Department-Approved Course Requirements: 16-Hour Special Rigger

REVISED 03/26

Course Required for: **License Qualification**

Purpose: This course is a licensing requirement for applicants for a **Special Rigger License**.

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 §28-404.3.2 of the NYC Administrative Code: Special rigger license qualifications.**

All applicants for a **Special Rigger License** shall submit satisfactory proof establishing that the applicant:

- **Has, within the one (1) year prior to application, satisfactorily completed a department-approved training course for special riggers that is at least 16 hours in length;**
- Has, within the one (1) year prior to application, satisfactorily completed a department-approved training course for suspended scaffold supervision that is at least 32 hours in length and in accordance with the requirements of section 3314.4.5.3 of the New York City Building Code; and
- Meets one of the following experience criteria:
    - Has at least two (2) years of experience, within the three (3) years prior to application, working as a designated special rigging foreman in the City of New York under the direct and continuing supervision of a licensed special rigger; or
    - Has at least three (3) years of experience, within the five (5) years prior to application, supervising the installation or use of suspended scaffolds in the City of New York in accordance with section 3314.4 of the New York City Building Code.

Language Requirement: All courses for a license or certificate of competence must be delivered in English.

Per §28-401.6 of the NYC Administrative Code: Qualifications of applicant.

All applicants for a license or certificate of competence shall be able to read and write the English language.

Per 1 RCNY §105-03 (d)(1)(i)

All courses must comply with the Department's course requirements published on its website, which lists the relevant citations for statutory or other requirements listed in this paragraph.

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.
- **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 courses that are for SST only.

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 Special Rigging
• Definition of Rigging
• Traditional uses for rigging in the construction & industrial environment, including:
  o Industrial rope access (IRA).
  o Small hoisting equipment, and
  o Related tools
	Classroom Lecture/Discussion with A/V

2. Rigging Incidents
• Common causes of rigging incidents
  o Historical rigging incidents in NYC & other major cities
  o Overview of rigging incident statistics for the most current 24-month period:
  ▪ Failure
  ▪ Injury
  ▪ Death
• 2 case studies: Close review of two failure scenarios with emphasis on what went wrong & how the incident could have been prevented
  o Suspended Scaffold
  o Other Rigging Incidents
	Classroom Lecture/Discussion with A/V

3. OSHA 1926 Overview - Safety & Health Regulations for Construction
• Brief overview of:
  o Subpart E
  o Subpart L
  o Subpart M; and
  o Subpart X
• Review of:
  o Subpart H (Material Handling, Storage)
  o Subpart K (Electrical)
  o Subpart N (Helicopters, Hoists, Elevators, and Conveyors)
	Classroom Lecture/Discussion with A/V

4. NYC Construction Codes Overview – Cover all applicable:
• Code
  o Brief Overview of 2022 Building Code
  ▪ BC 3314
  o Review of 2022 Building Code
  ▪ BC 3307
  ▪ BC 3316
• Rules
  o 1 RCNY 104-20
  o 1 RCNY 3316-01
• Related department policy statements
• Regulatory notices
• Bulletins and
• Memos
	Classroom Lecture/Discussion with A/V

5. NYC Department of Buildings Overview – Cover all applicable: • Administrative standard operating procedures • Policy procedure notices • Permits/department notifications • Forms, filing, and site documents • Plans • Inspection checklists/logs and • Wind and weather advisories	Classroom Lecture/Discussion with A/V
6. Basic Plan Reading & Symbols • With emphasis on rigging & rigging equipment	Classroom Lecture/Discussion with A/V
7. Design Criteria for Rigging & Factors of Safety	Classroom Lecture/Discussion with A/V

