

ATPL-1807: SPECIAL TOPICS: OSHA 510

Cuyahoga Community College

Viewing: ATPL-1807 : Special Topics: OSHA 510

Academic Term:

Fall 2026

Subject Code

ATPL - Applied Ind Tech - Plumbers

Course Number:

1807

Title:

Special Topics: OSHA 510

Catalog Description:

This course identifies the hand and power tools used in the plumbing industry and discusses the operation and respective safety concerns as prescribed in the standards found in the Occupational Safety and Health Administration (OSHA) specifications and in the manufacturer's specifications.

Credit Hour(s):

2

Lecture Hour(s):

2

Outcomes

Course Outcome(s):

Incorporate OSHA (Occupational Safety and Hazard Administration) safety regulations into construction businesses and manage respective operations in compliance with required standards.

Objective(s):

1. Explain the General Duty Clause and identify employer responsibilities for jobsite safety and employee and employer compliance with OSHA safety and health standards pursuant to the OSHA Act of 1970.
2. Identify the duties of the employee as prescribed by OSHA to be compliant with safety standards.
3. Explain the Whistle Blower Act and discuss protection from discrimination for the worker for reporting a violation of the statutes.
4. Review the OSHA standard covering jobsite inspections and discuss the right to inspect construction sites within reasonable limits and to question privately any employer, owner, operator, agent, or employee.
5. Explain the process of issuing citations and discuss the categorization of each.
6. Explain Subpart R of the OSHA standard and identify the training requirements, recognize jobsite hazards, and discuss steel erection plans.
7. Identify the resources for help in interpreting OSHA regulations, including websites, publications, and information applications.

Course Outcome(s):

Examine and survey job site conditions and recognize potential fall hazards, scaffold requirements, steel erection procedures, and ladder safety, and discuss respective OSHA regulations required for worker protection.

Objective(s):

- 1.
2. Review the OSHA standard and explain the hazards commonly found on job sites.
3. Identify the fall protection equipment used to arrest falls and discuss the importance of regular inspections.
4. Review the OSHA standard and discuss compliance regulations for multiple types of scaffolding.
5. Identify the common types of scaffolding generally used on jobsites and discuss common uses of each.
6. Discuss the erection procedures for assembling scaffolds and identify manufacturer specifications for each.
7. Differentiate between frame, tube, and coupling and systems scaffolding.
8. Discuss environmental factors relative to scaffold erection.

9. Discuss and identify the employer's pre-construction and working requirements covering steel erection plans, concrete readiness, and staging area locations on jobsites.
10. List the pre-construction plans and best management practices required by the contractor for steel erection.
11. Discuss training requirements for steel erection.
12. Recognize hazards during the steel erection phase of a construction project.
13. Determine the readiness of a jobsite for steel erection.
14. Identify the components of a steel erection plan.
15. Discuss the importance of maintaining custody of a fall protection plan.
16. Discuss the use of ladders used on construction projects and address inspection procedures that identify defective equipment.
17. Identify the different types of ladders used on construction sites.
18. Perform detailed inspections of jobsite ladders to identify defects and or violations.

Course Outcome(s):

Discuss the jobsite use of motorized vehicles and mechanized equipment as prescribed in the OSHA standards, and discuss the dynamics of crane operation and identify and correct potential unsafe work practices.

Objective(s):

1. Explain the dynamics of the operating principles of crane operation.
2. Identify the different types of cranes used in the construction industry.
3. List the different hand signals used with respect to crane operation.
4. Demonstrate and explain the application of hand signals with respect to cranes.
5. Recognize improper crane signaling and discuss the resulting hazards.
6. Discuss employer responsibility and duties with respect to Subpart O and Subpart CC of the OSHA standard.
7. Discuss the jobsite use of motorized vehicles, including swing radii, operator visibility, and being struck by and caught in between hazards.

Course Outcome(s):

Explain and discuss contractor training and code requirements for employees per the OSHA standard.

