

ATPF-1210: RIGGING

Cuyahoga Community College

Viewing: ATPF-1210 : Rigging

Board of Trustees:

1/30/2025

Academic Term:

Fall 2025

Subject Code

ATPF - Applied Ind Tech - Pipefitters

Course Number:

1210

Title:

Rigging

Catalog Description:

A study of different materials used in the rigging process. Recognize a variety of knots and exhibit an ability to tie them. Includes crane operation and many alternate methods of determining load weights.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

Departmental approval: admission to Pipefitter's apprenticeship program.

Outcomes

Course Outcome(s):

1. Recognize the characteristics and demonstrate an ability to tie knots using a wide variety of fiber ropes.

Objective(s):

1. Specify various fiber types.
2. Assess safe working loads for fiber rope.
3. Demonstrate an ability to recognize and tie fiber rope knots and hitches.

Course Outcome(s):

2. Know the proper care and selection of wire rope slings used.

Objective(s):

1. Review the classifications of wire rope.
2. Assess safe working loads of wire rope.

Course Outcome(s):

3. Recognize the proper care and use of synthetic slings in rigging.

Objective(s):

1. Explain the basic hitches used.
2. Discuss safe working loads for these slings.

3. Review inspection procedures.

Course Outcome(s):

4. Relate work practices involving cranes and rigging operations.

Objective(s):

1. Demonstrate hand signals.
2. Describe rigging safety procedures.
3. Practice rigging operations.
4. Summarize crane operations.

Course Outcome(s):

5. Demonstrate methods for determining load weights.

Objective(s):

1. Locate information available.
2. Practice mathematical calculations.

Methods of Evaluation:

1. Quizzes
2. Tests
3. Field applications
4. Class participation

Course Content Outline:

1. Fiber ropes
 - a. Natural fiber rope
 - i. Manila
 - ii. Sisal
 - iii. Cotton
 - b. Synthetic fiber rope
 - i. Nylon
 - ii. Polyester
 - iii. Polypropylene
 - iv. Mylar
 - v. Combinations
 - c. Safe working loads
 - i. Rule of thumb
 - ii. Off charts
 - d. Knot tying and hitches
 - i. Recognition
 - ii. Tying ability
2. Wire rope slings
3. Classifications
 - a. Right Regular Lay
 - b. Left Regular Lay
 - c. Right Lang Lay
 - d. Left Lang Lay
 - e. Safe working Loads
 - i. 6x19 class wire rope
 - ii. Extra improved plow steel
 - iii. Improved plow steel
 - iv. Rule of thumb for plow steel
 - f. 6x 37 class wire rope

- i. Extra improved plow steel
 - ii. Improved plow steel
 - iii. Rule of thumb for plow steel
- 4. Synthetic Slings
 - a. Basic hitches
 - i. Straight or vertical
 - ii. Choker hitch
 - iii. Basket hitch
 - b. Rated Capacities or SWL
 - i. Dacron Web slings 5000 lb/in Material
 - 1. Basket hitch values
 - 2. Choker hitch values
 - ii. Nylon Web slings 6000 lb/in Material
 - 1. Basket hitch values
 - 2. Choker hitch values
 - iii. Nylon Web slings 8000 lb/in Material
 - 1. Basket hitch values
 - 2. Choker hitch values
 - c. Proper Inspection procedures
- 5. Safe work practices involving cranes and rigging operations
 - a. Crane operations
 - i. Rating charts
 - ii. Proper crane set up
 - b. Standard Hand Signals
 - i. Helicopter hand-signals
 - ii. Crane hand-signals
 - c. Rigging safety
 - i. Competent person
 - ii. Hazard Recognition
 - 1. Working near power lines
 - 2. Emergency situations
 - d. Rigging operations on rigging station
- 6. Determining load weights
 - a. Locating Information available
 - i. Shipping documents
 - ii. Design plans
 - iii. Manufacturer specifications
 - iv. Name plate data
 - b. Weighing the load
 - i. Weight scales
 - ii. Crane load indicating
 - c. Calculations/reasonably accurate estimates
 - i. Cubic feet
 - ii. Cubic inches

Resources

United Association Training Department. *Rigging Manual*. current. Anapolis Md. United Association Training Department, 2011.

Ronald G. Garby. *IPT's Crane and Rigging Handbook*. current. Intl Pub & Training Ltd, 2017.

Broderick Bascom Rope Co. *Rigger's Handbook*. current. Broderick Bascom Rope Co, 2011.

Jay O. Glerum. *Stage Rigging Handbook*. Fourth Edition. Southern Illinois University Press, 2024.

Joseph MacDonald (Author), W. Rossnagel (Author), Lindley Higgins (Author). *Handbook of Rigging: For Construction and Industrial Operations*. 5th. McGraw Hill N.Y. N.Y., 2009.

Resources Other

1. [www.us \(http://www.usrigging.com\)](http://www.usrigging.com)**rigging.com**. 2024.
2. [www. \(http://www.rigging.com\)](http://www.rigging.com)**rigging.com**. 2024.
3. www.industrial-rigging.com
4. <https://uaolr.org/resource/display/22>. 2024.
5. OSHA Construction Industry Resources Page (2024) <https://www.osha.gov/construction> (<https://www.osha.gov/construction/>)
6. National Safety Compliance. *OSHA Construction Industry Regulations*. 7th. Springfield, MO, 2024.

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