

Course Required for:  **Worker Training**

**Purpose:** This course is a requirement for an individual – who is not employed by a licensed rigger – to perform rigging or signaling work in conjunction with the hoisting or lowering of articles on the outside of a building with hoisting equipment. In lieu of completing this course, an individual may instead possess a department approved national rigging certification. (NCCCO Rigger Level I)

**Duration:** 16 Hours of instructional time, excluding breaks and meals

**Class Size:** 1 – 30 Trainees

**NYC Requirement:** To perform rigging or signaling work in conjunction with the hoisting or lowering of articles on the outside of a building with hoisting equipment, an individual must either (i) complete this course, (ii) possess a Department-approved national rigging certification, or (iii) be employed by a licensed Rigger.

**Delivery Requirements:** Hybrid training is permissible for courses that contain both Classroom Lecture and Hands-On as the Instruction Delivery Methods.

Where the Instruction Delivery Method indicates:

- **Hands-On:** the instruction must be delivered onsite and in person. The students must physically handle the items. The procedure being instructed must be demonstrated and explained to the students first.
- **Demonstration:** the demonstration may be delivered either by a person or a video. Video Demonstrations may be delivered by virtual live classroom however, self-study modules are not permissible.
- **Classroom Lecture/ Discussion w A/V:** the instruction may be delivered by virtual live classroom; however, self-study modules are not permissible.

**Facility Requirements:** The Training Facility used by the Course Provider must:

- Have sufficient room to accommodate all expected attendees and the equipment needed to perform hands-on exercises where required as part of the course.
- Make provisions for the presentation of training material in all media types (computer, projector, video/DVD player, etc.); and
- Comply with all applicable laws, rules and regulations relating to occupancy, zoning, egress, fire detection, fire suppression, light, ventilation, cleanliness, sanitary facilities, emergency notification & evacuation procedures.

Training may be held at construction sites, provided the above requirements are met.

**Instructor Requirements:** To deliver this course the instructor(s) must:

- demonstrate that he or she is credentialed or trained in instructional methods and learning processes. The instructor(s) must also successfully demonstrate his or her ability to solve or resolve problems relating to the subject matter by possession of a recognized degree, certificate, licensure, or professional standing, or by extensive knowledge, training, and experience, in the subject matter being taught. To the extent that the course instructor(s) holds, or has held, a trade license issued by the Department, it must be in good standing and not be surrendered to, suspended by, or revoked by the Department and
- Be authorized by the Occupational Safety and Health Administration (OSHA) as a trainer(s) for its Construction and Outreach Program.
- comply with all applicable Federal, State, and local laws, rules and regulations, and the Department's Industry Code of Conduct.

**Course Requirements:** All **topics** listed under **Course Content Requirements** must be covered using the listed **Instructional Delivery Method**. The time dedicated to each outline topic should be appropriate for the course content and can vary depending on the trade or job performed by the trainee. The **Instructional Delivery Materials** used in this course must contain all current applicable NYC Construction Code references, current rules, policies, and Bulletins.

All statistics referenced should reflect the latest publicly available statistics. The selection of Case Studies should prioritize incidents in NYC since the prior renewal period and contain relevant and illustrative photos where available.

Refresher or Renewal Courses should focus on the updates since the prior renewal period.

