

ISC 121
ENVIRONMENTAL HEALTH AND SAFETY

COURSE DESCRIPTION:

Prerequisites: None

Corequisites: None

This course covers workplace environmental, health, and safety issues. Emphasis is on managing the implementation and enforcement of environmental health and safety regulations as well as on preventing accidents, injuries, and illnesses. Upon completion, students should be able to demonstrate an understanding of basic concepts of environmental, health, and safety issues.

Course Hours Per Week: Class, 3 Semester Hours Credit, 3.

COURSE OBJECTIVES:

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

- a. Identify approaches to accident investigation.
- b. Use appropriate techniques for identifying tangible and intangible costs associated with accidents.
- c. Use appropriate techniques for describing benefits versus compliance costs associated with safety practices.
- d. Describe and categorize hazards.
- e. Describe and define primary terms and provisions set forth by Occupational Safety and Health Act (OSHA).
- f. Design a simulated program for promoting safe practices at the shop/office level.
- g. Identify and describe use and characteristics of standard personal protective equipment.
- h. Describe acceptable disposal procedures for high-risk materials.
- i. Identify short- and long-range benefits associated with appropriate industrial housekeeping practices.
- j. Design a simulation program for promoting safe practices at shop or office.

OUTLINE OF INSTRUCTION:

- I. The safety and health manager
 - A. A reasonable objective
 - B. Safety versus health
 - C. Role in the corporate structure
 - D. Resources at hand
- II. Development of the safety and health function
 - A. Workers' compensation
 - B. Recordkeeping
 - C. Accident cause analysis
 - D. Organization of committees
 - E. Safety and health economics
 - F. Training

- III. Concepts of hazard avoidance
 - A. The enforcement approach
 - B. The psychological approach
 - C. The engineering approach
 - D. The analytical approach
 - E. Hazards classification scale

- IV. Safety regulations
 - A. Standards
 - B. NIOSH
 - C. Enforcement
 - D. Role of the states
 - E. Future trends

- V. Hazard/accident communication
 - A. Hazard communication
 - B. Environmental Protection Agency
 - C. Safety communication

- VI. Buildings and facilities
 - A. Walking and working surfaces
 - B. Exits
 - C. Illumination
 - D. Miscellaneous facilities
 - E. Sanitation

- VII. Health and environmental control
 - A. Baseline examinations
 - B. Toxic substances
 - C. Measures of exposure
 - D. Standards completion project
 - E. Detecting contaminants
 - F. Ventilation
 - G. Industrial noise
 - H. Radiation
 - I. Computer terminals

- VIII. Hazardous material
 - A. Flammable liquids
 - B. Sources of ignition
 - C. Spray finishing
 - D. Dip tanks
 - E. Explosives
 - F. Liquefied petroleum gas

- IX. Personal protection and first aid
 - A. Hearing protection
 - B. Eye and face protection
 - C. Respiratory protection
 - D. Head protection

- E. Miscellaneous personal protective equipment
- F. First aid

- X. Fire protection
 - A. Industrial fires
 - B. Fire prevention
 - C. Emergency evacuation
 - D. Fire brigades
 - E. Fire extinguishers
 - F. Standpipe and hose systems
 - G. Automatic sprinkler systems
 - H. Fixed extinguishing systems

- XI. Materials handling and storage
 - A. Materials storage
 - B. Industrial trucks
 - C. Cranes
 - D. Slings
 - E. Conveyors
 - F. Lifting

- XII. Machine guarding
 - A. General machine guarding
 - B. Safeguarding the point of operation
 - C. Power presses
 - D. Grinding machines
 - E. Saws
 - F. Belts and pulleys

- XIII. Welding
 - A. Process terminology
 - B. Gas welding hazards
 - C. Arc welding hazards
 - D. Resistance welding hazards
 - E. Fires and explosions
 - F. Eye protection
 - G. Protective clothing
 - H. Gases and fumes

- XIV. Electrical hazards
 - A. Electrocutation hazards
 - B. Fire hazards
 - C. Test equipment
 - D. Frequent violations

- XV. Construction
 - A. General facilities
 - B. Personal protective equipment
 - C. Fire protection
 - D. Tools

- E. Electrical
- F. Ladders and scaffolds
- G. Floors and stairways
- H. Cranes and hoists
- I. Heavy vehicles and equipment
- J. Trenching and excavations
- K. Concrete work
- L. Steel erection
- M. Demolition
- N. Explosive blasting
- O. Electric utilities

REQUIRED TEXTBOOK:

Asfahl, Ray. Industrial Safety and Health Management. 4th ed. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1999.

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.