



NCCER

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CARPENTRY

Materials and Equipment

Fundamentals—Level One

MODULE 27101-06 – ORIENTATION TO THE TRADE

- Transparencies
- Markers/chalk
- Blank acetate sheets
- Transparency pens
- Pencils and scratch paper
- Overhead projector and screen
- Whiteboard/chalkboard
- Appropriate personal protective equipment
- Videotape (optional), *Careers in Construction: Carpentry Exploring Careers in Construction* (optional)
- Television and videocassette recorder (optional)
- Module Examinations

MODULE 27102-06 – BUILDING MATERIALS, FASTENERS, AND ADHESIVES

- Transparencies
- Markers/chalk
- Blank acetate sheets
- Transparency pens
- Pencils and scratch paper
- Overhead projector and screen
- Whiteboard/chalkboard
- Appropriate personal protective equipment
- Samples of lumber containing:
 - Grade stamps
 - Natural defects
 - Manufacturing defects
- Samples of plywood containing grade stamps
- Samples of engineered sheet materials (OSB, particleboard, etc.)
- Samples of engineered lumber (LVL, PSL, glulam, etc.)
- Samples of various concrete blocks
- Samples of metal framing materials
- Samples of various kinds of:
 - Nails
 - Screws
 - Bolts
 - Anchors
 - Construction adhesives

MODULE 27102-06 – BUILDING MATERIALS, FASTENERS, AND ADHESIVES (continued)

Cross section of a tree trunk (optional)
Drill and bits
Hammer
Screwdriver
Calculator
Module Examinations
Performance Profile Sheets

MODULE 27103-06 – HAND AND POWER TOOLS

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Soapstone
Yard-long lengths of 1" reinforcing rod
1 3 4 stock about 18" to 24" long
2 3 4s 18" to 24" long
2 3 4s 4' long
6" 3 12" pieces of ¾" plywood
Pieces of crown molding 4' long
Angle iron, steel rod, or pipe for cutting
Wood stock of various sizes
Laminate samples
Blocks of scrap wood
Fasteners (nails and staples) designed for the pneumatic fastener being used
Sheet metal stock
Folding rule or steel tape
Levels:
 Line
 Water
 Builder's
 Transit
 Laser
Squares:
 Try
 Sliding T-bevel
 Speed square
 Miter
 Framing
 Adjustable T-square

Planes:

- Block
- Jack
- Smoothing
- Jointer

Clamps:

- Web
- Hand-screw
- Bar
- Spring
- Locking C
- Pipe

Saws:

- Hacksaw and replacement blades
- Backsaw
- Dovetail
- Compass
- Coping

Chalkline

Clamping device

Portable circular saw

Circular saw protractor

Portable table saw

Miter/compound miter saw

Frame and trim saw

Demolition saw

Chop saw

Miter gauge

Ripping fence for portable circular saw

Push stick

Sawhorses or other solid support

Drill press and chuck key

Portable power plane and blades

Power metal shears

Router and router bits

Laminate trimmer and bits

Pneumatic fastener and manufacturer's instruction manual

Electric air compressor with air hose

Copies of Worksheet 1

Copies of Job Sheets 1 through 7

Module Examinations

Performance Profile Sheets

MODULE 27104-06 – READING PLANS AND ELEVATIONS

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Set(s) of architect's or general contractor's drawings
Examples of formal and informal construction specifications
Example specification in the Construction Specification Institute (CSI) format
Detailed copy of the Construction Specification Institute (CSI) specification format
Copies of local building codes
Copies of quantity takeoff forms
Architect's and engineer's rule
Calculator
Copies of Worksheets 1 through 4
Module Examinations
Performance Profile Sheets

MODULE 27105-06 – FLOOR SYSTEMS

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Floor adhesive (optional)
Beam material
Grout
Plywood or OSB butt-joint panels to cover floor area
Plywood or OSB (tongue-and-groove, 11/4") to cover floor area
Shim materials
Sill sealer
Steel bridging and instructions
Termite shield
2 3 6s for sills
2 3 10s for joists and headers
1 3 4s or 2 3 10s for bridging
8d box nails for bridging
8d box, screw, or ring shank nails for flooring
16d box nails for joists and headers
8d doublehead box nails
Pictures, photographs, etc., showing braced, balloon, platform, and post-and-beam framing

