Department-Approved Course Requirements: 16-Hour Rigging Supervisor Refresher

REVISED 10/25

Course Required for: **Worker Training (Rigging Supervisor) License Qualification (Master Rigger)**

Purpose:

This course is a requirement for an individual who is not a licensed rigger or a designated foreman of a licensed rigger to maintain their designation to supervise 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.

It is also a prerequisite to renewing licensure as a Master Rigger that the applicant must successfully complete a Department-Approved Rigging Supervisor Refresher course that is at least 16 hours in length and meets the requirements of Section 3316.9.2 of the New York City Building Code as mandated by 1 RCNY §104-06.

Duration:

16 Hours of instructional time, excluding breaks and meals

A single session may not exceed 9 1/2 hours, including breaks and meals. If two or more sessions are delivered the same day to the same student roster, a break must be scheduled between the sessions.

Class Size:

1 – 30 Trainees

NYC Requirement:

Per 2022 NYC Building Code §3316.9.2 Certification or training.

All members of the rigging crew engaged in the hoisting or lowering of any suspended article on the outside of any building in the city, **the supervisor of such individuals**, and signalpersons communicating with such individuals, shall either:

- Possess a valid certification for both rigging and signaling. The certification shall be acceptable to the commissioner and issued by a rigging and signaling certification program that is accredited by the National Commission for Certifying Agencies (NCCA) or the American National Standards Institute (ANSI). The certification shall be valid for a term of no more than five years before it has to be renewed and shall cover areas including, but not limited to, the inspection and use of rigging hardware, basic rigging techniques, signaling, and hazards associated with rigging. The certification for a supervisor shall, in addition to the foregoing, include calculations and problem solving with respect to rigging; or
- **Have completed an initial department-approved training course, and four years following the completion of the initial training course, and every four years thereafter, complete a department-approved refresher course. The courses shall be in accordance with the following:**
    - The initial training course for members of the rigging crew, including signalpersons communicating with such crew, shall be, at a minimum, 16 hours long, with the refresher course, at a minimum, 8 hours long. **The initial training course for a supervisor shall be, at a minimum, 32 hours long, with the refresher course, at a minimum, 16 hours long.**

For individuals who fail to complete the required refresher course within any 4-year period, a refresher course shall be considered timely if completed within 1 year after the expiration date of the last previously completed initial or refresher course. During such period, such individual shall not perform or supervise any activity for which the lapsed training is required to perform or supervise such activity until such individual has successfully completed such refresher course. Where more than 1 year has elapsed, such individual shall be required to successfully recomplete the initial training course.

NYC Requirement: (cont'd)

Per 1 RCNY 104-06 (b)(8)

The following courses are required for renewal of the below listed license types:

Master Rigger.

During the one (1) year immediately prior to renewal, the licensee must have successfully completed both

- **A Department-approved rigging supervisor course that is at least sixteen (16) hours in length and meets the requirements of Section 3316.9.2 of the New York City Building Code; and**

A Department-approved lift director course that is at least eight (8) hours in length covering the lift direction provisions of Chapter 33 of the New York City Building Code gth covering the lift direction provisions of Chapter 33 of the New York City Building Code and related rules and regulations, as well as relevant safety precautions.;

Delivery Requirements:

This course contains:

- **Demonstration(s):** shows how something is done while emphasizing its merits. The demonstration may be delivered either by a person or a video. Video Demonstrations may be delivered by a virtual live classroom; however, on-demand self-study modules are not permissible.
- **Classroom Lecture/Discussion w A/V (Audio-Visual):** oral presentation by an instructor to present information or teach students about a particular subject. The instruction may be delivered by a virtual live classroom; however, on-demand self-study modules are not permissible.
- **Handouts**
- **In-class Written Assessment**

This course may be delivered:

- **In-Person:** gathers participants in the same physical location at the same time. Provides face-to-face interaction with the opportunity for participants to share and discuss what they are learning. Allows Hands-On practical exercises.
- **Virtual Live:** a shared online space where learners and trainers work together simultaneously. Usually, these interactions take place through a videoconferencing platform (ex. Zoom, Microsoft Teams).
- **Hybrid:** a combination of In-Person and Virtual Live sessions. Although this course does not have a Hands-On component, the course provider may deliver the course as a combination of In-Person and Virtual Live sessions.

This course may NOT be delivered:

- **On-Demand:** self-paced and can be taken anytime and anywhere from a device with internet access. No live instructor needed. On-Demand is only acceptable for SST courses.

