

# OCCUPATIONAL SAFETY AND HEALTH (OSHA) FOR PUBLIC WORKS

(a 12-week course)

## PREREQUISITES: INTRODUCTION TO PUBLIC WORKS

**GRADING METHOD:** Instructor's Choice Grade or Pass/No Pass.

## COURSE DESCRIPTION

A course covering Occupational Safety and Health standards and the National Occupational Safety and Health Act of 1970 as applied to public works. The safety standards for excavations, trenches, tunnels, rock drilling, construction and hauling equipment, flammable vapors, and toxic substances.

## COURSE CONTENT

### **I. Introduction**

- A. Purpose of OSHA
- B. Early history of state safety regulations
- C. Authority of Division of Industrial Safety
- D. Federal OSHA orders and interim agreement plan

### **II. Safety and Health Responsibilities of Employer and Employee**

- A. Duties of the employer
- B. Safety instructions for all new employees
- C. Duties of the employee
- D. Medical services and first-aid kits
- E. Employee eye, ear and head protection
- F. Employee hand, foot and body protection

### **III. Dust, Fumes, Mists, Vapors and Gases**

- A. Respiratory protection and equipment
- B. Confined spaces and manholes
- C. Flammable vapors
- D. Toxic substances
- E. Internal combustion engines

### **IV. Excavations; Earthwork and Rock Drilling**

- A. Permits now required on several types of excavations
- B. Proper guarding and shoring of excavations
- C. Material handling and "spoil" locations
- D. Protecting excavations from adjacent street and RRY vibrations
- E. Retaining walls and special precautions for excavations

### **V. Trenching, Boring and Shoring Systems**

- A. General information and when permits are required
- B. Protection of men while installing shoring
- C. Trench shoring specifications and materials
- D. Trench shields and welding "huts"
- E. Shafts, belled excavations and access ladders

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- VI. Cranes, Boom-Type Excavators and Derricks**
  - A. Rated load markings, load rating charts
  - B. Crane boom stops, disconnect clutches and operating controls
  - C. Load safety devices, special warning devices
  - D. Handling loads, overhead loads, standard load movement signals
  
- VII. Construction Equipment, Hand Tools, Air Tools**
  - A. Portable compressors, hand-held air tools
  - B. Weed burner operations and hose requirements
  - C. Power concrete trowels and automatic shut-off controls
  - D. Electric motors, rigging equipment and pressure hoses
  - E. Airless spray guns, LP gas space heaters
  
- VIII. Arc Welding, Gas Welding and Cutting**
  - A. Welding cables and connectors
  - B. Shielding for safety, fire prevention
  - C. Storage, handling and use of cylinders
  - D. Pressure regulators, hoses and connections
  
- IX. Powder-Actuated Tools, Power Saws**
  - A. Training and certification in powder-actuated tools
  - B. Powder-actuated tool operator's card, annual tool maintenance
  - C. Radial arm saws, table saws
  - D. Portable circular power saws
  - E. Anti-kickback devices, guards
  
- X. Traffic Control, Flagmen, Barricades and Safety Devices**
  - A. Conducting traffic safely around work areas
  - B. Current best methods of channeling traffic
  - C. Training of flagmen, hand signals and equipment
  
- XI. Hauling and Earth-Moving Equipment**
  - A. Brakes, stopping distances and brake holding performance
  - B. Emergency stopping systems, warning devices
  - C. Roll-over protection structures (ROPS)
  - D. Cab shields, safety belts, fueling precautions
  
- XII. Establishing an Accident Prevention Program**
  - A. Requirements of a safety program
  - B. Advance planning of activities
  - C. Preparing a code of safe practices
  - D. Criminal and civil penalties for safety violations

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## STUDENT LEARNING OUTCOMES

1. Upon completion of this course, students will be able to do the following: **Creative, Critical, and Analytical Thinking**
  - A. OUTCOME: analyze safety and health standards in public works projects and reference appropriate codes, through oral presentation and written examination, as required by Occupational Safety and Health Administration (OSHA).
2. **Communication (personal expression and information acquisition) Information competency**
  - A. OUTCOME: through written examination, explain the role of CAL-OSHA and its assistance in code compliance, as required by the public works profession.
  - B. OUTCOME: identify the responsibilities of employer and employee for establishing and maintaining safe working conditions as mandated by code, through class discussion, oral presentation, and written examination.
3. **Discipline/Subject Area Specific Content Material**
  - A. OUTCOME: cite code application of the construction safety orders and general industry safety orders as mandated by code, through oral presentation and written examination.
  - B. OUTCOME: demonstrate understanding of minimum employer code compliance required in the public works industry by describing the requirements of implementing an "Injury and Illness Prevention Program" through oral presentation and written examination.

## OBJECTIVES

1. Analyze safety and health standards in public works projects and formulate solutions where applicable.
2. Explain the history of Occupational Safety and Health Standards and its revisions throughout the years.
3. Identify the responsibilities of employer and employees for establishing and maintaining safe and healthful working conditions.
4. Pass a comprehensive exam on safety standards for construction and maintenance personnel in simulated situations.
5. Describe procedures for handling flammable vapors and toxic substances.