Sets of building working drawings and specifications
Examples of several floor plans and specifications
Pictures/photos of building damage that resulted from defective floor and sill framing (optional)
Tool box consisting of standard carpenter's hand tools
Chalkline
Electric drill and assorted drill and flat bits
Framing square
Level
100' tape
Power circular saw and extension cord
Reciprocating saw
Tin snips
Copies of Worksheets 1 through 3
Copies of Job Sheets 1 through 5
Module Examinations
Performance Profile Sheets

MODULE 27106-06 – WALL AND CEILING FRAMING

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
8d common nails
16d box nails
Floor plan
2 3 4 or 2 3 6 framing lumber for studs and joists
2 3 12 header material
¼" CD plywood for header spacers
½" CD plywood
Stock for blocking
Metal brace material
Sheathing material
Joist lumber
Chalkline
25' tape
Steel tape
Framing hammer
Framing square or speed square
Circular saw
Extension cord
4' level
6' stepladder
Copies of Job Sheets 1 through 5
Module Examinations

Performance Profile Sheets

MODULE 27107-06 – ROOF FRAMING

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Scientific calculator
8d common nails
8d box nails
16d box nails
16d common nails
Roof framing plan
2 3 4 or 2 3 6 framing lumber for rafters and ridgeboards
Joist and header material for roof opening
½" CD plywood or other sheathing material
Nails for sheathing
H-clips
Roof trusses
1 3 6 lumber or plywood for catwalk
2 3 4 lumber for braces and stakes
Sample blueprints
Chalkline
String line
Steel tape with markings at 16" OC
Framing hammer
Claw hammer
Spreader for lifting trusses (if applicable)
Crane for lifting trusses (if applicable)
Rafter framing square
Sawhorses
Speed square and booklet
Circular saw
Extension cord
Handsaw
4' level
6' stepladders
Plumb bob and line
Copies of Job Sheets 1 through 6
Module Examinations
Performance Profile Sheets

MODULE 27108-06 – INTRODUCTION TO CONCRETE, REINFORCING MATERIALS, AND FORMS

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Hand calculator
Concrete calculator
Copies of a concrete table
Form boards, stakes, braces, ties, and spreaders
16-gauge tying wire
Samples of various aggregates
Samples of concrete mix
Various bar supports and accessories
Various mechanical splices for reinforcement steel
Various sizes, types, and grades of reinforcement materials
Samples of various types and sizes of wire fabric
Exterior plywood or plyform
Steel tape or rule
Basic carpenter's toolbox
Level
Plumb bob
String line
Duplex nails
Plan for simple form
Circular saw and extension cord
Copies of Worksheet 1
Module Examinations
Performance Profile Sheets

MODULE 27109-06 – WINDOWS AND EXTERIOR DOORS

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Manufacturer's catalogs and brochures on windows
Nails:
 4d finish
 6d finish
 8d finish or casing
 16d casing
Pre-hung window unit
Shims
Flashing or drip cap
Pre-hung door unit
Wood shingles for blocking shims
Fiberglass insulation or sill sealer
Lockset with manufacturer's instructions and template (if needed)
Weatherstripping
Screws for attaching weatherstripping
Threshold and manufacturer's installation instructions
Concrete screw anchors and screws
Miter saw
Hand levels
Handsaw
Claw hammer
Framing square
Combination square
Steel tape
30" level
Nail set
Caulking gun and sealer
Boring jig (if available)
Wood chisels
Tin snips
Utility knife
Screwdriver
Drill
Drill bits
Copies of Job Sheets 1 through 6
Module Examinations
Performance Profile Sheets

MODULE 27110-06 – BASIC STAIR LAYOUT

Transparencies

Markers/chalk

Blank acetate sheets

Transparency pens

Pencils and scratch paper

Overhead projector and screen

Whiteboard/chalkboard

Appropriate personal protective equipment

- Basic carpenter's toolbox

- Framing square

- Level

- Circular saw and extension cord

- Hand saw

- Stair gauges

- Calculator 2 3 12s for stringers

- 2 3 12s for treads

- 1 3 8s for risers

- Handrail and brackets

- 8d box nails

- 16d box nails

- 16d casing nails

- Stair plans

- Copies of Job Sheet 1

- Module Examinations

- Performance Profile Sheets

Level Two—Framing and Finishing

MODULE 27201-07 – COMMERCIAL DRAWINGS

- Overhead projector and screen
- Transparencies
- Blank acetate sheets
- Transparency pens
- Whiteboard/chalkboard
- Markers/chalk
- Pencils and scratch paper
- Appropriate personal protective equipment
- Set of commercial drawings
- Set of residential drawings
- Quick Quizzes
- Module Examination
- Performance Profile Sheet

