

## Physical Hazards Control (OSHT 1209)



**Credit:** 3 semester credit hours (2 hour lecture, 1hour lab)

**Prerequisite:** Passed the writing portion of COMPASS or other accepted testing instrument, CNBT 2342.

### Course Description

A study of the physical hazards in industry and the methods of workplace design and redesign to control these hazards. Emphasis on the regulation codes and standards associated with the control of physical hazards.

### Required Textbook and Materials

1. Accident Prevention Manual for Business & Industry, Engineering and Technology by Philip E. Hagan, John F. Montgomery, James T. O'Reilly, 13<sup>th</sup> Edition. NSC Press.
  - a. ISBN number is: 9780879122812
2. One, 11/2 – 2 inch 3 ring binder with pockets
  - a. Notebook paper for binder
  - b. \*Organization of notebook; contents should include:
    - Cover page with first and last name
    - Title of course
    - Day and time of weekly class meeting
    - Semester (example, “Spring 2014”)
    - Dividers labeled, syllabus, PPT. lectures, study questions, handouts, exams
    - USB Flashdrive
    - Calculator: TI-30XA (Texas Instruments) \*Other electronic media may not be used during an exam as your calculator.

### Course Objectives

Upon completion of the course the student will be able to:

1. Identify the common physical hazards in industry.
2. Design a hazard free work environment.
3. Utilize hazard recognition techniques to implement safe control practices.
4. Describe the hazard control measures used in workplace designs.
5. List Occupational Safety and Health Administration (OSHA) standards and other regulations.

### Course Outline

- A. Welcome to LIT:
  1. Introduction of faculty and students
  2. Expectations
  3. Policies
- B. The Widget Project

Approved 1/2014

**OSHT 1209**  
Course Syllabus

1. Information and guidelines for the project
2. The 5 processes
3. Resources
4. Examples
- C. Facilities-Safety Through Design
  1. What is it?
  2. Integrating safety through design into the design process
  3. Guidelines
- D. Buildings and Facility Layout
  1. General considerations
  2. Site selection
  3. Outside facilities
  4. Facility railways
  5. Facility layout
  6. Lighting
  7. Use of color
  8. Building structures
- E. Materials Handling and Storage
  1. Hand tools, jacks, hand trucks
  2. Hazardous materials
  3. Guidelines for lifting
  4. Shipping and receiving
- F. Hoisting and Conveying Equipment
  1. Hoisting apparatus
  2. Cranes
  3. Conveyors
  4. Manlifts
- G. Ropes, Chains, and Slings
  1. Fiber rope
  2. Wire rope
  3. Rigging
  4. Methods of attachment
  5. Working load
  6. Inspections
  7. Chains and chain slings
  8. Synthetic web slings
- H. Powered Industrial Trucks
  1. Safeguards
  2. General operating principles
  3. Lift trucks
  4. Inspection and maintenance
- I. Welding and Cutting
  1. Health hazards
  2. Safety hazards
  3. Controlling hazardous exposures
  4. Oxy-fuel welding and cutting

## **OSHT 1209**

### **Course Syllabus**

#### **J. Fire Protection**

1. Fire prevention activities
2. The chemistry of fire
3. Construction methods for fire methods
4. Factors contributing to industrial fires

#### **K. Flammable and Combustible Liquids**

1. General safety measures
2. Combustible-gas indicators
3. Loading and unloading tank cars
4. Loading and unloading tank trucks
5. Storage
6. Common uses of flammable and combustible liquids

#### **L. Electrical Safety**

1. Definitions
2. Electrical injuries
3. Electrical equipment
4. Grounding
5. Determining hazardous locations
6. Maintenance (LOTO)

### **Grading Scale**

A = 90-100

B = 80-89

C = 70-79

D = 60-69

F = Less than 60

\*Notebooks will be graded the evening of the final.

### **Course Evaluation**

Final grades will be calculated according to the following criteria:

Test 1	15%
Test 2	15%
Presentation	30%
Notebook	10%
Final	30%

### **Course Requirements**

1. Students are required to participate in a group project called *The Widget Project*. Each student in the group will be assigned a role and topic to be presented at the end of the semester.
2. Participation in class activities and discussion is mandatory.
3. Students are required to participate in labs.

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### Course Syllabus

### Course Policies

1. No food, drinks, or use of tobacco products in class.
2. Beepers, telephones, headphones, and any other electronic devices must be turned off while in class.
3. Do not bring children to class.
4. No late assignments will be accepted.
5. All exams are worth *at least* 100 and possibly more points. **There are no makeup tests.**
  - a. Attendance. Perfect attendance means not missing any classes or any portion of a class.  
This includes not having any tardies or leaving class early. \*Four tardies equals one absence.

### Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provides comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator, at (409) 880-1737 or visit the office located in the Cecil Beeson Building, room 116B.

### Course Schedule

Week 1	Course Introduction and Policies	
	Widget Project Guidelines and Examples & Processes	
Week 2	MLK Holiday	
Week 3	Chapter 1: Safety Through Design	pp. 3-35
Week 4	Chapter 2: Buildings and Facility Layout	pp. 37-79
Week 5	Chapter 10: Electrical Safety	pp. 349-394
	Preliminary drawings and discussion	
Week 6	Test 1	
Week 7	Chapter 15: Materials Handling and Storage	pp. 545-591
Week 8	Chapter 16: Hoisting and Conveying Equipment	pp. 593-671
Week 9	SPRING BREAK	
Week 10	Chapter 17: Ropes, Chains, and Slings	pp. 674-709
Week 11	Chapter 18: Powered Industrial Trucks/Traffic within the plant	pp. 711-738
Week 12	Test 2	
Week 13	Chapter 22: Welding and Cutting	pp. 832-864
Week 14	Chapter 11: Fire Protection	pp. 395-467
Week 15	Chapter 12: Flammable and Combustible Liquids	pp. 469-506
Week 16	Presentations	
Week 17	Final	

\*The order in which topics are covered is subject to change. Tests dates are also subject to change.

**OSHT 1209**  
Course Syllabus

**Contact Information:**

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If you need to contact me, I prefer email (Email: [joy.griffin@lit.edu](mailto:joy.griffin@lit.edu).) If you must call and I am away from my office, please leave a voice message. I will contact you as soon as my schedule allows.