

# Industrial and Construction Occupational Safety and Health: ENGR 448G

## Catalog Description:

A study of the Federal OSH Act as it applies to both industry and construction. Beyond federal regulation, the course includes accident prevention plans, safety education and documentation preparation.

**Prerequisites:** None

**Textbook:** *General Industry, OSHA safety and Health Standards*  
(29 CFR 1910), Latest Edition, U.S. Government Print Office

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## Learning Objectives with relationship to ABET outcomes

Students will be able to:	A	B	C	D	E	F	G	H	I	J	K
To develop an understanding of the William-Steiger Occupational Safety and Health Act of 1970 and its consequences, among which are the establishment and implementation of standards, the obligation for complying with the standards and other regulations, the requirement for recording and reporting occupational fatalities, injuries and illnesses and the rights and responsibilities of those involved.									X	X	
To develop an understanding of total safety and health programming in industry.	X										
To develop a capability for identifying the specific standards applicable to specific work place conditions.	X					X					
To develop the capability for recognizing and identifying existing and/or potential hazardous conditions in the work place.						X					
To recognize the inherent relationships between standards and the hazards which those standards are designed to control, together with utilizing conformity with standards as a primary means of hazard control.	X					X					

**ABET Learning Outcomes:** An engineering technology program must demonstrate that graduates have:

- A. an appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines,
- B. an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology,
- C. an ability to conduct, analyze and interpret experiments and apply experimental results to improve processes,
- D. an ability to apply creativity in the design of systems, components or processes appropriate to program objectives,
- E. an ability to function effectively on team,

- F. an ability to identify, analyze and solve technical problems,
- G. an ability to communicate effectively,
- H. a recognition of the need for, and an ability to engage in lifelong learning,
- I. an ability to understand professional, ethical and social responsibilities,
- J. a respect for diversity and a knowledge of contemporary professional, societal and global issues, and
- K. a commitment to quality, timeliness, and continuous improvement..

**Lesson Plan:**

<u>Week</u>	<u>Topic</u>
1	Introduction to OSHA, OSH Act and employer-employee rights and responsibilities Introduction to standards, 29 CFR 1910
2	Inspections, Citations and Penalties Recordkeeping
3	Subpart D: Walking, Working Surfaces
4	Subpart E and L: Means of Egress and Fire Protection
5	Subpart H: Hazardous Material
6	Subpart G: Occupational Health and Environmental Control Health and Safety program
7	Subpart I: PPE Midterm review
8	Subpart J: Permit Required Confined Spaces Midterm
9	Subpart J: The Control of Hazardous Energy Subpart N: Material Handling and Storage
10	Subpart O: Machinery and Machine Guarding
11	Subpart P: Hand and portable Powered Tools and Other Hand-Held Equipment Subpart Q: Welding, Cutting and Brazing
12	Subpart S: Electrical
13	Subpart W: Ergonomics Subpart Z: Asbestos
14	Subpart Z: Hazard Communication Subpart Z: Introduction to Industrial Hygiene/ Blood borne Pathogens
15	Student Presentation Final review

**Assignments and Class Activities:**

1. Students shall select a course related topic, write a report on it and represent the report in class
2. Students shall prepare Biweekly Health and Safety report related to course materials
3. Students are expected to participate group activities actively and finish in class assignments inside classroom
4. Graduate students are expected to perform research in a safety and health topic, write summary about its history, application, and development
5. Any unexcused late work will be penalized by 10% for each delayed week.

**Evaluation of Student Progress:**

Student's grade will depend upon

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|-------------------------------|-----|
| 1. Attendances/participation* | 10% |
| 2. Assignment/project         | 40% |
| 3. Exams and Quizzes          | 50% |

**\*Attendance/Participation:**

It should be noted that class will begin promptly as scheduled. Anyone not in class at the time of taking attendance will be considered absent. 1% of total points will be reduced for any unexcused absence session. Students who obtained grade A or B from the class and had less than 10 absences will be eligible for the OSHA card. If a personal or family emergency necessitates being absent from class, please contact the Student Development and Orientation Office in Seal Hall 301 or by phone (309-298-1884). This office serves as a liaison between students, family, and faculty in emergency situation.

**Grading:**

Grades of A, B, C, D, and F may be given in this course. Accordingly, the following range will be used to apply all grades: 100-90 = A, 90-80 = B, 80-70 = C, 70-60 = D, AND 59-0 = F.

**Tentative Test Date:**

	<u>Date</u>	<u>Coverage</u>
Quizzes:	TBD	TBD
Midterm:	8 <sup>th</sup> week	week 1, 2, 3, 4, 5, 6, and 7 materials
Final:	TBD	week 8, 9, 10, 11, 12, 13, 14, and 15 materials

**Student Disabilities:**

If there are any students who require special accommodations due to an injury, disability, or any other medical reason, they are encouraged to discuss this with the instructor.