MODULE 27202-07 – ROOFING APPLICATIONS

- Overhead projector and screen
- Transparencies
- Blank acetate sheets
- Transparency pens
- Whiteboard/chalkboard
- Markers/chalk
- Pencils and scratch paper
- Appropriate personal protective equipment
- Composition shingles
- Architectural shingles
- Roll roofing material
- Wood roofing shingles
- Wood roofing shakes
- Wood shingle panels
- Hardboard simulated shingle panels
- Metal simulated shingle panels
- Slate shingles
- Roofing tiles
- Metal roofing
- Synthetic tiles, shakes, and shingles
- Membrane roofing
- Corrugated metal roofing
- Installation literature on standing-seam metal roofing
- Scaffolding tags
- Roofing brackets
- Metal drip edge
- Flashing
- Fiberglass shingles

MODULE 27202-07 – ROOFING APPLICATIONS (continued)

Torch-down roofing material

Single-ply roofing material

Ice edging

Prepared roof deck for composite shingles with a valley, hip roof intersection, horizontal abutment, and sidewall (all sheathed and with underlay in place)

Prepared roof deck for wood shingles with spaced sheathing and hip roof intersection

Prepared low-pitch (flat roof) roof with sheathing in place

2 x 4s to build saddle

Roofing nails

Plastic cement

Felt underlayment

Weatherproof membrane

Prefabricated soil pipe flashing

Backsaw

Power circular saw

Crowbar

Handsaw

Carpenter's level

Nail apron

Sliding T-bevel

Keyhole saw

Pop riveter

Chalkline

Power saber saw

Angle square

Power drill

Caulking gun

Tin snips

Pry bar

Utility knife

Scribing compass

Drill bit set (regular and masonry)

Framing square

Claw hammer

Pneumatic nail guns

Shingle hatchet

Straightedge

Composition shingle knife

Roofing hammer

Slater's tools

Score and snap tile cutter

Hand grinder with diamond wheel

Portable metal brake

Margin trowel

Scaffolding

Materials moving equipment

MODULE 27202-07 – ROOFING APPLICATIONS (continued)

Ladders and jacks
Full body harness with lanyard and decelerations device
Damaged personal fall protection equipment
Propane torch and tank
Copies of the Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27203-07 – THERMAL AND MOISTURE PROTECTION

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Flexible insulation
Loose-fill insulation
Rigid or semi-rigid insulation boards
Reflective insulation
Staples
Hand or power stapler
Calculator
Samples of various vapor barrier materials
Samples of various waterproofing materials
Soffit baffles
Wire mesh if needed
Tape measure
Utility knife or shears
Pencil
Prepared wall for insulation, vapor barriers, and building wraps
Copies of the Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27204-07 – EXTERIOR FINISHING

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Sample of building wrap

MSDS

Samples of aluminum and vinyl fascia and soffits and installation instructions

2 × 4s with different types of tail rafter cuts

2 × 4s for lookouts

2 × 4s for lookout ledger

2 × 6s for false fascia

1 × 8s for fascia

1 × 2s for frieze

Plywood for soffit

Galvanized 4d box nails for soffit

Galvanized 8d casing nails for fascia

8d box nails for lookout ledger

16d box nails for lookouts

Samples of various types of wood siding

Nails used to secure wood siding

Samples of vinyl or metal siding

Manufacturer's installation instructions for metal and vinyl siding

Quantity of one style of vinyl or metal siding

Various manufactured vinyl or metal siding trim and starter components

Metal and PVC trim coils

Samples of various stucco, brick, stone, and synthetic stone veneer

Samples of DEFS/EIFS wall cladding

1 × 3s for story poles

6 bevel wood siding and or wood lap siding

Board-and-batten siding

Tongue-and-groove siding

Shiplap siding

Shingles and shakes

Panelized shake or shingle siding

4 × 8 plywood siding

4 × 8 panel and lap-style hardboard/particleboard siding

Lap and panel styles of fiber-cement siding

Manufacturer's installation instructions for fiber-cement siding

Manufacturer's installation instructions for plywood siding

Caulk

Inside and outside corner materials

Furring strips for starter course

Spacing gauges (fabricated)