**Course Content Requirements**

**Instruction Delivery Method**

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|---|---|
| <p>1. Introduction to Rigging – include instruction on:</p> <ul style="list-style-type: none"> <li>• Inspection</li> <li>• Maintenance</li> <li>• Repair</li> <li>• Use and installation of rigging equipment</li> <li>• Hazards associated with rigging</li> <li>• The relevant sections of the building code and industry practice with regards to rigging.</li> <li>• The definition of rigging and the traditional uses for rigging in the construction environment, including:             <ul style="list-style-type: none"> <li>- material hoisting</li> <li>- suspended scaffolds</li> <li>- industrial rope access (IRA)</li> </ul> </li> <li>• Emphasize that this course focuses on material hoisting             <ul style="list-style-type: none"> <li>- additional training required for suspended scaffolds and IRA work.</li> </ul> </li> </ul> | <p>Classroom Lecture/Discussion w A/V</p> |
| <p>2. Crane &amp; Rigging Accidents</p> <ul style="list-style-type: none"> <li>• Common causes of accidents with cranes</li> <li>• Historical crane accidents in NYC and other major cities</li> <li>• Overview of rigging incident statistics for the most current 24-month period:             <ul style="list-style-type: none"> <li>- Failure; injury; death</li> </ul> </li> <li>• Close review of two failure scenarios with emphasis on what went wrong and how the incident could have been prevented.</li> </ul>   | <p>Classroom Lecture/Discussion w A/V</p> |
| <p>3. CFR 29 OSHA 1926 Overview</p> <ul style="list-style-type: none"> <li>• Subparts:             <ul style="list-style-type: none"> <li>• M (Fall Protection)</li> <li>• CC (Cranes and Derricks in Construction)</li> </ul> </li> </ul>  | <p>Classroom Lecture/Discussion w A/V</p> |
| <p>4. NYC Construction Codes Overview-cover all applicable:</p> <ul style="list-style-type: none"> <li>• Code,</li> <li>• Rules,</li> <li>• Related Department policy statements,</li> <li>• Regulatory notices, bulletins and memos, including:             <ul style="list-style-type: none"> <li>- 2022 Building Code</li> <li>- Chapter 33</li> <li>- 1 RCNY 3316-01 &amp; 1 RCNY 3319-01</li> </ul> </li> </ul>  | <p>Classroom Lecture/Discussion w A/V</p> |
| <p>5. NYC Department of Buildings Overview - Cover all:</p> <ul style="list-style-type: none"> <li>•Administrative standard operating procedures,</li> <li>•Policy procedure notices</li> <li>•Permits/Department notifications</li> <li>•Forms</li> <li>•filing and site documents</li> <li>•plans</li> <li>•inspection checklists/logs</li> <li>•wind and weather advisories</li> </ul>   | <p>Classroom Lecture/Discussion w A/V</p> |
| <p>6. Lifting &amp; Lowering Load</p> <ul style="list-style-type: none"> <li>• Overview of general practices involved with hoisting:             <ul style="list-style-type: none"> <li>- Steel</li> <li>- Concrete buckets</li> <li>- Rebar</li> <li>- Masonry</li> <li>- Curtain walls</li> <li>- Similar items commonly hoisted during construction</li> </ul> </li> <li>• Maneuvering and drifting loads</li> <li>• Hazards of:             <ul style="list-style-type: none"> <li>- Operating in a dense urban environment</li> <li>- High winds</li> <li>- Effects of wind on rigging</li> <li>- Operating near power lines</li> </ul> </li> <li>• Prohibition against hoisting over:             <ul style="list-style-type: none"> <li>- Pedestrians</li> <li>- Traffic</li> <li>- Adjoining buildings</li> </ul> </li> </ul>                           | <p>Classroom Lecture/Discussion w A/V</p> |

- Overhead protection/safety exclusion zones during rigging
  - Hazard signage for:
    - Sidewalk sheds
    - Barriers
    - Flag persons
  - Requirements for guardrails and safety netting
  - Securing rigging platforms during the day and at the end of the shift
  - When a licensed rigger or rigging foreman is required
  - When a critical pick plan is required
7. Ropes, Knots & Hitches Overview Classroom Lecture/Discussion w A/V
- Common types of ropes (wire and fiber)
  - Grades of rope and their application
  - Handling of ropes
  - Common knots and hitches and their application
  - Rope and knot strength
    - How hitches and angles impact rope strength
  - Review of manufactures' specifications and limitations for ropes
8. Rigging Equipment Overview Classroom Lecture/Discussion w A/V
- Overview of common types of rigging equipment, their use, handling, strength, and application including:
    - Fasteners
    - Hooks
    - Shackles
    - Thimbles
    - Eyes
    - Other connection & termination of ropes
    - Tackle blocks
    - Slings
    - Come-alongs
    - Pulleys
    - Chains
  - Review of manufacturer's specifications and limitations for rigging equipment
9. Inspection of Ropes & Rigging Equipment Hands-On
- Inspection process and safety checklists, including what to inspect, how to inspect, how frequently to inspect
  - Identification of wear, defects, and failure signs in all rigging equipment
  - Steps to take if hazard discovered.
  - Maintenance, repair/replacement of rigging equipment, rope, rigging equipment, etc.
10. Crane and Hoisting Machine Overview Classroom Demonstration w A/V
- Overview of common types of cranes, hoisting machines and hazards associated with, including:
    - Crush hazards
    - Struck by objects
    - Fall hazards
    - Electrical hazards
  - Overview of crane and hoisting machine setup, including:
    - Ground Conditions
    - Tiebacks for mini cranes
    - Outrigger cribbing and placement
- NOTE: that a licensed hoisting machine operator is required for most cranes and hoisting machines.*
11. Communication between workers & supervisors while rigging Hands-On
- Radios
  - Hand signals
  - Flags, etc.
12. General Principles of Fall Protection Classroom Lecture/Discussion w A/V
- Fall Clearance
  - Total Fall Distance Calculations
  - Minimizing Fall Forces
  - Guarding Against Falling Objects

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|---|-------------------------------------|
| 13. Personal Protective Equipment and Fall Arrest Systems <ul style="list-style-type: none"><li>• Inspection Procedures</li><li>• Donning, Doffing Harness, and Equipment</li><li>• Care of Equipment and Systems</li></ul>         | Hands-On Demonstration & Practice   |
| 14. General Construction Site Hazards   | Classroom Lecture/Discussion w A/V  |
| 15. Handouts <ul style="list-style-type: none"><li>• <a href="#">NYC Buildings Unsafe Condition (311) Notification Procedure</a></li><li>• <a href="#">NYC/DOI Buildings Integrity Training Contact Information Sheet</a></li></ul> | Provide Copy to Trainee & Discuss   |
| 16. Review All Training Topics  | Discussion with Questions & Answers |
| 17. Written (Multiple Choice) Assessment  | Classroom                           |