General Carpentry

Orientation to Carpentry (2.5 Hours)
(Module ID 27101) Reviews the carpentry profession, describes the apprentice program, identifies career opportunities for carpenters, and lists the skills, responsibilities, and characteristics a carpenter should possess. Emphasizes the importance of site-specific safety and occupational safety relevant to the craft.

Building Materials and Fasteners (20 Hours)
(Module ID 27102) Introduces building materials used in construction, including lumber, engineered wood products, concrete materials, steel framing, and a variety of fasteners and anchors. Also describes material handling and storage techniques, and basic calculations used to determine needed framing and concrete quantities.

Construction Plans & Documents (20 Hours)
(Module ID 27113) Describes construction plans and documents used by carpenters, including drawings found in commercial and residential plans. Focuses on information included in civil, architectural, and structural drawings. Also covers the importance of specifications, and reviews building codes used by carpenters.

Principles of Site and Building Layout (20 hours)
(Module ID 27114) Explains how carpenters use specific construction drawings, as well as measuring tools and leveling instruments to perform basic site and building layout activities. Along with providing step-by-step instructions, this module describes the use of construction drawings and math to guarantee the accuracy of the building site.

Floor Systems (25 Hours)
ISBN 978-0-13-787628-0
(Module ID 27105) Introduces carpenters to drawings used to construct flooring systems. Defines framing basics and the procedures for laying out and constructing a wood floor using common lumber, as well as engineered building materials. Covers the installation of floor components including sill plates, beams, girders, joists, and subfloors.

Wall Systems (10 Hours)
(Module ID 27111) Describes basic wall systems and provides step-by-step instructions for laying out and framing both wood and steel components. Explains the process for laying out and framing walls. Includes instructions for assembling, erecting, and verifying plumb for wall systems.

Roof Framing (47.5 Hours)
(Module ID 27112) Describes the most common roof types and introduces basic roof framing components. Includes instructions for laying out rafters for gable roofs, hip roofs, and valley intersections. Covers stick-built and truss-built roofs, and includes the basics of roof sheathing installation.

Basic Stair Layout (12.5 Hours)
(Module ID 27110) Introduces stair types, basic stair system components, and common codes associated with stairway construction. Explains essential stairway construction techniques, including how to construct stringers, measure and calculate rise and run, and build concrete stairway forms.

Building Envelope Systems (12.5 Hours)
(Module ID 27109) Introduces the concepts of moisture and insulation control from the ground up. Describes types of building wrap, windows, skylights and doors, while providing instructions for installation.
**CURRICULUM NOTES**

- 237.5 Hours (includes Core)
- Revised: 2013, Fifth Edition
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.
- A Spanish translation of the fourth edition is available. Please see NCCER’s online catalog for more information.

**HARDCOVER**

- **Trainee Guide:** $69.99
- **ISBN:** 978-0-13-340380-0

**PAPERBACK**

- **Trainee Guide:** $69.99
- **ISBN:** 978-0-13-340237-7

**DIGITAL**

- **NCCERconnect Access Card:** $69.99
- **NCCERconnect + Hardcover Trainee Guide:** $94.99
- **NCCERconnect + Paperback Trainee Guide:** $94.99
- **ISBN:** 978-0-13-429856-6

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**MODULES**

The modules listed below are all included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

**Orientation to the Trade (2.5 Hours)**

(Module ID 27101-13) Reviews the history of the trade, describes the apprentice program, identifies career opportunities for carpenters and construction workers, and lists the skills, responsibilities, and characteristics a worker should possess. Emphasizes the importance of safety in the construction industry.

**Building Materials, Fasteners, and Adhesives (20 Hours)**

(Module ID 27102-13) Introduces the building materials used in construction work, including lumber, sheet materials, engineered wood products, structural concrete, and structural steel. Also describes the fasteners and adhesives used in construction work. Discusses the methods of squaring a building.

**Hand and Power Tools (70 Hours)**

(Module ID 27103-13) Provides descriptions of hand tools and power tools used by carpenters. Emphasizes safe and proper operation, as well as care and maintenance.

**Introduction to Construction Drawings, Specifications, and Layout (22.5 Hours)**

(Module ID 27104-13) Covers the techniques for reading and using construction drawings and specifications, with an emphasis on drawings and information relevant to the carpentry trade. Introduces quantity takeoffs.

**Floor Systems (25 Hours)**

(Module ID 27105-13) Covers framing basics and the procedures for laying out and constructing a wood floor using common lumber, as well as engineered building materials.

