ATLT-1010: INDUSTRIAL SAFETY

Cuyahoga Community College

Viewing: ATLT-1010 : Industrial Safety

Board of Trustees:
2015-06-25

Academic Term:
Spring 2019

Subject Code
ATLT - AIT-Lifting Technologies

Course Number:
1010

Title:
Industrial Safety

Catalog Description:
Certification course covering industrial safety as it pertains to motorized lifts. Included are fork lifts and aerial lifts using crane and rigging industry for the movement of personnel, equipment, and/or material.

Credit Hour(s):
1

Lecture Hour(s):
1

Requisites

Prerequisite and Corequisite
Departmental approval: admission to Lifting Technologies apprenticeship program.

Outcomes

Course Outcome(s):
A. Discuss the purpose of industrial safety certification using motorized lifts including related safety standards and equipment types and uses.

Objective(s):
1. A. Discuss the purpose of required certification for the operation of motorized lifts.
2. B. Identify and define the terms related to lifting equipment.
3. C. Discuss the safety standards for motorized as prescribed in the Occupational Safety and Health Administration OSHA and American Society of Mechanical Engineers ASME regulations.
4. D. Differentiate between should and shall as related to OSHA and ASME standards.
5. E. Differentiate between the various standards used for lifting.
6. F. List the different types of equipment used for lifting workers, material and equipment.
7. G. Identify the various uses of aerial lifts and forklift trucks.

Course Outcome(s):
B. Discuss the purpose of industrial safety certification using motorized lifts including related safety standards and equipment types and uses.

Objective(s):
1. C. Discuss specific considerations with respect to critical lifts.
2. D. Determine the load handling capacity of motorized lifts using charts and calculations and explain the importance of accurate application for safe use.
3. E. Identify the maintenance procedures required for motorized lifts as prescribed in the safety standards.
4. A. Explain the application of the standards with respect to worker safety, material handling and operator awareness.
5. B. Discuss load handling concerns covering environmental and type of load configuration.

Course Outcome(s):

C. Discuss the purpose of industrial safety certification using motorized lifts including related safety standards and equipment types and uses.

Objective(s):

1. A. Asses the condition of the lifting equipment for safe use by performing a pre-inspection.
2. B. Select and don the proper PPE, including harness and lanyard, required for lifting operations.
3. C. Examine the load and working conditions and asses for proper lifting methods.
4. D. Review and apply the universal hand signals specific to lifting applications.
5. E. Apply proper maneuverability skills required for lifting applications in various working environments.

Methods of Evaluation:

1. Quizzes
2. Homework
3. Participation
4. Skills tests

Course Content Outline:

1. Motorized lifts: safety and equipment
    a. Purpose of certification
        i. Federal requirements
        ii. Stare requirements
        iii. Personal safety
        iv. Equipment safety
    b. Terminology
        i. Motorized lift
        ii. Load
        iii. Capacity
        iv. Lift
        v. Wide load
        vi. Tall load
        vii. Critical lift
        viii. Cubed load
        ix. Stability
        x. Capacity rating
    c. Safety standards
        i. OSHA 1910.178 Fork truck
        ii. OSHA 1926.453 Aerial lift
        iii. ASME 92-2-2001 Aerial lift
    d. OSHA versus ASME
        i. General construction
        ii. Industrial
        iii. Specific detail
    e. Should versus shall
        i. Legal implications
        ii. Practical
    f. Equipment types
        i. Forklift trucks
            1. Diesel
            2. Gasoline
            3. Battery
        ii. Aerial lift
            1. Scissors lift
            2. Mobile articulation
            3. Manual driven
    g. Uses

i. Load handling
ii. Load movement
iii. Personnel lifting

2. Safety applications
   a. Worker safety
      i. Operation
      ii. Working environment
   b. Load handling concerns
      i. Environmental
      ii. Material type
         1. Weight
         2. Flammable
         3. Explosive
      iii. Load balance
      iv. Load configuration
         1. Wide load
         2. Tall load
         3. Cubed
      v. Loose or secured
   c. Critical lifts
      i. Environment
      ii. Capacity
      iii. Material type
   d. Load handling capacity
      i. Load chart
         1. Standard
         2. Metric
      ii. Calculations
         1. Load
         2. Lifting weight
         3. Reach
      iii. Environmental
         1. Visibility
         2. Terrain
         3. Obstructions
         4. Weather
   e. Maintenance
      i. Lubrication
      ii. Pressure
      iii. Hose condition
      iv. Connections
      v. Hydraulic system
      vi. Steering
      vii. Brakes
3. Equipment operation
   a. Pre-inspection
      i. Structure
      ii. Electrical
      iii. Hydraulic
      iv. Mechanical
   b. User manual
      i. Purpose
      ii. Manufacturer tolerances
      iii. Equipment safety
      iv. Pinch points
      v. Brakes
      vi. Legal
   c. PPE

        i. Personal
            1. Hard hat
            2. Gloves
            3. Boots
            4. Glasses
            5. Hearing
        i. Specific
            1. Seat belt
            2. Harness
            3. Lanyard
    d. Lifting methods
        i. Working conditions
            1. Environment
            2. Lighting
            3. Terrain
        ii. Load assessment
            1. Weight
            2. Configuration
            3. Placement
a. Hand signals
    i. Universal
    ii. Application
b. Maneuverability
    i. Planning
        1. Load configuration
        2. Lifting distance
    ii. Environment
    iii. Lifting stages
        1. Vertical
        2. Travel
    iv. Compromised positions

Resources

Swartz, George. *Forklift Safety.* Lanham, MD: Rowman Littlefield Publishing Group, 1999.

Jefferies, Roger. *Forklift Operator Training.* Roger Jefferies Publishing, 2011.

Reece, Charles D. and Eidson, James Vernon. *OSHA Construction Safety and Health.* Boca Raton, FL: CRC Press, 2006.

Resources Other

1. https://www.asme.org (https://www.osha.com)
2. https://www.osha.com (https://www.mazzellacompanies.com)
3. https://www.mazzellacompanies.com

Top of page
Key: 461