Department-Approved Course Requirements

Course Title: 32-Hour Rigging Supervisor

Course Required for: ☒ **Worker Training**

Purpose: This course is a requirement for an individual – who is not a licensed rigger or a designated foreman of a licensed rigger – 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.

Duration: 32 Hours of instructional time, excluding breaks & meals

Class Size: 1 – 30 trainees

NYC Requirement: To supervise the hoisting or lowering of articles on the outside of a building with hoisting equipment – and a licensed rigger or designated rigging foreman is not required for such work – an individual must either (i) complete this course or (ii) possess a department approved national rigging certification.

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 & 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 Requirement: 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.

Curriculum Requirement: All **topics** listed under **Course Content Outline** 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 & bulletins.

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Course Content Outline	Instruction Delivery Method
1. Introduction to Cranes & Derricks Include instruction on inspection, maintenance, repair, use, installation, hazards associated with the relevant sections of the building code and industry practice with regards to Rigging	Classroom Lecture/Discussion with A/V
2. Crane & RIGGING Accidents Common causes of accidents with cranes Historical crane accidents 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 with A/V
3. CFR 29 OSHA 1926 Overview Subparts: E (PPE-Personal Protective Equipment), H (Material Handling, Storage), K (Electrical), L (Scaffolds), M (Fall Protection), CC (Cranes and Derricks in Construction)	Classroom Lecture/Discussion with A/V
4. NYC Construction Codes Overview Cover all applicable code, rules, related Department policy statements, Regulatory notices, bulletins and memos, including: 2014 Building Code, Chapter 33; Reference Standard RS 19-2	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. NYC Department of Transportation Overview Cover all applicable code, rules, regulations, operating procedures, policy procedures, permits/notifications, forms, filing and site documents, plans, etc., required by the NYC Department of Transportation to operate a crane.	Classroom Lecture/Discussion with A/V
7. NYC Transit Authority Overview Cover all applicable code, rules, regulations, operating procedures, policy procedures, permits/notifications, forms, filing and site documents, plans, etc., required by the MTA/ NYC Transit Authority to operate a crane near TA infrastructure	Classroom Lecture/Discussion with 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 & non-bearing, parapets, roof dunnage, structural steel beams and columns).	Classroom Lecture/Discussion with A/V
9. Inspection of Cranes, Ropes & Operator Responsibility Periodic/annual inspection performed by owner, the Department of Buildings & documentation to be maintained Frequent inspection, who can perform & documentation to be maintained How to perform a frequent inspection Components inspected during a frequent inspection & how to identify hazards Steps to take if hazard discovered Inspection process & safety checklists, including what to inspect, how to inspect, how frequently to inspect, including rigging systems & anchorage, individual components, slings, hoists mortars, etc. Identification of wear, defects, 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 & limitations, handling. Connection & 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 with A/V
10. Maintenance and Repair of Cranes and Ropes Types of maintenance required Who can maintain cranes Who can repair a crane Safeguards to take before beginning maintenance or repairs	Classroom Lecture/Discussion with A/V
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 with A/V
12. Reading Plans	Classroom Lecture/Discussion with A/V
13. Operating Cranes Starting up the crane Hazards of operating in a dense urban environment High wind hazards Operating near power lines Prohibition against hoisting over pedestrians, traffic & adjoining buildings Requirements for shutting down and securing the crane Communication between workers & supervisors while rigging: radios; hand signals; flags; etc.	Classroom Lecture/Discussion with A/V
14. Reading Load Charts NYC-approved load charts	Classroom Lecture/Discussion with A/V

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15. Signaling Communication between workers & supervisors while rigging: radios; hand signals; flags; etc.	Hands-On Demonstration & Practice
16. Lifting & Lowering Loads Weights & materials; Center of gravity; Rigging requirements; Critical Picks Logs & record keeping, including maintenance records for equipment, pre-task & safety meetings. 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 and their operation, critical picks. Construction & use of suspended working platforms, manufacturer's specifications, limitations, max spans, guardrails, planking, debris netting, stirrups, maneuvering, drifting, securing of platform during & 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 with A/V
17. Operational Aids and Safety Devices 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.	Classroom Lecture/Discussion with A/V
18. Crane & Derrick Safety Protocols & Emergency Procedures Electrical safety during rigging installation & use, including work performed from suspended working decks (welding, use of electrical equipment, etc.). Overhead protection/safety exclusion zones during rigging, hoisting & use of scaffolding: sidewalk sheds; barriers; flag persons; hazard signage.	Classroom Lecture/Discussion with A/V
19. Crane Assembly, Jumping & Disassembly	Classroom Lecture/Discussion with A/V
20. Rigging Requirements The definition of Rigging such as the traditional uses for rigging in the construction & industrial environment, including industrial rope access (IRA). The mathematics of Rigging, measurement, symbols, geometry, calculations, leverage, friction, fulcrum, center of gravity, uniform and concentrated loading. Also the wind effects on netting & other components. Calculation of weight, loads, sling loads, drifting loads, balance & tipping points of objects, center of gravity, non-symmetrical center of gravity & buoyancy (lifting in water).	Classroom Lecture/Discussion with A/V
21. General Construction Site Hazards	Classroom Lecture/Discussion with A/V
22. NYC DOB Unsafe Condition (311) Notification Procedure	Provide Copy to Trainee & Discuss
23. NYC DOI/Buildings Integrity Training Contact Information Sheet	Provide Copy to Trainee & Discuss
24. Review all Training Topics	Discussion with Questions & Answers
25. Written (Multiple Choice) Assessment	Classroom