Virtual Live training must comply with the following:

- The course must be approved by the Department.
- The provider must confirm the identification of the individual taking such training by adhering to the actively proctored online format requirements
  - The provider must confirm the identification of the individual prior to providing secure access to the online training.
  - The individual must attest that they are the individual who received the online access and will complete the training without assistance. The online program must have secure access and monitor participation during the course of training to ensure that the individual receiving the training is present for the entirety of the training.
- The provider must ensure that participants have their web-cameras activated and are on-camera for the duration of class.

Facility Requirements:

Per 1 RCNY §105-03 (d) (4) Course Facilities:

The course facilities 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, and evacuation procedures.

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

Instructor Requirements:

Per 1 RCNY §105-03 (e) Course Instructors:

Course providers must require that course instructor(s):

- Demonstrate that they are credentialed or trained in instructional methods and learning processes.
- Successfully demonstrate their 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.
- Comply with all applicable Federal, State, and local laws, rules, and regulations.
- Be in compliance with the Department's Industry Code of Conduct.

Course Requirements:

Each section of the Course Content Requirements must be covered using its designated 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 licensee.

The Instructional 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
1. Introduction to Cranes and Derricks • Instruction on inspection • Maintenance • Repair • Use • Installation • Hazards associated with the relevant sections of the Building Code • Industry practice in regard to rigging	Classroom Lecture/Discussion w A/V
2. Crane and Rigging Incidents • Common causes of incidents with cranes and rigging • Historical crane and rigging incidents in NYC and other major cities • Overview of rigging incident statistics for the most current 24-month period: – Failure – Injury – Death • Close review of two failure scenarios with emphasis on what went wrong and how the incident could have been prevented	Classroom Lecture/Discussion w A/V
3. CFR 29 OSHA 1926 Overview • Subpart CC (Cranes and Derricks in Construction)	Classroom Lecture/Discussion w A/V
4. NYC Code Review – All applicable: • Codes • Rules • Related department policy statements • Regulatory notices • Bulletins and memos – Including: 2022 Building Code ▪ Chapter 33 o 1 RCNY 3316-01 o 1 RCNY 3319-01 o 1 RCNY 3319-02	Classroom Lecture/Discussion w A/V
5. NYC Department of Buildings – All applicable: • Administrative standard operating procedures • Permits • Department notifications • Forms • Filing and site documents • Plans • Inspection checklists/logs • Wind and weather advisories	Classroom Lecture/Discussion w A/V
6. NYC Department of Transportation (DOT) – All applicable requirements by the New York City DOT to operate a crane/derrick: • Codes • Rules • Regulations • Operating procedures • Policy and procedures • Permits/notifications • Forms • Filing and site documents • Plans, etc.	Classroom Lecture/Discussion w A/V

Course Content Requirements	Instruction Delivery Method
7. NYC Transit Authority (NYCTA) – All applicable requirements by the NYCTA to operate a crane • Codes • Rules • Regulations • Operating procedures • Policy and procedures • Permits/notifications • Forms • Filing and site documents • Plans, etc.	Classroom Lecture/Discussion w A/V

8. Basic Building Structure
• Structural framing
• Floor framing
• Roof framing
• Exterior envelope
• Roof parapet
• Masonry walls, columns
• Concrete slabs
• Walls and columns
• Special emphasis on building structures traditionally used to support rigging equipment
  ○ Floors
  ○ Exterior walls, bearing and non-bearing
  ○ Parapets
  ○ Roof dunnage
  ○ Structural steel beams and columns
	Classroom Lecture/Discussion w A/V

9. Inspection of Cranes and Ropes
• Periodic/annual inspection performed by owner, the Department of Buildings, and documentation to be maintained
• Frequent inspection, who can perform, and documentation to be maintained
• How to perform a frequent inspection
• Components inspected during a frequent inspection, and how to identify hazards
• Steps to take if a hazard is discovered, inspection process, and safety checklists, including:
  ○ What to inspect
  ○ How to inspect
  ○ How frequently to inspect, including
  ▪ rigging systems and anchorage
  ▪ individual components: slings, hoists, mortars, etc.
• Identification of wear, defects, and failure signs in all rigging equipment
• Handling, maintenance, repair/replacement of rigging equipment (rope, hardware, etc.). Rope (wire and fiber) and hardware used in rigging (type, strength, application, manufacturers' specifications, and limitations)
• Connection and termination of wire/fiber rope (fasteners, knots, hitches, hooks, shackles, thimbles, eyes, tackle blocks, etc.), including connection to suspended work platforms (i.e., scaffold platforms); hoist loads (materials, equipment).
	Classroom Lecture/Discussion w A/V