MODULE 27204-07 – EXTERIOR FINISHING (continued)

Siding gauges (fabricated)
Drip caps
Flashing
Building paper
Nails
Radial arm saw
Framing square
Steel measuring tape
Claw hammer
4 level
Handsaw
Chalkline
Combination square
Water level
Circular saw or table saw
Fine-toothed, carbide-tipped, circular saw blade
Dry-diamond circular saw blade
Sawhorses or cutting table
Electric/pneumatic carbide-tipped power hand shears
Score-and-snap knife with tungsten carbide tip
Caulking gun
Pliers
Tin snips
Aviation shears
Steel awl
Putty knife
Utility knife
Snaplock punch
Vinyl siding unlocking tool
Nail hole punch
Flat-blade screwdriver
Portable brake
Copies of the Quick Quiz
Module Examinations

MODULE 27205-07 – COLD-FORMED STEEL FRAMING

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment

MODULE 27205-07 – COLD-FORMED STEEL FRAMING (continued)

Various hand tools used when framing with steel, including:

- Powder-actuated stud driver
- Hammer-driven stud driver
- Power screwdriver
- Locking pliers (vise grips)
- Circular metal saw
- Hole punches
- Hole saw
- End circuit nippers and metal snips
- Channel stud shear
- Metal lock fastener (crimper)
- Hand level
- Claw hammer
- Framing square

Standard for Cold-Formed Steel — General Provisions

Various fasteners used with steel framing, including:

- Self-tapping screws
- Drywall screws
- $\frac{3}{8}$ ", $\frac{1}{2}$ " Type S or S-12 pan head screws
- $\frac{1}{2}$ " Masonry nails

Various samples of steel framing and framing materials, including:

- Studs
- Runners/tracks
- Metal furring channel and clips
- Resilient channel
- Cold-rolled channel
- Metal door frames, anchors, and clips
- Metal angles
- Tie wire
- Furring brackets for adjustable walls
- Breakaway clips
- Fine-gauge framing material
- Snap-in and standard runner track
- Stud shoes
- Standard resilient clips
- Resilient starter/finisher clips
- Plain drywall channel
- Metal joists
- Metal trusses
- Marked steel framing members

Non-structural steel framing members and accessories

MODULE 27205-07 – COLD-FORMED STEEL FRAMING (continued)

To the maximum extent possible, prebuilt samples to demonstrate techniques, including:

- Curtain wall framing
- Double top plate
- Held-back partition
- Metal stud secured to a steel beam
- Metal stud attached to a metal channel
- Window frame and header
- Simple 90° radius wall
- Combination wood/metal frame window
- Metal stud wall secured to a concrete wall
- Metal stud frame for glass wall

Chalkline

100' steel tape

Plumb bob

Floor plan

Door frame jack

Two 1 × 25-gauge metal straps

Red or yellow spray paint

Thin boards

Wood wedges and blocks

Copies of the Quick Quiz

Module Examinations

MODULE 27206-07 – DRYWALL INSTALLATION

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Sample of gypsum board

Small samples of common types of gypsum board

Samples of the various edges found on gypsum board

Drywall panels

Metal or vinyl corners

Samples of nails used to secure drywall

Nails

Screws

Samples of sound isolation and firestopping materials

Various types of adhesives

Adhesive

Various tools used for gypsum board application including:

Steel rule with cutting edge

4' T-square

Hook-bill knife

MODULE 27206-07 – DRYWALL INSTALLATION (continued)

Utility saw

Power cutout tool

Drywall or keyhole saw

Gypsum board lifter

Circle cutter

Drywall hammer

Nail pouch

Drywall rasp

Screw gun

Drywall lift

T-brace

Several tools used to apply adhesives to gypsum board

Samples of corner beads and casings

Local building codes

Firestopping devices

Samples of different types of firestopping material

Calculators

Copies of the Quick Quiz

Module Examinations

Performance Profile sheets

MODULE 27207-07 – DRYWALL FINISHING

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

A Recommended Specification for Levels of Gypsum Board Finish

To the maximum extent possible, various samples of properly finished walls as defined in the Trainee Module, including:

