



Department-Approved Course Requirements: 1-Hour Motor Vehicles, Mechanized Equipment and Marine Operations; Rollover Protective Structures and Overhead Protection; and Signs, Signals and Barricades

Course Required for:

Worker Training

Purpose:

This course is a specialized elective course that can help fulfill the requirement for an individual applying for a Site Safety Training Card. **THIS IS AN AWARENESS LEVEL TRAINING ONLY and does not provide any other qualification or authorization outside of the Site Safety Training Card.**

Duration:

1 Hour of instructional time, excluding breaks

Class Size:

1-40 Trainees

NYC Requirement:

In order to continue to operate in the City of New York, the designated construction worker is required to complete a minimum number of hours of approved site safety training and to carry site safety identification cards as proof of completion of the training (As per New York City Local Law 196 of 2017 also known as 'LL196' or 'Local Law'). This course provides one hour towards the satisfaction of that requirement.

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, projectors, video/DVD players, 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
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.

The instructor(s) must also be authorized by the Occupational Safety and Health Administration ('OSHA') as a trainer(s) for its Construction and Outreach Program.

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 and bulletins.

**Course Curriculum
Proposal Package
Review:**

A comprehensive review will be performed by the **Department of Buildings** to determine compliance with these Course Curriculum Requirements.

Instruction Delivery Method

Media: Lecture/Discussion, Slide Presentation, examples of compliant signs and non-compliant signs for examples to be passed around to trainees.

Handouts: Slides, references and handbook

Guided Learning: Trainees will create an exposure control plan for mechanized equipment.

Course Content Outline

1. Introduction
 - a. Instructor introduces topic and describes their qualifications and relevant experience for training this module.
 - b. Establish that all trainees can hear and fully understand you i.e. 'raise your hand if you fully understand me or 'clap your hands if you fully understand me'
 - c. State basic classroom rules, bearings and decorum
 - i. Inform trainees of duration or training and breaks (if any)
 - ii. Remind trainees about limiting distractions (phone use, texting, sidebar conversations)
 - iii. Emergency procedures (location and means of egress, exits or other contingencies)
 - iv. Location of restrooms
 - d. Training Objectives and Expectations:
 - i. Trainees will become learn selected terms and types of mechanized equipment and associated safety controls associated.
 - ii. Trainees will become aware of administrative regulatory safety requirements associated with large equipment.
2. Describe, illustrate and provide different examples of:
 - a. Motor Vehicles
 - b. Mechanized Equipment
 - i. Cranes and Derricks
 - c. Main Operations
 - d. Rollover Protections
 - e. Overhead Protection
 - f. Signs Signals and Barricades
3. Explain, define and illustrate the Safe Operation and Use of Equipment
 - a. Must be equipped for night use and storage equipped with appropriate lights or reflectors, or barricades
 - b. Tire Safety Devices
 - c. Loads must be blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them.
 - d. During repair and when not in use, bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked.
 - e. Controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise

- f. Whenever parked, the parking brake must be set.
 - g. Equipment parked on inclines shall have the wheels chocked and the parking brake set.
 - h. The use, care and charging of all batteries shall conform to electrical and chemical safety standards
 - i. All cab glass shall be safety glass, with no visible distortion affecting the safe operation
4. Explain, define and illustrate Safe Operation and Use of Equipment Around Electrical Hazards
- a. Provide electrical clearances CFR 1926.1400 and 1926.600
 - b. A minimum of 4 feet for voltages less than 50 kV, and 10 feet for voltages over 50 kV, up to and including 345 kV, and 16 feet for voltages up to and including 750 kV
 - c. A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;
 - d. Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded; [1926.600(a)(6)(vi)]
 - e. Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-energized or tests shall be made to determine if electrical charge is induced on the crane.
5. Explain, define and illustrate Safe Operation and Use of Motor Vehicles
- a. All vehicles shall have a service brake system, an emergency brake system, and a parking brake system.
 - b. Whenever visibility conditions warrant additional light, all vehicles, or combinations of vehicles, in use shall be equipped with at least two headlights and two taillights in operable condition.
 - c. All vehicles, or combination of vehicles, shall have brake lights in operable condition regardless of light conditions.
 - d. All vehicles shall be equipped with an adequate audible warning device at the operator's station and in an operable condition.
 - e. No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:
 - i. The vehicle has a reverse signal alarm audible above the surrounding noise level or:
 - ii. The vehicle is backed up only when an observer signals that it is safe to do so.
 - f. All vehicles with cabs shall be equipped with windshields and powered wipers.
 - g. Cracked and broken glass shall be replaced.
 - h. Vehicles operating in areas or under conditions that cause fogging or frosting of the windshields shall be equipped with operable defogging or defrosting devices.
 - i. All haulage vehicles, whose payload is loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials.
 - j. Tools and material shall be secured to prevent movement when transported in the same compartment with employees.
 - k. Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried.
 - l. Trucks with dump bodies shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done.
 - m. Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.

