Department-Approved Course Requirements: 8-Hour Special Rigger Renewal

REVISED 4/23

Course Required for: ☒ **Licensee Continuing Education**

Purpose: This course is a renewal requirement for the holder of a NYC Special Riggers license.

Duration: 8 Hours of instructional time, excluding breaks & meals

Class Size: 1 – 30 Trainees

NYC Requirement: To renew a New York City Special Rigger license, **licensees** will need to complete 8 hours of training.

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 and 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
- comply with all applicable Federal, State, and local laws, rules and regulations, and the Department's Industry Code of Conduct.

Curriculum 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 licensee. 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 the City 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 and industrial environment, including: – Industrial rope access (IRA). – Small hoisting equipment, and – Related tools	Classroom Lecture/Discussion with A/V
2. Rigging Accidents • Common causes of rigging accidents – Historical rigging accidents in NYC & other major cities – Overview of rigging incident statistics for the most current 24-month period: o Failure o Injury o Death • 2 Case Studies: Close review of two failure scenarios with emphasis on what went wrong and how the incident could have been prevented – Suspended Scaffold – Other Rigging Accidents	Classroom Lecture/Discussion with A/V
3. OSHA 1926 Overview - Safety & Health Regulations for Construction • Brief overview of: – Subpart E – Subpart L – Subpart M – Subpart X • Review of: – Subpart H *(material handling, storage)* – Subpart K *(electrical)* – Subpart N *(helicopters, hoists, elevators, and conveyors)*	Classroom Lecture/Discussion with A/V
4. NYC Construction Codes Overview – Cover all applicable: • Code – Brief Overview of 2022 Building Code o BC 3314 – Review of 2022 Building Code o BC 3307 o BC 3316 • Rules, – 1 RCNY 104-20 – 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 document • Plans • Inspection checklists/logs; and • Wind and weather advisories	Classroom Lecture/Discussion with A/V
6. Basic Plan Reading & Symbols • With emphasis on rigging and rigging equipment	Classroom Lecture/Discussion with A/V
7. Design Criteria for Rigging & Factors of Safety	Classroom Lecture/Discussion with A/V

8. Basic Building Structure — Classroom Lecture/Discussion with A/V
   - Structural framing
   - Floor, wall, roof framing
   - Exterior envelope
   - Roof
   - Parapet
   - Masonry walls
   - Columns
   - Concrete slabs
   - Basic strength and weight of materials used
   - Deteriorating effects of exposure to elements over time, especially façade elements, such as:
     - Masonry
     - Curtain wall panels
     - Decorative stone and tile
     - Railings
     - Embedded anchors, etc.
   - 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

9. Rigging Math & Calculations — Classroom Lecture/Discussion with A/V
   - Mathematics of rigging:
     - Measurement
     - Symbols
     - Geometry
   - Calculations of:
     - Leverage
     - Friction
     - Fulcrum
     - Center of gravity
     - Uniform and concentrated loading
   - The wind effects on netting and other components
   - Calculation of:
     - Weigh,
     - Loads
     - Sling loads
     - Drifting loads
     - Balance & Tipping points of objects
     - Center of gravity, including non-symmetrical center of gravity; and
     - Buoyancy (lifting in water).

10. Hoisting & Rigging Equipment — Classroom Lecture/Discussion with A/V
    - Manual, electric, etc.
    - Stirrups, Pulley
    - Block/tackle
    - Sheaves
    - Drums
    - Slings (all types)
    - Chains
    - Electric hoist motor,
    - Capacity
    - Rigging of motors
    - Mechanical/electrical safety devices and their operation
    - Critical picks

11. Suspension Methods & Setup — Classroom Lecture/Discussion with A/V
    - 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
    - Site-built hardware and systems
    - Ground conditions
    - Deviation from plans not permitted
    - Danger to:
      - underground infrastructure
      - excavations
      - foundations, etc.

12. Lifting & Lowering Loads — Classroom Lecture/Discussion with A/V
    - Weights & materials
    - Center of gravity
    - Rigging requirements
    - Critical picks
    - 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 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 intended purpose
      - Hoisting,
      - Scaffold,
      - Façade repair, etc.

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

14. Safety Protocols/Personal Protective Equipment/Operational Aids — Classroom Lecture/Discussion with A/V
    - Types of:
      - Aids
      - Safety devices
    - Functions
    - How to use
    - Steps to take if operational aid/safety device 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 and 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.

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

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

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

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 — Provide Copy to Trainee & Discuss
    - **NYC Buildings Unsafe Condition (311) Notification Procedure**
    - **NYC/DOI Buildings Integrity Training Contact Information Sheet**

21. Review of all Training Topics — Discussion with Questions & Answers

22. Written Assessment — Classroom