Level 0

Level 1

Level 2

Level 3

Level 4

Level 5

Various types of joint reinforcing tape, including fiberglass, metal edge, and paper

Various compounds, including powder, premix, and quickset

Water

Mixing container

Mixing tools

Pieces of 2 × 4

Various trims, including corner bead with mesh flanges, L-bead, J-bead, and expansion joints

Various grades of sandpaper

Mesh cloth

Polyethylene sponges

Sanding tools

Various hand and automatic tools used to cut, hang, and finish drywall, including:

Straight edge or T-square

Utility knife

Drywall saw

Circle cutter

Drywall hammer

Caulking gun

Screwdriver

Broad knife

Joint trowel

Corner tool

Mud pan or hawk

Sanding block, pole sander, or electric sander

Sponge sander

Tape dispenser

Banjo

Putty knife

Mud mashers

Mud mixers

Automatic finishing tools

MODULE 27207-07 – DRYWALL FINISHING (continued)

Vacuum sander

Various tools used for creating texture patterns

Corner roller

Corner plow

Samples of textured finishes

Samples of common finished joint problems

Samples of common compound problems

Copies of the Quick Quiz

Module Examinations

Performance Profile sheets

MODULE 27208-07 – DOORS AND DOOR HARDWARE

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Segments of flush hollow-core, solid-core, and panel doors

Door schedules

Assembled and unassembled metal door frames with molding and accessories

Manufacturer's warranty and installation instructions for wood doors

Assortment of doors, including:

- Bifold doors

- Bypass door

- Pocket door

- Wood folding door

- Metal door with door light

- Fire door

Manufactured prehung door units

Interior locksets and manufacturer's installation instructions

Cylindrical, heavy-duty, and mortise locksets

Multiple lock keying systems

Electrical strikes

Electrical bolt locks

Electrical locksets/latches

Electromagnetic locks

Delayed exit alert locks

External doorstop

Door holder

Door closer

Touch bars

Cross bars

Flush bolts

Dustproof striker

Door coordinator

Smoke gasket

Open back strike

Finish nails

Anchor bolts

6 ¼" drywall screws (including coarse thread)

Closer sleeves

Assortment of anchors, including:

- Wood stud anchor

- Steel stud anchor

- Sill anchors

- Masonry wall anchors

MODULE 27208-07 – DOORS AND DOOR HARDWARE (continued)

Shims
8d 2¼ casing nails
Wood spreader bar
Expansion shields
Machine bolts
Wire
Pencil
Masking tape
Cardboard shim strips
Paraffin wax
Soft bar soap
Hinges
High-frequency usage hinge
Door jambs
Weatherstripping
Thresholds
6' level
Magnetic level
Screwdriver set
Drill bit set
Masonry drill bit set
Electric drill
Telescoping braces
Measuring tape/ruler
Finishing sawhorses
Knife
Power saw
Hand saw
Fabricated door jack
Butt gauge
Soft-faced hammer
Wood chisel
Butt marker
Hinge butt template for doors and jambs
Door hanging system
Self-centering screw hole punch
Self-centering bit
Plane
Hole saw
Sledgehammer
Square
Door wedges
Router and operator's manual
Copies of the Quick Quiz
Module Examinations
Performance Profile Sheet

MODULE 27209-07 – SUSPENDED CEILINGS

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Pictures of various types of suspended ceilings
Decibel meter
Set of blueprints
Scrap pieces of wall angle
Exposed grid ceiling system components
Metal pan ceiling system components
Direct-hung concealed grid ceiling system components
Drywall furring ceiling system components
Graph paper
Examples of different types of ceiling panels and tiles
Basic carpenter's tool box
Framing square
Level
Driver/drill (electric and/or battery-operated) and assorted drill bits/driver bits
Ladders
Water level, builder's level, and/or laser with a wall/ceiling mount or tripod
Aviation snips
Clamping pliers or vise grips
Chalkline
50' or 100' tape
Keyhole saw
Lath nippers
Magnetic punch
Scribes or compass
Tile knife
Pop-rivet gun
Powder-actuated fastening tool
Scaffold
Whitney punch
Plumb bob
Architect's scale
Copies of the Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27210-07 – WINDOW, DOOR, FLOOR, AND CEILING TRIM