10. Maintenance and Repair of Cranes and Ropes • Types of maintenance required • Who can maintain cranes • Who can repair a crane • Safeguards before beginning maintenance or repairs	Classroom Lecture/Discussion w A/V

Course Content Requirements	**Instruction Delivery Method**
11. Crane Setup • Ground conditions • Deviation from plans not permitted • Founding of crane, outrigger placement, and cribbing • Danger to underground infrastructure, excavations, foundations, etc.	Classroom Lecture/Discussion w A/V
12. Reading Plans	Classroom Lecture/Discussion w A/V
13. Site Precautions • Hazards of operating in a dense urban environment • High wind hazards • Operating near power lines • Prohibition against hoisting over pedestrians, traffic, and adjoining buildings • Requirements for shutting down and securing the crane • Communication between workers and supervisors while rigging, radios, hand signals, flags, etc.	Classroom Lecture/Discussion w A/V
14. Reading Load Charts • NYC-approved load chart**s**	Classroom Lecture/Discussion w A/V

15. Lifting and Lowering Loads
• Weights and materials
• Center of gravity
• Rigging requirements
• Critical picks
• Logs and record keeping, including:
  ○ Maintenance records for equipment
  ○ Pre-task and safety meetings
  ○ Hoisting and hoist equipment (manual, electric, etc.)
  ▪ Pulley, block/tackle, sheaves, drums, slings (all types), chains, electric hoist motors
  ○ Capacity
  ○ Rigging of motors
  ○ Mechanical/electrical safety devices and
  ▪ Operation
  ▪ Critical picks
  ▪ Construction and use
• Suspended working platforms, manufacturer's specifications, limitations, max spans, guardrails, planking, debris netting, stirrups, maneuvering, drifting, securing of platform during and end of shift; suspension methods, slings, c-hooks, outrigger beams, clamps, counterweights, shoring scaffolds (outrigger supports), masonry and concrete anchors (expansion, adhesive, screw)
• Pull testing of anchorage devices. Off-the-shelf hardware, as well as site-built hardware systems, must be included.
	Classroom Lecture/Discussion w A/V

16. Operational Aids and Safety Devices • Types of aids, safety devices, functions, how to use, steps to take if the operational aid/safety device is not working. Acceptable means to substitute for a malfunctioning aid/safety device: Personal fall-arrest systems, use, storage, maintenance, installation, and anchorage.	Classroom Lecture/Discussion w A/V
17. PPE • Personal fall arrest systems use, storage, maintenance, installation, and anchorage. • Other types of personal protection (hard hats, respirators, gloves, shoes, eye protection, clothing)	Classroom Lecture/Discussion w A/V

Course Content Requirements	Instruction Delivery Method
18. Crane and Derrick Safety Protocols and Emergency Procedures • Electrical safety during rigging installation and use, including work performed from suspended working decks (welding, use of electrical equipment, etc.). • Overhead protection/safety exclusion zones during rigging, hoisting, and use of scaffolding • Sidewalk sheds; barriers; flag persons; hazard signage.	Classroom Lecture/Discussion w A/V
19. Crane Assembly, Jumping, and Disassembly	Classroom Lecture/Discussion w A/V
20. Rigging Requirements • Definition of rigging, such as the traditional uses for rigging in the construction and industrial environment, including industrial rope access (IRA). • Mathematics of rigging, measurement, symbols, geometry, calculations, leverage, friction, fulcrum, center of gravity, uniform and concentrated loading. • Wind effects on netting and other components. • Calculation of weight, loads, sling loads, drifting loads, balance, and tipping points of objects, center of gravity, non-symmetrical center of gravity, and buoyancy (lifting in water).	Classroom Lecture/Discussion w A/V
21. General Construction Site Hazards	Classroom Lecture/Discussion w A/V
22. Handouts • **NYC Buildings Unsafe Condition (311) Notification Procedure** • **NYC/DOI Buildings Integrity Training Contact Information Sheet**	Provide Copy to Trainee & Discuss
23. Review all Training Topics	Discussion with Q&A
24. Written (Multiple Choice) Assessment	Classroom