**Wall Systems (10 Hours)**

(Module ID 27111-13) Describes procedures for laying out and framing walls, including roughing-in door and window openings, constructing corners, partition Ts, and bracing walls. Includes the procedure to estimate the materials required to frame walls.

**Ceiling Joist and Roof Framing (47.5 Hours)**

(Module ID 27112-13) Describes types of roofs and provides instructions for laying out rafters for gable roofs, hip roofs, and valley intersections. Covers stick-built and built-up roofs. Includes the basics of roof sheathing installation.

**Introduction to Building Envelope Systems (12.5 Hours)**

(Module ID 27109-13) Introduces the concept of the building envelope and explains its components. Describes types of windows, skylights, and exterior doors, and provides instructions for installation.

**Basic Stair Layout (12.5 Hours)**

ISBN 978-0-13-340306-0
(Module ID 27110-13) Introduces types of stairs and common building code requirements related to stairs. Focuses on techniques for measuring and calculating rise, run, and stairwell openings, laying out stringers, and fabricating basic stairways.

**Thermal and Moisture Protection (7.5 Hours)**

(Module ID 27203-13) Covers the selection and installation of various types of insulating materials in walls, floors, and attics. Also covers the uses and installation practices for vapor barriers and waterproofing materials.

**Roofing Applications (25 Hours)**

(Module ID 27202-13) Describes how to properly prepare the roof deck and install roofing for residential and commercial buildings.

**Doors and Door Hardware (20 Hours)**

(Module ID 27208-13) Describes the installation of metal doors and related hardware in steel-framed, wood-framed, and masonry walls, along with their related hardware, such as locksets and door closers. Also discusses the installation of wood doors, folding doors, and pocket doors.

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Continued on following page
Drywall Installation (15 Hours)
(Module ID 27206-13) Describes the various types of gypsum drywall, their uses, and the fastening devices and methods used to install them. Contains detailed instructions for installing drywall on walls and ceilings using nails, drywall screws, and adhesives. Also discusses fire- and sound-rated walls.

Drywall Finishing (17.5 Hours)
ISBN 978-0-13-377913-4
(Module ID 27207-13) Describes the materials, tools, and methods used to finish and patch gypsum drywall. Also discussed automatic and manual taping and finishing tools.

Drywall Finishing (continued)

Suspended Ceilings Elective for Residential Path
(Module ID 27209-13) Describes the materials, layout, and installation procedures for many types of suspended ceilings used in commercial construction, as well as ceiling tiles, drywall suspension systems, and pan-type ceilings.

Window, Door, Floor, and Ceiling Trim
(25 Hours)
(Module ID 27210-13) Describes the different types of trim used in finish work and focuses on the proper methods for selecting, cutting, and fastening trim to achieve a professional finished appearance.

Rigging Practices (15 Hours)
(Module ID 38102-11; from Basic Rigger, Second Edition) Describes basic rigging and crane hazards as well as safety practices related to general rigging activities, working around power lines, and emergency response. Covers procedures for using slings and rigging pipes and valves.

Rigging Equipment (10 Hours)
ISBN 978-0-13-378675-0
(Module ID 38101-11; from Basic Rigger, Second Edition) Describes the use and inspection of basic equipment and hardware used in rigging, including slings, wire, rope, and chains. Discusses attaching hardware such as shackles, eyebolts, and hooks, as well as rigging knots. Explains sling angles. Covers tuggers, jacks, hoists, and ratchet-lever hoists.

Trenching and Excavating (15 Hours)
(Module ID 27306-14) Provides an introduction to working in and around excavations, particularly in preparing building foundations. Describes types and bearing capacities of soils; procedures used in shoring, shielding, and sloping trenches and excavations; trenching safety requirements, including recognition of unsafe conditions; and mitigation of groundwater and rock when excavating foundations.

Basic Rigger, Second Edition
(Module ID 38101-11; from Basic Rigger, Second Edition) Describes the selection and uses of different types of reinforcing materials. Describes requirements for bending, cutting, splicing, and tying reinforcing steel and the placement of steel in footings and foundations, walls, columns, and beams and girders.

Foundations and Slabs-On-Grade (20 Hours)
(Module ID 27307-14) Covers basic site layout safety, tools, and methods; layout and construction of deep and shallow foundations; types of foundation forms; layout and formation of slabs-on-grade; and forms used for curbing and paving.

