

# ATLB-1060: FIELD RIGGING PRACTICES

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## Cuyahoga Community College

**Viewing: ATLB-1060 : Field Rigging Practices**

**Board of Trustees:**

2017-05-25

**Academic Term:**

Spring 2019

**Subject Code**

ATLB - AIT-Construct/Hazard Material

**Course Number:**

1060

**Title:**

Field Rigging Practices

**Catalog Description:**

Certification course covering the Occupational Safety and Health Administration (OSHA) rigging standards in Subpart H and CC. Included are hoisting, rigging and crane safety, rigging hardware and slings, and signaling procedures. Also included is terminology, types of tackle and inspection practices.

**Credit Hour(s):**

1

**Lecture Hour(s):**

1

## Requisites

**Prerequisite and Corequisite**

Departmental approval: admission to Laborer's apprenticeship program.

## Outcomes

**Course Outcome(s):**

Apply the OSHA Rigging and Hoisting standard contained in Subparts H and CC covering work scope, ground conditions and power line safety including key terms and definitions.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. List key terms related to rigging and hoisting.
2. Discuss what is meant by a competent person and explain the respective duties of the position.
3. Differentiate between a qualified rigger and qualified person as defined by OSHA
4. Explain the signal person classification and identify the duties performed.
5. Discuss common errors occurring on jobsites that may result in rigging accidents.

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**Course Outcome(s):**

Discuss hoisting devices, including hardware and slings, respective functions and describe inspection procedures used in identifying equipment defects.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. Identify OSHA equipment removal criterion for each type of sling.
  2. Identify the parts of a hoisting hook assembly and explain the function of each.
  3. List the different types of rigging hardware and discuss respective applications.
  4. Describe different sling configurations and explain the application of each.
  5. Identify and explain the permanent markings on synthetic slings and explain the meaning of each.
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**Course Outcome(s):**

Discuss the responsibilities of a signal person and, methods of communication and accepted signaling procedures.

**Objective(s):**

1. Identify situations that warrant the use of a signal person.
  2. Identify different forms of communication between the signal person and the crane operator.
  3. Discuss the important of good communication practices between the hoist operator and the signal person.
  4. Demonstrate the ability to apply accepted hand signals required for hoisting materials and equipment on construction sites.
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**Methods of Evaluation:**

1. Quizzes
2. Tests
3. Classroom participation

**Course Content Outline:**

1. OSHA Subpart H and CC
  - a. Rigging equipment for material handling
    - i. Types
    - ii. Placement
    - iii. Housekeeping
  - b. Inspection procedures
    - i. Equipment defects
    - ii. Defect identification
  - c. Terms and definitions
    - i. Hoisting
    - ii. Rigging
  - d. Standards
    - i. Permanent markings
    - ii. Safe working loads
    - iii. Scope
    - iv. Alloy steel chains
    - v. Welded steel chain slings
    - vi. Hooks, rings, oblong links
    - vii. Shop hooks and links, makeshift fasteners
  - e. Wire rope
  - f. Cranes and derricks in construction
  - g. Competent Person
    - i. Experience
    - ii. Responsibilities
  - h. Qualified Rigger
    - i. Definition
    - ii. Duties
  - i. Competencies
    - i. Hand signaling
    - ii. Verbal skills
    - iii. Safety training
    - iv. Decision making
    - v. Environmental awareness
2. Hoisting devices

- a. Slings
  - i. Wire rope
  - ii. Metal mesh
  - iii. Synthetic
  - iv. Chains
- b. Components
  - i. Lifting grade chain
  - ii. Load binders and grab hooks
  - iii. Links and assemblies
  - iv. Chain hooks
  - v. Shackles
  - vi. Turnbuckles
  - vii. Hoist rings
  - viii. Sling configurations
  - ix. Single basket hitch
  - x. Double basket hitch
  - xi. Double wrap basket hitch
  - xii. Choker
    - 1. Single
    - 2. Double wrap
    - 3. Sling identification
    - 4. Material
    - 5. Length
    - 6. Lifting limitation
  - xiii. Multi legged bridles
- c. Removal criterion
  - i. Wire rope
    - 1. Broken strands
    - 2. Kinks
    - 3. Birdcage
    - 4. Abrasions
  - ii. Synthetic slings
    - 1. Red wearing thread
    - 2. Charring
    - 3. Cuts
    - 4. Missing tags
- 3. Signal person
  - a. Requirements
    - i. Visual obstructions
    - ii. Coordination of operations
  - b. Communication
    - i. Hand signals
    - ii. Voice commands
      - 1. Radio
      - 2. Telephone
      - 3. Electronic device
    - iii. Communication practices
      - 1. Jobsite conditions
      - 2. Personnel
      - 3. Lifting equipment
    - iv. Hand signaling
      - 1. Boom in or out
      - 2. Travel
      - 3. Lifting
      - 4. Hoist
      - 5. Stop
      - 6. Emergency stop
      - 7. Swing

## Resources

LIUNA Training and Education Fund. *"Hoisting and Rigging Practices"*. current. Pomfret Center, Connecticut 06259, LIUNA Training and Education Fund, 2010.

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Joseph A. MacDonald. *Rigging Equipment Maintenance and Safety Inspection*. current. NY, NY: McGraw-Hill, 2010.

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Pellow Engineering Services Inc. *Bob's Rigging and Crane Handbook*". current. Leawood, Ks. 66209, 2011.

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## Resources Other

"PNNL Hoisting and Rigging Manual"

[http://www.pnl.gov/contracts/hoist\\_rigging/slings.asp](http://www.pnl.gov/contracts/hoist_rigging/slings.asp)

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