

ATIW-1310: SAFETY FOR IRONWORKERS

Cuyahoga Community College

Viewing: ATIW-1310 : Safety for Ironworkers

Board of Trustees:

June 2020

Academic Term:

Fall 2020

Subject Code

ATIW - Appld Indus Tech - Ironworking

Course Number:

1310

Title:

Safety for Ironworkers

Catalog Description:

Occupational safety and health standards for construction industry in general, and ironworking trade specifically. Includes regulations and procedures for fall protection; electrical work; scaffolding; confined spaces; personal protective equipment; materials handling, storage, use and disposal; hand and power tools; steel erection; and cranes, derricks, hoists, elevators, and conveyors.

Credit Hour(s):

1

Lecture Hour(s):

1

Requisites

Prerequisite and Corequisite

Admission to Ironworking apprenticeship program, or departmental approval.

Outcomes

Course Outcome(s):

A. Explain the functions of the Occupational Safety and Health Administration in the construction industry.

Objective(s):

1. Analyze OSHA's mission statement.
2. Identify OSHA's standards.
3. Discuss employer responsibilities in regards to health and safety.
4. Identify workers' rights in regards to health and safety
5. Utilize worker resources.

Course Outcome(s):

B. Analyze worksite situations for safety hazards.

Objective(s):

1. Identify a competent person, who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
 2. Identify a qualified person, who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.
 3. Calculate safety hazards at a specified job site and discuss precautions needed to minimize risk of injury.
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Course Outcome(s):

C. Describe fall protection procedures necessary for OSHA compliance.

Objective(s):

1. Identify fall hazards on a construction site.
 2. Discuss trigger heights for fall protection.
 3. Utilize proper safety equipment for fall protection.
 4. Calculate safe working load for anchor point.
 5. Discuss proper tie off procedures for fall protection.
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Course Outcome(s):

D. Explain safety procedures for electrical work.

Objective(s):

1. Identify electrical hazards on a construction site.
 2. Apply proper use of lock out tag out procedures.
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Course Outcome(s):

E. Describe scaffolding assembly according to OSHA regulations.

Objective(s):

1. Identify the different types of scaffolds.
 2. Apply safe assembly procedures for erecting scaffolding at a construction site.
 3. Analyze proper inspection techniques of scaffolding.
 4. Apply safe disassembly procedures for dismantling scaffolding.
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Course Outcome(s):

F. Explain proper and safe procedures for working in confined spaces.

Objective(s):

1. Identify different types of confined spaces.
 2. Utilize proper air testing techniques for confined spaces.
 3. Apply proper use of respirators when working in a confined space.
 4. Discuss proper safety training for people working in a confined space.
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Course Outcome(s):

G. Categorize personal protective equipment (P.P.E).

Objective(s):

1. Describe the different types of P.P.E.
 2. Demonstrate proper usage of P.P.E.
 3. Select correct P.P.E. for the specified job/task.
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Course Outcome(s):

H. Describe materials handling, storage, use, and disposal.

Objective(s):

1. Explain how to use a Material Safety Data Sheet
 2. Analyze all material safety plaques
 3. Discuss procedures of storing hazardous material
 4. Apply proper P.P.E. when handling material
 5. Analyze proper disposal methods
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Course Outcome(s):

I. Describe safe operation of hand and power tools.

Objective(s):

1. Identify the differences between hand and power tools.
 2. Demonstrate proper use of a ground fault circuit interrupter.
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Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of project assignment

Course Content Outline:

1. Occupational Safety and Health Administration (OSHA)
2. General safety rules and procedures
 - a. Worksite analysis
 - b. Fall protection
 - c. Electrical work
 - d. Scaffolding
 - e. Confined spaces
 - f. Personal protective equipment
 - g. Materials handling
 - i. Storage
 - ii. Use
 - iii. Disposal
 - h. Hand tools
 - i. Power tools
3. Steel erection
4. Cranes
5. Derricks
6. Hoists
7. Elevators
8. Conveyors

Resources

Martin, John Harding. *A Day in the Life of a High-Iron Worker*. Mahwah, New Jersey: Troll Associates, 1984.

Reese, Charles D., and James V. Eidson. *Handbook of OSHA Construction Safety and Health*. 2nd ed. Boca Raton, Florida: Lewis Publishers, c, 2006.

Reese, Charles D., and James V. Eidson. *Annotated Dictionary of Construction Safety*. Boca Raton, Florida: Lewis Publishers, 2017.

OSHA Training Institute. *OSHA 30 - Hour Construction, Student Workbook*. Des Plaines, Illinois: (1555 Drive, Des Plaines 60018). U.S. Department of Labor, 2017.

"General Industry Standards and Interpretations"

"Specific Safety Requirements of the Industrial Commission of Ohio Relating to Construction"

International Association of Bridge, Structural and Ornamental Iron Workers. *Structural Manual for Ironworker, Journeymen and Apprentices. Volumes Apprentices. Volumes 1, 2, 3.* , . Washington, D.C.: Washington, D.C.: AFL-CIO, 2018.

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