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## Student Code of Conduct & Scholastic Ethics

### STUDENT RESPONSIBILITIES

A student assumes the obligation to be a responsible member of the MSA Education Program community. All students are responsible to:

1. Contribute to a climate of academic integrity; rational, critical, and creative inquiry; freedom of individual thought and expression consistent with the rights of others; and commitment to the well-being of society as a whole.
2. Adhere to course requirements as specified by instructor(s) in the course syllabus and follow all written and/or verbal instructions given by instructors or designated MSA Education Program representatives.
3. Obey all duly established MSA Education Program, local, state, and federal policies, regulations, and laws.
4. Refrain from actions that deny other members of the MSA Education Program community their rights as described herein.
5. Refrain from acts of violence, intimidation, or degradation toward any person.
6. Cooperate with MSA Education Program administrators, faculty, and staff in the performance of their authorized duties.
7. Give and maintain accurate and complete information for all official records required by the MSA Education Program.
8. Meet all financial obligations to the MSA Education Program.
9. Carry personal picture identification at all times while on MSA Education Program property or at MSA Education Program functions.
10. Attend all judicial proceedings when issued notice to do so.
11. Maintain the highest ethical standards in academic achievement.

### CODE OF ACADEMIC ETHICS: VIOLATIONS

Students enrolled in the MSA Education Program assume the obligation of conducting themselves in accordance with the highest scholarly ethics. Actions constituting violations of academic integrity will be considered a violation of the Student Code of Conduct and include, but are not limited to the following:

1. Cheating - Intentional deceit during the pursuit of academic coursework, tests, class assignments, activities in any testing area, learning center, clinical setting, tutoring session, or in the gathering of research materials is considered cheating. "Cheating" includes, but is not limited to, the following:
  - a) Copying from another student's test paper or knowingly allowing your test to be copied.
  - b) Using materials during a test that were not clearly authorized by the person giving the test.
  - c) Collaborating with another student during a test without permission.
  - d) Knowingly using, buying, selling, offering, transporting, or soliciting any of the contents of a test.
  - e) Taking a test for another student or permitting another student to take a test for you.
  - f) Bribing or attempting to bribe another person to obtain a passing grade or a better grade on a test or for a course.
  - g) Intentional misconstruing of facts or incidents relating to an evaluated exercise or assignment that would change the grade given.
2. Plagiarism - The representing of the work of other persons as one's own, including the use

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## Scholastic Ethics Code

The purpose of the Scholastics Ethics Code is to:

- Encourage and promote positive learning and ethical scholarly behavior;
- Define behavior violating scholastic ethics; and
- Specify procedures for the determination of the facts of the alleged violations, and to define penalties.

## Guidelines for Scholastic Ethics

Students assume full responsibility for the content and integrity of the coursework they submit. The following is a guide to assist students in observing positive behavior in scholastic ethics:

1. Students must do their own work and submit only their own work on essays, examinations, reports, and projects, unless otherwise permitted by the instructor.
2. Students can benefit from working in groups. They may collaborate or cooperate with other students during take-home examinations or projects only if specifically authorized by the instructor in the class syllabus or at the time of the examination.
3. Collusion - Obtaining from or giving to another student unauthorized assistance on material in any course work is collusion.
4. Compromising Instructional and Test Materials - Unauthorized acquisition of instructional and/or testing materials from desks, cabinets, work rooms, classrooms, laboratories, instructors' offices, tutoring labs, testing areas, assessment areas, secretarial offices, MSA Education Program offices, and/or other areas is compromising test materials.
5. Misrepresentation/Fraud - Using false records, false identification papers, unauthorized I.D. cards, or computer access to official MSA Education Program documents or to services such as testing areas, placement assessments, tutoring services, and/or tests or test banks of any type constitutes misrepresentation/fraud.

of term papers written by others and information downloaded from the Internet, is plagiarism. The use of another person's words, ideas, or information without proper acknowledgement is also plagiarism. The student should seek guidance from the instructor about acceptable methods to be used to acknowledge the work and ideas of others.

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## Acknowledgment of Receipt of Syllabus

Student Name \_\_\_\_\_

Home Phone # \_\_\_\_\_

Cell Phone # \_\_\_\_\_

E-mail Mark Preferred (home) \_\_\_\_\_

(work) \_\_\_\_\_

Please complete and return the following acknowledgment to your instructor in class.

I, (print name) \_\_\_\_\_

\_\_\_\_\_, have received my **OSHA for Public Works** syllabus (including course objectives, policies, requirements and schedule), and have read and understand all the enclosed materials, including the course/instructor expectations and deadlines.

Please read the following statements and check all that apply:

\_\_\_\_ I have no objection to receiving phone calls from the instructor at my home phone number.

\_\_\_\_ I have no objection to receiving phone calls from the instructor at my cell phone number.

\_\_\_\_ I have no objection to receiving email from the instructor.

\_\_\_\_ I prefer that the instructor not call or contact me anytime during the semester.

\_\_\_\_ I give permission for my instructor to e-mail any grades and materials associated with my student record for this course during this semester to the email address listed above.

\_\_\_\_ I give permission for my instructor to share any grades and materials associated with my performance for this course during this semester the supervisor authorizing payment and the education committee of the Maintenance Superintendents Association.

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_