Reinforcing Concrete (15 Hours)
(Module ID 27304-14) Describes how tilt-up concrete construction is used and how tilt-up panels are formed, erected, and braced. Covers the installation of rebar and types of embedments used to lift and brace the panels. Also covers methods used to create architectural and decorative treatments.

Horizontal Formwork (15 Hours)
(Module ID 27309-14) Covers elevated decks and formwork systems and methods used in their construction. Covers joint, pan, beam and slab, flat slab, composite slab, and specialty form systems and provides instructions for the use of flying decks, as well as shoring and reshoring systems.

Foundations and Slabs-On-Grade (continued)

Vertical Formwork (22.5 Hours)
(Module ID 27308-14) Covers the applications and construction methods for types of forming and form hardware systems for walls, columns, and stairs, as well as slip and climbing forms. Provides an overview of the assembly, erection, and strippin of gang forms.

Tilt-Up Wall Systems (17.5 Hours)
(Module ID 27310-14) Describes how tilt-up concrete construction is used and how tilt-up panels are formed, erected, and braced. Covers the installation of rebar and types of embedments used to lift and brace the panels. Also covers methods used to create architectural and decorative treatments.

Cabinet Installation (10 Hours)
(Module ID 27211-13) Provides detailed instructions for the selection and installation of base and wall cabinets and countertops.
Carpentry Level 4

L4 CARPENTRY ADVANCED

LEVEL 4

Curriculum Notes
• 182.5 Hours (162.5 Required, 20 Elective)
• Revised 2014, Fifth Edition
• Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK  ISBN

DIGITAL

MODULES
All of the modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Site Layout One: Differential Leveling  (20 Hours)
ISBN 978-0-13-378698-9 (Module ID 27401-14) Covers the principles, equipment, and methods used to perform differential leveling. Also covers the layout responsibilities of surveyors, field engineers, and carpenters; interpretation and use of site/plot plan drawings; use of laser instruments; and methods used for on-site communication.

Advanced Roof Systems  (20 Hours)
ISBN 978-0-13-378702-3 (Module ID 27403-14) Covers commercial roofing materials and structures and describes the procedures for installing commercial roofing such as lap seam, standing seam, and built-up roofs.

Advanced Wall Systems  (25 Hours)
ISBN 978-0-13-378704-7 (Module ID 27404-14) Covers installation of a variety of finishing materials, including concrete masonry units and brick. Also covers installation of curtain walls and fire-rated commercial construction.

Advanced Stair Systems  (25 Hours)
ISBN 978-0-13-378705-4 (Module ID 27405-14) Provides extensive coverage of the materials and techniques used in finishing wooden staircases. Also covers a variety of stair systems used in commercial construction.

Introduction to Construction Equipment  (7.5 Hours)
ISBN 978-0-13-378706-1 (Module ID 27406-14) Introduces construction equipment, including the aerial lift, skid steer loader, electric power generator, compressor, compactor, and forklift. An overview of general safety, operation, and maintenance procedures is provided.

Introduction to Oxyfuel Cutting and Arc Welding  (20 Elective Hours)
ISBN 978-0-13-378707-8 (Module ID 27407-14) Introduces the equipment, procedures, and safety practices used in cutting steel with oxyfuel equipment, as well as shielded metal arc welding, gas-tungsten arc welding, and gas metal arc welding. Labs include practice in cutting and welding techniques.

Site Preparation  (7.5 Hours)
ISBN 978-0-13-378697-2 (Module ID 27409-14) Covers the planning process that precedes the start of work on a construction site, including environmental considerations, personnel issues, access roads, traffic control, permits, site safety, utilities, and crane-related concerns.

Fundamentals of Crew Leadership  (20 Hours)
ISBN 978-0-13-378708-5 (Module ID 27401-11, Second Edition) Covers basic leadership skills and explains different leadership styles, communication, delegating, and problem solving. Jobsite safety and the crew leader’s role in safety are discussed, as well as project planning, scheduling, and estimating. Includes performance tasks to assist the learning process.

Cabinetmaking

Cabinetmaking

35 Hours
Revised: 2015, Third Edition
Module ID 27501-15

PAPERBACK  ISBN

DIGITAL
NCCERconnect Access Card: $99.99  9780135215562

This module expands on the knowledge and skills gained through the Carpentry Curriculum and provides the basic information needed to construct and apply finishes to custom cabinetry. It identifies and discusses various types of wood products, wood-joining techniques, power tools, cabinet doors, shelves, and hardware. Specific guidance is also provided for the installation of laminated countertops.