

# CARPENTER (RESIDENTIAL)

## APPENDIX A

O\*NET 47-2031.01

This training outline is a minimum standard for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom training.

### WORK PROCESSES

#### Approximate Hours

#### A. Safety, Tools, Materials and Rigging

500

1. Using safe work practices.
2. Proper use, care and maintenance of trade-related tools, instruments, machines and equipment.
3. Identifying and safely using building materials, fasteners, adhesives.
4. Signaling, rigging, hoisting.
5. Safely using, erecting, inspecting and maintaining ladders, scaffolds, rigging.
6. Installing and maintaining weather protection devices (if applicable).
7. Safely loading, moving and unloading materials, heavy objects by manual methods, forklift (forklift operation is optional\*).
8. Measuring, marking and safely cutting materials.
9. Using transit and level, laser level (if applicable).
10. Safely using oxy/acetylene cutting torch (optional\*).
11. Welding for the trade (optional\*).
12. Using powder actuated tools (if applicable).
13. Plasma cutting (optional\*).
14. Asbestos abatement (optional\*).
15. Lead abatement (optional\*).

#### B. Layout and Site Preparation

300

1. Ensuring conformity of design and materials to blueprints, plans, specifications, work orders.

2. Removing damaged or defective parts or sections of old construction (if in keeping with area practices).
3. Laying out partitions, stairs, roofs, windows, doors, box out for concrete.
4. Identifying direction and layout of studs.
5. Laying out foundation lines.
6. Laying out and erecting batter boards and locating building lines.

### **C. Form Building**

**550**

1. Locating area from blueprints, specifications, plot plan, work orders.
2. Building and placing straight and irregular concrete forms for footings, slabs, floors, stairways, walls, columns, beams, girders.
3. Stripping and erecting forms for reuse.
4. Locating and erecting forms for ground-mounted solar collector systems (optional\*).
5. Bracing or anchoring framework, forms, structures.
6. Insulating concrete forms.

### **D. Wood Framing**

**800**

1. Shaping, cutting, fitting, joining wood materials.
2. Standard wood framing and building:
  - a. floors
  - b. walls
  - c. stairs
  - d. door frames/jambs
  - e. decks
  - f. patios
  - g. sills
  - h. hoists
  - i. headers
  - j. girders
  - k. beams
  - l. window frames
  - m. foundations (optional\*)

- n. roofs
- o. roof decking
- p. truss roof
- q. posts
- 3. heavy timber (optional\*)
- 4. other specialty work (optional\*)

## **E. Metal Framing**

**800**

- 1. Shaping, cutting, fitting, joining metal materials.
- 2. Standard metal framing and building:
  - a. floors
  - b. joists
  - c. stairs
  - d. girders
  - e. posts
  - f. window frames
  - g. sills
  - h. roofs
  - i. headers
  - j. decks
  - k. patios
  - l. door frames/jambs
  - m. walls
  - n. roof decking
  - o. rafter
  - p. truss roofs
  - q. beams
- 3. other specialty work (optional\*)

## **F. Exterior Finish**

**850**

- 1. Applying roof covering (if in keeping with area practices).
- 2. Applying roof finishes (if in keeping with area practices).
- 3. Installing gutters (if in keeping with area practices).
- 4. Constructing and applying all types of cornice and soffit.
- 5. Finishing gable ends.

6. Constructing verge or bargeboards.
7. Constructing and setting columns, newels, railings, balusters.
8. Constructing porches and canopies.
9. Applying insulation board, house wrap, outside wall coverings (if in keeping practices).
10. Applying siding.
11. Installing exterior doors, windows, trim and hardware.
12. Applying adhesives, sealants, caulking, coatings.
13. Installing garage doors (optional\*).

## **G. Interior Finish**

**850**

1. Installing drywall.
2. Installing interior doors and hardware.
3. Applying trim.
4. Installing stair work.
5. Installing cabinets, cupboards, shelving and miscellaneous fixtures.
6. Installing countertops.
7. Installing paneling, bead board and wainscoting (if applicable).
8. Installing subflooring.
9. Laying wood flooring; other flooring (if in keeping with area practices).
10. Installing acoustical ceilings (if applicable).

## **H. Weatherization**

**550**

1. Accurately assessing potential work area safety hazards including but not limited to: asbestos, lead, mold, mildew, biological (bird, bat, rodent droppings), tripping hazards, fire hazards.
2. Identifying and using “green” materials for a healthful indoor environment (if applicable).
3. Understanding, knowledge of, installation, and repair of all types of insulation; R and U values; sound control products; air sealing techniques and materials.
4. Possessing a working knowledge of potential hazards of insulating around knob and tube wiring.

5. Safely operating and properly maintaining insulation blowing machines and generators.
6. Selecting appropriate materials and amounts based on building characteristics.
7. Properly applying caulk.
8. Installation of replacement windows and doors.
9. Installing weather-stripping on doors, windows, attic hatches.
10. Minor window repairs.
11. Making repairs to sheetrock (drywall) and minor repairs to plaster.
12. Applying water and vapor barriers to seal the building envelope.
13. Performing siding repairs.
14. Making roofing repairs to seal the building envelope (if in keeping with area practice)

**Approximate Total Hours      5200**

\* If optional components are not selected, the time should be devoted to further mastery of the required Work Processes.

*Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to <https://dol.ny.gov/public-work-and-prevailing-wage>*

## CARPENTER (RESIDENTIAL)

### APPENDIX B

#### RELATED INSTRUCTION

##### Safety

1. General Safety
2. OSHA 10- Hour Construction Course (if required for Public Work)
3. Basic Rigging, Hardware and Hand Signals
4. Scaffolding Safety and Scaffolding Regulations
5. Aerial Lift Safety (if applicable)
6. Fall Protection
7. Ergonomics for Carpenters
8. Forklift Safety (if apprentice will operate forklift on-the-job)
9. Welding Safety (if Work Process A-11 is selected)
10. Proper Lifting Techniques
11. Asbestos Safety:
  - a. If apprentice will do any handling of asbestos:
    - i. Successfully complete a course approved by the New York State Department of Health for “Asbestos Handler” and obtain, and keep current, an “Asbestos Handler (Worker)” certificate from the New York State Department of Labor
  - b. If apprentice will do no handling of asbestos:
    - i. Asbestos Awareness – minimum 4 hours (see attachment)
12. Lead Abatement (if Work Process A-15 is selected)
13. E.P.A. Lead Renovator Course
14. Right to Know/ Material Safety Data Sheets (MSDS)
15. Drug and Alcohol Awareness
16. Proper Use of Personal Protective Equipment (PPE)
17. First Aid and CPR – minimum 6.5 hours every 3 years
18. Sexual Harassment Prevention Training – must comply with Section 201-g of the Labor Law
19. Fire Prevention

20. Mold and Mildew Hazards in the Workplace
21. Biological Hazards in the Workplace

### **Math**

1. Review and Application of Basic Mathematics
2. Accurate Measurement
3. Basic Geometry
4. Trade Math Applications
5. Materials and Cost Estimating (at option of sponsor)

### **Blueprints**

1. Blueprint Reading
2. Reading Building and Plot Plans, Specifications, Codes
3. Freehand Sketching and Layouts

### **Trade Theory and Science**

1. Fundamentals of Carpentry and Woodworking
2. Fundamentals of Building Construction
3. Trade Related Terminology
4. Materials and Fasteners
5. Trade Related Machines/ Machinery
6. Tools of the Trades
7. Scaffolding
8. Rigging Hardware and Procedures
9. Project Layout
10. Concrete Formwork
11. Foundations (if work process D-2-m is selected)
12. Framing: Wood, Metal
13. Exterior Finishing
14. Windows and Doors
15. Roof Framing
16. Siding
17. Interior Finishing
18. Drywall
19. Stair Building
20. Cutting and Welding Theory for the Trade

21. Builder's Transit Level
22. Laser Level
23. Local, State and Federal Codes Related to the Trade
24. Forklift; Operation and Certification (if apprentice will operate forklift on-the-job)

### **Weatherization**

1. Basic Steps of Weatherization Process: Audit/Testing, Installation, Monitoring/Inspection
2. Familiarization with Building Performance Institute's Building Analyst and Envelope Professional Certifications
3. Relevant Trade Knowledge of the Department of Energy Weatherization Program Regulations
4. Understanding Weatherization Audit Results and Proposed Work Orders for Energy Efficiency Improvements
5. The Whole Home Approach
6. Healthful Indoor Environment
7. Familiarization with Green Materials of the Trade
8. Building Envelope and Building Framing Types
9. Insulation Types, R and U Values, Applications
10. Air Sealing
11. Caulking
12. Weather-stripping
13. Water and Vapor Barriers
14. Minimum Ventilation Rate/ Building Tightness
15. Replacement Windows and Doors

### **Other Workplace Skills**

1. Computer Basics
2. Written and Oral Communication
3. Time Management (at option of sponsor)

### **Other Related Courses as Necessary**

A Minimum of 144 Hours of Related Instruction is Required for Each Apprentice for Each Year

Appendix B topics are approved by New York State Education Department.

## ATTACHMENT TO APPENDIX B

### Asbestos Awareness

This course must be delivered by one of the following:

1. A provider currently approved by the New York State Department of Health to deliver asbestos safety training.
2. A person holding a current Asbestos Handler certificate from the New York State Department of Labor in the title of: Inspector, Supervisor, Project Monitor, Management Planner, or Project Designer.
3. Anyone otherwise approved by the New York State Education Department.

Minimum course contents must include the following:

1. Definition of asbestos
2. Types and physical characteristics
3. Uses and applications
4. Health effects:
  - a. Asbestos-related diseases
  - b. Risks to families
  - c. Cigarette smoking
  - d. Lack of safe exposure level
5. Employer-specific procedures to follow in case of potential exposure, including making a supervisor or building owner immediately aware of any suspected incidental asbestos disturbance so that proper containment and abatement procedures can be initiated promptly.

**Notwithstanding the above course requirement, employers are advised that they must also be in compliance with New York State Department of Labor Industrial Code Rule 56 at all times.**

**Employers are further advised, and must advise all apprentices, that completion of the above course requirement does not authorize any person to remove, encapsulate, enclose, repair, disturb, or abate in any manner, any friable or non-friable asbestos, asbestos containing material, presumed asbestos containing material, or suspect miscellaneous asbestos containing material.**