliverable	Weight
		Unit 6. Quiz 1	2%
		Unit 7. Quiz 1	2%
		Unit 9. Quiz 1	2%
		Unit 10. Quiz 1	2%
Case Study	31%	Unit 1. Case Study 1. Solar Panel Installer	4%
		Unit 2. Case Study 1. Laborer Run Over by Front-End Loader	3%
		Unit 3. Case Study 1. Trenches and Excavations	4%
		Unit 4. Case Study 1. Fall Prevention	4%
		Unit 5. Case Study 1. Struck-by Hazards	2%
		Unit 6. Case Study 1. Safety Plan Part I	3%
		Unit 7. Case Study 1. Safety Plan Part II	3%
		Unit 9. Case Study 1. Accident Investigation and Report	4%
		Unit 10. Case Study 1. Recordable Events	4%
Exam	20%	Final Exam Units 1-10	20%
			100%

Academic Integrity

All students must comply with the policies that regulate all forms of academic dishonesty, or academic misconduct, including plagiarism, self-plagiarism, fabrication, deception, cheating, and sabotage. For more information on the academic honesty policies, refer to the Student Handbook and the Course Catalog.

(End of Syllabus)