Objective(s):

1. Identify the respective health hazards with respect to routes of entry into the human body.
2. Describe the health effects on the worker with respect to various job-site health hazards.
3. Discuss the responsibility of management with respect to environmental studies of an existing jobsite and structure.
4. Describe the requirement of training the worker as prescribed in the OSHA standard.
5. Discuss permissible exposure limits of silica, asbestos, and lead for the worker on construction sites.
6. Identify and explain the OSHA working regulations per the existing codes.

Course Outcome(s):

Discuss management methods of controlling jobsite communication and protocol during minor and major construction accidents.

Objective(s):

1. Identify the procedures to be followed by the employer and employee following any major accident.
2. Identify management practices to be followed regarding notifications with respect to accidents on construction jobsites.
3. Collect and investigate details of accidents from scene evidence and reports from witnesses.
4. Describe best practices to be followed in reporting accidents to the media.

Methods of Evaluation:

1. Assignments
2. Participation
3. Assignments

4. Exams/quizzes

Course Content Outline:

1. Construction business safety and management

1. Terminology
 - a. General duty
 - b. Whistle blower
 - c. Diminish
 - d. Competent person
 - e. Qualified person
 - f. Authorized person
 - g. Citation
 - h. Compliance officer
 - i. Informal conference
 - j. Citation contest
 - k. Other than serious
 - l. Willful
 - m. Preamble
 - n. Focus four
1. General Duty Clause
 - a. Employer responsibility
 - b. Consensus standards
1. Duties of employee
 1. Training
 2. Inspections
 3. Hazards review
 4. Safe work practices
 5. Contacting local OSHA office
1. Whistle Blower Act
 1. Right to exercise rights
 2. Right to stop work
 3. Filing procedures
 - a. Employer notification
 - b. Inform OSHA
 - c. Time limitations
1. Jobsite inspections
 1. Right of entry
 2. Opening conference
 3. Inspection
 4. Interview
 5. Closing conference
 6. Employer/employee rights
 - a. Before
 - b. During
 - c. After
1. Issuing citations
 1. Diminish
 2. Other than serious
 3. Serious
 4. Repeat
 5. Willful
1. Subpart R
 1. Training requirements
 - a. Connectors
 - b. Deckers
 2. Erection plan

- a. Crane location
- b. Swing path
- c. Erection sequence
- 3. Anchor bolts
- 4. Concrete strength
- 5. Correction modifications
- 1. Interpreting OSHA regulations
- 1. Code of Federal Regulations CFR 1926
- 2. Website
- 3. Letters of interpretation
- 4. Review commission
- 5. Preamble
- 1. Hazard recognition
 - a. Common hazards
 - i. Struck by
 - ii. Caught in between
 - iii. Falls
 - iv. Electrocution
- 2.
 - a. Fall protection equipment
 - i. Harness
 - ii. Lanyard
 - iii. Anchor point
 - iv. Restraints
- 1. Scaffolding
 - a. Training
 - b. Inspections
 - c. Erecting/dismantling
 - d. Components
- 1.
 - a. Types of scaffolding
 - i. Tube and coupler
 - ii. Frame
 - iii. Aerial lifts
 - iv. Differences
- 1. Scaffold erection procedures
 - a. Plan
 - b. Training
 - c. Fall protection
- 1. Environmental factors
 - a. Weather
 - b. Ground compaction
 - c. Wind
- 1. Pre-construction plan
 - a. Best management practices
 - b. Steel erection plan
 - c. Erection phase hazards
 - i. Crane failure
 - ii. Swing path
 - iii. Capacity overload
 - d. Jobsite readiness
 - i. Lay down area
 - ii. Crane location
 - iii. Firm, drained and level site
 - e. Fall protection custody
 - i. Steel contractor responsibilities
 - ii. Construction manager/general contractor
 - iii. Subcontractor/prime contractor

