

Course 4

BCP 8833/6400: Occupational Safety and Health Principles

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Course Description:

This course examines occupational safety and health practices needed to address occupational safety and health issues in the workplace. Students will utilize regulatory standards as a guide to apply policies, procedures, standards and occupational safety and health principles. Industry recognized best practices, origin of the standards, the process and rules of inspections, citations and penalties and polices will be covered.

Prerequisites: BCP 8823/6300

Textbooks: Relevant Federal Regulations; Occupational Safety and Health for Technologists, Engineers, and Managers; Goetsch, David 8th edition (2014)(Prentice Hall); Advanced Safety Management: Manuele, Fred, 2nd edition (2014) (Wiley Pres); additional selected readings and case studies.

Course Objectives:

Students will be able to recognize and evaluate occupational safety and health hazards in the workplace, and to determine appropriate hazard controls following the hierarchy of controls. Students will furthermore be able to analyze the effects of workplace exposures, injuries and illnesses, fatalities and the methods to prevent incidents using the hierarchy of controls, effective safety and health management systems and task oriented training.

Learning Outcomes:

By the end of this course, a student should:

1. **Evaluate** workplace to determine the existence of occupational safety and health hazards
2. **Identify** relevant regulatory and national consensus standards along with best practices that are applicable.
3. **Select** appropriate control methodologies based on the hierarchy of controls
4. **Analyze** injury and illness data for trends.

Grading:

Assignments:	20 %
Knowledge Assessments (quizzes):	25 %
Midterm Exam:	15 %
Research Papers	15%
Final Exam:	25%

1. Students are required to participate in the online learning platform through discussion boards, Q&A sessions, and online debates. Instructors will monitor participation and engage online with students.
2. The course contains two unit assessments (quizzes) – to be completed at the ends of units 3, and 6.
3. Assignments include independent research to identify and evaluate a current occupational safety and health topic or event and share findings with the cohort through the online discussion boards.
4. There will be two course projects: a written report on an independent research study in an area of hazard prevention and control, and a scenario based case study. In the case study, questions related to the scenario will encompass occupational health and safety principles and prevention strategies introduced throughout the course.
5. Exams will test student understanding of chapter content, reading assignments, and course

instruction and will include a combination of true/false, fill-in-the-blank, short essay, and multiple choice

Learning Accommodations:

If needed, we will make accommodations for students with documented disabilities. These accommodations must be arranged in advance and in accordance with the Office of Disability Services (<http://disabilityservices.gatech.edu>).

Academic Integrity:

Students are encouraged to study together and collaborate on case studies, but each student must submit their own work unless the assignment is specifically structured as a group assignment/project. Any reference sources (including online sources) used to prepare written assignments must be paraphrased in your own words and cited. Students are to neither receive nor provide help to others during exams. Any student suspected of behavior in violation of the Georgia Tech Honor Code will be referred to the Office of Student Integrity. The Georgia Tech Honor Code is available on the Office of Student Integrity website (<http://www.osi.gatech.edu>).

Lectures:

Week	Topic	Assessments
1	Introduction to occupational safety and health regulatory bodies, research, requirements, and industry best practices: <ul style="list-style-type: none"> • Department of Labor • NFPA • ANSI • NEC • Etc. Goetsch, Chapter 1 & 4	Students will be assigned case studies that will require them to apply the week’s lectures. This will include analysis of hazards, application of standards, and development of recommendations to control hazards.
2	Hazard Recognition <ul style="list-style-type: none"> • Risk v. hazards • Hazard assessment tools • Site assessments • Job Hazard Assessments Goetsch, Chapter 8 Manuele, Chapter 8	Students will research an operational issue/ process and use analytical tools to assess hazards reporting their process, methodology, and outcomes in a research paper.
3	Fire and Life Safety <ul style="list-style-type: none"> • Fire hazards • Fire safety standards • Life safety • Prevention and control Goetsch, Chapter 13	Student will be required to research a historic case study and the advent of life safety codes reporting out their findings in a research paper. Quiz 1- Multiple choice quiz related to information covered in units 1-3
4	Hazard Control/ Hierarchy of Controls <ul style="list-style-type: none"> • Substitution/ Elimination • Engineering Controls • Work Practices • Administrative Controls • Personal Protective Equipment Goetsch, Chapter 18 Manuele, Chapter 12	Students will be assigned a case study where they will be required to analyze workplace hazards, assess their impact, and apply appropriate control methodologies. Midterm Exam

5	<p>General industry safety hazards: Recognition and control in a manufacturing environments. Focusing on: Standards development, concepts, and application in manufacturing.</p> <p>Goetsch, Chapter 4</p>	<p>Research the application of industry/regulatory standards for manufacturing; Students will prepare a written report on an independent research study on the history and impact of regulatory standards in manufacturing.</p>
6	<p>Construction safety hazards: Recognition and control in a construction environment. Focusing on: the fluid nature of construction sites; transient workforce issues, multi-employer worksites, special health hazards in construction.</p> <p>Goetsch, Chapter 4</p>	<p>Research and application of industry and regulatory standards for construction trades; Students will prepare a paper on the evolution of standards in construction and their impact on the industry.</p> <p>Quiz 2 – Multiple choice quiz related to units 4-6.</p>
7	<p>Safety Analysis and Prevention Strategies</p> <ul style="list-style-type: none"> • Analysis of hazards • Prevention • Promoting safety • Defining value <p>Goetsch, Chapter 18 & 20</p>	<p>Students will research and provide a paper about an occupational safety and health concern at their place of work. This paper will require students to; research the process, define the issue, conduct an assessment of the process for specific hazards using defined analytical methods, explain multiple options to control the hazard, and to conduct an assessment of cost of implementation.</p>
8	<p>Business Continuity Plans</p> <p>Goetsch, Chapter 17 & 29</p>	<p>Students will be required to develop a business continuity plan.</p> <p>Final Exam</p>

Reading assignments will correspond to weekly lectures. Students will be expected to read texts and periodicals as assigned.