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Assortment of custom and mill trim, including:
 Prefinished moldings
 Base, base cap, and base shoe molding
 Casing and casing stop moldings
 Crown, bed, and cove moldings
 Quarter round, corner guard, chair rail, and wainscot cap moldings
Rabbeted stools
Pneumatically driven nails
Assortment of fiberboard polystyrene, and other non-wood moldings
Basic carpenter's tool box
Coping saw
Backsaw
Carpenter's and dovetail trim saw
Framing square
Level
Metal and wooden miter boxes and hacksaw
Power and compound miter saws
Pneumatic finish nailer
Driver/drill (electric and/or battery-operated)
Copies of the Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27211-07 – CABINET INSTALLATION

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Literature on various types of kitchen cabinets
Examples of woods, plywood, particleboard, and other materials used in cabinet construction
Examples of cabinet doors and drawers
Examples of metal drawer guides
Examples of cabinet door hinges
Examples of cabinet door catches and knobs
Examples of plastic laminate and solid-surface materials used for countertops
Assortment of fasteners used for cabinet construction and installation
Wall base cabinet units
Shim shingles
2 × 4 scrap material
Countertop base and backsplash
Sheets of plastic laminate
Contact cement
Dowels or similar objects used to prevent unintentional contact between laminate and countertop cemented surfaces
Examples of blueprints, design sketches, and/or shop drawings of cabinet arrangements
Basic carpenter's tool box
Framing square
Level
Block plate
Circular saw and extension cord
Power/compound miter saw
Driver/drill (electric and/or battery-operated) and assorted drill bits/driver bits
Assortment of clamps
Sawhorses
J-rollers
Rollers/brushes for applying contact cement
Saber saw and blades
Biscuit jointer
Carpentry Levels 3 & 4 video Package. Video 2: Interior Carpentry: Ceilings/Cabinets (optional)
TV DVD/VCR player
Copies of the Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27212-07 – CABINET FABRICATION

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Examples of woods, plywood, particleboard, and other materials used in cabinet construction

Examples of cabinet doors and drawers

Shaper cutting heads

Samples of cuts made with a shaper

Assortment of cabinet door, drawer, and shelf hardware

Examples of joints commonly used by cabinetmakers

Examples of plastic laminate and solid-surface materials used for countertops

Countertop base and backsplash

Contact cement

Dowels or similar objects for use to prevent unintentional contact between laminate and countertop cemented surfaces.

Scrap lumber, including:

1 × 4

1 × 6

2 × 4

Scrap piece of ¼ lauan plywood

Wood glue

Biscuits and dowels

Basic carpenter's tool box

Framing square

Level

Block plane

Assortment of clamps

Sawhorses

Router/laminate trimmer and assorted bits

Samples of various cuts that can be made with a router

J-rollers

Saber saw and blades

Belt sander and various abrasives

Rollers/brushes for applying contact cement

Biscuit jointer

Brad gun

Table saw

Radial arm saw

Several grades of sand paper

Semi-finished pieces

Compound miter saw

Jointer-planer

Router table

MODULE 27212-07 – CABINET FABRICATION (continued)

Disc sander

Thickness planer

Samples of wood stock before and after using a thickness planer

Drill press

Scroll saw or band saw

Wood sealers

Wood filler

Carpentry Levels 3 & 4 Video Package. Video 2: Interior Carpentry: Ceilings/Cabinets (optional)

TV/DVD/VCR player

Copies of the Quick Quiz

Module Examinations

Performance Profile Sheets

Level Three

MODULE 27301-07 – RIGGING EQUIPMENT

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Manufacturer's literature on different rigging hooks
Various rigging hooks with wear, cracks, and corrosion
Manufacturer's literature on shackles
Various types of shackles
Various eyebolts
Various lifting lugs
Turnbuckles
Manufacturer's literature on plate clamps
Various rigging plates and links
Various types of slings
Rigging pocket guide
29 CFR Section 1926.251, Rigging Equipment for Material Handling
Samples of wire rope that have failed inspection
Rope for tying knots
Block and tackle lifting system
Sample loads for lifting
Spur-gear chain hoist
Electric chain hoist
Ratchet-lever hoist or come-along
Ratchet jack
Screw jack
Hydraulic jack
Tugger
Quick Quiz*
Module Examinations**
Performance Profile Sheets**