Course Content Requirements	Instruction Delivery Method
8. Basic Building Structure • Structural framing, • Floor, wall, roof framing, • Exterior envelope, • Roof, • Parapet, • Masonry walls, • Columns, • Concrete slabs. • Basic strength & weight of materials used • Deteriorating effects of exposure to elements over time, especially façade elements, such as: o Masonry, o Curtain wall panels, o Decorative stone & tile, o Railings, o Embedded anchors, etc. • Special emphasis on building structures traditionally used to support rigging equipment o Floors, o Exterior walls, bearing & non-bearing, o Parapets, o Roof dunnage, o Structural steel beams & columns	Classroom Lecture/Discussion with A/V
9. Rigging Math & Calculations • Mathematics of rigging: o Measurement, o Symbols, o Geometry, • Calculations of: o Leverage, o Friction, o Fulcrum, o Center of gravity, ▪ Uniform and concentrated loading. • The wind effects on netting & other components. • Calculation of: o Weight, o Loads, o Sling loads, o Drifting loads, o Balance & Tipping points of objects, o Center of gravity, including non-symmetrical center of gravity and o Buoyancy (lifting in water).	Classroom Lecture/Discussion with A/V
10. Hoisting & Rigging Equipment • Manual, electric, etc., • Stirrups, Pulley, • Block/tackle, • Sheaves, • Drums, • Slings (all types), • Chains, • Electric hoist motors, • Capacity, • Rigging of motors, • Mechanical/electrical safety devices and their operation, • Critical picks.	Classroom Lecture/Discussion with A/V

Course Content Requirements	**Instruction Delivery Method**

11. Suspension Methods & Setup
• Slings,
• C-hooks,
• Outrigger beams,
• Clamps,
• Counterweights,
• Shoring scaffolds (outrigger supports),
• Masonry & concrete anchors
  ○ Expansion,
  ○ Adhesive,
  ○ Screw
• Pull testing of anchorage devices,
• Off-the-shelf hardware.
• Site-built hardware & systems
• Ground conditions,
• Deviation from plans not permitted,
• Danger to:
  ○ Underground infrastructure,
  ○ Excavations,
  ○ Foundations, etc.
	Classroom Lecture/Discussion with A/V

12. Lifting & Lowering Loads
• Weights & materials
• Center of gravity
• Rigging requirements
• Critical picks
• Hoisting & hoisting equipment (manual, electric, etc.)
  ○ Pulley
  ○ Block/tackle
  ○ Sheaves
  ○ Drums
  ○ Slings (all types)
  ○ Chains
  ○ Electric hoist motors,
  ○ Capacity
  ○ Rigging of motors
  ○ Mechanical/electrical safety devices & their operation
• Critical picks
• Off-the-shelf hardware, as well as site-built hardware systems
• Material handling during rigging, as well as the use of rigging for its intended purpose
  ○ Hoisting
  ○ Scaffold
  ○ Facade repair, etc.
	Classroom Lecture/Discussion with A/V

13. Communication between workers & supervisors while rigging: • Radios • Hand signals • Flags, etc.	Classroom Lecture/Discussion with A/V

Course Content Requirements	Instruction Delivery Method

14. Safety Protocols/Personal Protective Equipment/Operational Aids
• Types of Aids and 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
  ○ Anchorage
• Other types of personal protection
  ○ Hard hats
  ○ Respirators
  ○ Gloves
  ○ Shoes
  ○ Eye protection
  ○ Clothing
• Overhead protection & safety exclusion zones during rigging and hoisting; including use of:
  ○ Scaffolding
  ○ Sidewalk sheds,
  ○ Barriers
  ○ Flag persons
  ○ Hazard signage
• Electrical safety during rigging installation & use, including work performed from suspended working decks
  ○ Welding
  ○ Use of electrical equipment, etc.
	Classroom Lecture/Discussion with A/V

15. Hazardous/Flammable/Caustic Materials
• Work safety, effect on, and protection of rigging hardware from:
  ○ Damaging materials
  ○ Welding/burning operations
	Classroom Lecture/Discussion with A/V

16. Emergency Procedures during Scaffold Incidents • Failure, • Malfunction, • Power loss, etc.	Classroom Lecture/Discussion with A/V

17. Logs & Record Keeping
• Including maintenance records for:
  ○ Equipment,
  ○ Pre-task meetings
  ○ Safety meetings
	Demonstration

18. Evaluation of Training, Employment, & Qualifications of Rigging & Specialty crews	Classroom Lecture/Discussion with A/V
19. General Construction Site Hazards	Classroom Lecture/Discussion with A/V
20. Handouts • **NYC Buildings Unsafe Condition (311) Notification Procedure** • **NYC/DOI Buildings Integrity Training Contact Information Sheet**	Provide Copy to Trainee & Discuss
21. Review of all Training Topics	Discussion with Questions & Answers
22. Written (Multiple Choice) Assessment	Classroom