- n. Trip handles for tailgates of dump trucks shall be so arranged that, in dumping, the operator will be in the clear.
 - o. All rubber-tired motor vehicle equipment manufactured shall be equipped with fenders.
6. Inspections of Motor Vehicles
- a. All vehicles in use shall be checked at the beginning of each shift to assure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use:
 - i. Service brakes, including trailer brake connections;
 - ii. Parking system (hand brake);
 - iii. Emergency stopping system (brakes);
 - iv. Tires;
 - v. Horn;
 - vi. Steering mechanism;
 - vii. Coupling devices;
 - viii. Seat belts;
 - ix. Operating controls and safety devices.
7. All defects to Motor Vehicles shall be corrected before the vehicle is placed in service. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.
8. Explain, define and illustrate Material handling equipment
- a. Earthmoving equipment, such as scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.
 - b. Seat belt requirements
9. Explain, define and illustrate Rollover Protective Structures (ROPS)
10. Explain, define and illustrate use of audible alarms
- a. All bidirectional machines, such as rollers, compacters, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.
11. No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.
12. Explain, define and illustrate Marine operations and equipment
- a. Access to barges
 - i. Ramps for access of vehicles to or between barges shall be of adequate strength, provided with side boards, well maintained, and properly secured.
 - ii. Unless employees can step safely to or from the wharf, float, barge, or river towboat, either a ramp, meeting the requirements of applicable OSHA Code or a safe walkway, shall be provided.
 - iii. Jacob's ladders shall be of the double rung or flat tread type. They shall be well maintained and properly secured.
 - iv. A Jacob's ladder shall either hang without slack from its lashings or be pulled up entirely.
 - v. When the upper end of the means of access rests on or is flush with the top of the bulwark, substantial steps properly secured and equipped with at least one substantial handrail approximately 33 inches in height, shall be provided between the top of the bulwark and the deck.
 - vi. Obstructions shall not be laid on or across the gangway.
 - vii. The means of access shall be adequately illuminated for its full length.

- viii. Unless the structure makes it impossible, the means of access shall be so located that the load will not pass over employees.
 - b. Working surfaces of barges
 - i. Employees shall not be permitted to walk along the sides of covered lighters or barges with coamings more than 5 feet high, unless there is a 3-foot clear walkway, or a grab rail, or a taut handline is provided.
 - ii. Decks and other working surfaces shall be maintained in a safe condition.
 - iii. Employees shall not be permitted to pass fore and aft, over, or around deckloads, unless there is a safe passage.
 - iv. Employees shall not be permitted to walk over deckloads from rail to coaming unless there is a safe passage. If it is necessary to stand at the outboard or inboard edge of the deckload where less than 24 inches of bulwark, rail, coaming, or other protection exists, all employees shall be provided with a suitable means of protection against falling from the deckload.
 - c. First aid and lifesaving equipment.
 - i. Provisions for rendering first aid and medical assistance shall be in accordance with subpart D of this part.
 - ii. The employer shall ensure that there is in the vicinity of each barge in use at least one U.S. Coast Guard-approved 30-inch lifering with not less than 90 feet of line attached, and at least one portable or permanent ladder which will reach the top of the apron to the surface of the water. If the above equipment is not available at the pier, the employer shall furnish it during the time that he is working the barge.
 - iii. Employees walking or working on the unguarded decks of barges shall be protected with U.S. Coast Guard-approved work vests or buoyant vests.
13. Explain, define and illustrate proper use of Signs Signals and Barricades
- a. Danger signs
 - b. Caution signs
 - c. Exit signs
 - d. Safety instruction signs
 - e. Directional signs
 - f. Traffic signs
 - g. Accident prevention tags. [1926.200(h)]
 - h. Barricades
14. Resources:
- a. OSHA Standards Applicable Manual for Uniform Traffic Control Devices (MUTCD), ANSI Z35.1-1968, ANSI Z535.2-2011, ANSI Z35.2
 - b. Worker's Rights (See OSHA: <https://www.osha.gov/Publications/OSHA3146.pdf>)
 - c. OSHA Regional Map: <https://www.osha.gov/html/RAmap.html>
15. Debriefing (Informal evaluation)
- a. Guided by instructor, trainees, in a class discussion talk about the course's content and means of delivery and provide verbal feedback to the instructor.
 - b. Instructor takes notes (either committing them to writing during discussion or ascribing them later into noted-comments).
 - c. Instructor applies lessons learned from debriefing to future trainings.
16. Written (Multiple Choice) Assessment