1. Ladders
 - a. Ratings
 - i. Type I
 - ii. Type II
 - iii. Type III
 - iv. Type I-A
1. Types
 - a. Straight
 - b. A-frame
 - c. Extension
 - d. Fixed
 - e. Job built
2. Inspections
 - a. Feet
 - b. Rails
 - c. Rung lock
 - d. Surface
 - e. Hardware
 - f. Labels
 - g. Rope and pulley
 - h. Rung and steps
 - i. End caps
1. Heavy equipment
 - a. Crane
 - i. Dynamics
 1. Drift
 2. Side loads
 3. Working radius
 - ii. Types
 1. Small hydraulic
 2. Large
 3. Lattice
 4. Truck
 5. Knuckle boom
 - iii. Signals
 1. Hand
 2. Verbal
 3. Audio
1. Unsafe work practices
 - a. Subpart O
 - i. Swing radius
 - ii. Quick coupler
 - iii. Back up alarm
 - iv. Blind spots
 - b. Overloading
 - c. Free swing lifting
 - d. Hydraulics
1.
 - a. Subpart CC
 - i. Controlling entity
 - ii. Certified operator
 - iii. Qualified signal person
 - iv. Qualified rigger
1. Health hazards
 - a. Code requirements
 - i. Environmental studies
 - ii. Prime and subcontractor notifications
 - iii. Training
 - iv. Air sampling

1. Training
 - a. Asbestos
 - i. Class I
 - ii. Class II
 - iii. Class III
 - iv. Class IV
 - b. Silica
 - c. Lead
1. Health effects
 - a. Acute
 - b. Chronic
 - c. Carcinogenic
1. Environmental studies
 - a. Existing jobsite
 - b. Structure
1. Exposure limits
 - a. Lead
 - b. Asbestos
 - c. Silica
1. OSHA working regulations
 - a. Worker safety
 - b. Application
1. Jobsite accident management
 - a. Emergency medical plan
 - i. Fire
 - ii. Weather
 - iii. minor
 - iv. Major
 - v. Fatal
1. Management practices
 - a. Company spokesperson
 - b. Employee management practices
 - c. Pre-job meeting
 - d. Media control
1. Accident investigation
 - a. Photos
 - b. Documentation
 - c. Witnesses
 - i. Primary
 - ii. Secondary
1. Media reporting
 - a. Media
 - b. Employee training
 - c. Spokesperson

Religious Accommodation

Before reviewing the course schedule, students should carefully review the following religious accommodation policy and other required instructional policies:

Religious Accommodation:

Students seeking an accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor with written notice of the specific dates for which the student requires an accommodation and must do so not later than fourteen (14) days after the first day of instruction. Please submit requests for accommodations at this link: <https://portal2.tri-c.edu/ReligiousAccommodation/ReligiousAccommodationForm>. Students with questions about their religious accommodations under Ohio's Testing Your Faith Act may contact the College's Office of General Counsel and Legal Services by phone at 216.987.4856 or via email at legal@tri-c.edu.

Other Required Instructional Policies:

<https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf>

Weekly Schedule

	Topics
Week 1	• Course Introduction & OSHA Overview
Week 2	• General Duty Clause & Employer Responsibilities
Week 3	• Employee Duties & Training Requirements
Week 4	• Whistle Blower Act
Week 5	• OSHA Inspections
Week 6	• Citations & Penalties
Week 7	• Hazard Recognition – Focus Four
Week 8	• Fall Protection
Week 9	• Scaffolding Standards
Week 10	• Ladders & Stairways
Week 11	• Steel Erection (Subpart R)
Week 12	• Pre Construction Planning
Week 13	• Cranes & Heavy Equipment
Week 14	• Health Hazards
Week 15	• Jobsite Accident Management
Week 16	• Course Review & Exam

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Required/Recommended Readings

Instructor-provided materials

Resources for the Instructor

29 CFR 1926 OSHA Construction Industry Regulations. Washington, DC: OSHA, www.osha.gov

Additional Resources for the Instructor

www.osha.gov (<https://catalog.tri-c.edu/www.osha.gov>)

www.oshrc.gov (<https://catalog.tri-c.edu/www.oshrc.gov>)

www.niosh.gov (<https://catalog.tri-c.edu/www.niosh.gov>)

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