MODULE 27302-07 – RIGGING PRACTICES

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Walkie-talkies
Throat microphone
Hardwired communication system
ASME B30.5 Consensus Standard
29 CFR 1926.550
Completed lift plan
Crane manufacturer's literature
Typical teeter-totter and weights
Various lifting eyebolts
Rigging hardware
Quick Quiz*
Module Examinations**
Performance Profile Sheets**

MODULE 27303-07 – PROPERTIES OF CONCRETE

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Copies of a concrete table
Concrete calculator
Samples of various aggregates
Concrete admixtures
Portland cement
Water
Containers for mixing concrete
Samples of different types of concrete
ASTM C173
Hoe or other tools to mix concrete
Various containers for collecting concrete samples
Source of freshly mixed concrete
Shovels
Hand scoops
ASTM standardized cone mold and steel tamping rod

MODULE 27303-07 – PROPERTIES OF CONCRETE (continued)

ASTM standardized cylindrical mold and steel tamping rod
Steel tape or rules
Wood for building a curing box
Basic carpenters tools
Quick Quiz*
Module Examinations**
Performance Profile Sheets**

MODULE 27304-07 – REINFORCING CONCRETE

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Pieces of marked rebar
Copies of ASTM standards
Bent bars
Bar lists
Hooks and spirals
Steel wire bar supports
Precast concrete bar supports
Plastic bar supports
Standees
Welded-wire fabric
Deformed welded-wire fabric
ACI standards for concrete coverage
Bolt cutters
Electric shears
Hickey bar and jigs
Tie wire
Pliers
Spliced rebar
Mechanically spliced rebar
Copies of Quick Quiz*
Module Examinations**
Performance Profile Sheet**

MODULE 27305-07 – HANDLING AND PLACING CONCRETE

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Appropriate personal protective equipment

Equipment for moving, placing, and consolidating concrete, including:

Moveable chutes (such as used with mixer trucks)

Drop chutes

Elephant trunk

Wheelbarrow

Power buggy and/or carts

Crane and bucket

Belt conveyor

Concrete pump

Pneumatic gun

Internal vibrator

Rollerbug tamper

Equipment for screeding, leveling, and finishing concrete, including:

Manual/power screeds

Knee boards

Darby floats/bullfoats

Pointed trowels

Edgers

Jointers (groovers)

Power saws

Hand floats

Hand trowels

Finishing machines

Brooms

Assortment of combination tools

Pointing and margin trowels

Cement hammers

Carborundum rubbing stones

Sprayers

Power grinders

Properly-constructed concrete formworks

Sand

Boxes to contain wet sand

Copies of Quick Quiz*

Module Examinations**

Performance Profile Sheet**

MODULE 27306-07 – TRENCHING AND EXCAVATING

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Samples of different types of soils
Access to a trench for inspection
Soil density testing equipment
Sample stormwater permit and pollution prevention plan
Several types of pumps
Safety video or DVD (optional)
TV with VCR or DVD player (optional)
Plastic boxes
Sand
Tools for digging
Water
Boxes of sand or dirt
Module Examinations*
Performance Profile Sheet*

MODULE 27307-07 – FOUNDATIONS AND SLAB-ON-GRADE

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Plumb bob and line
Leveling rods and accessories
Direct elevation rod
Project plans
Automatic leveling instruments
Builder's level
Tripod
Laser level
Batter boards
Hub stakes
Marker stakes
Color-coded stakes or markers
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment

MODULE 27307-07 – FOUNDATIONS AND SLAB-ON-GRADE (continued)

Steel tape (100')
Gammon reelMarkers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Steel tape (100')
Gammon reelField notebook
Transit level
2' or 4' level
String line
Samples of rebar and WWR
Pier foundation forms
Manufacturer's literature on wall forms
Manufacturer's literature on leave-in-place forms
Edge forms
Copies of Quick Quiz*
Module Examinations**
Performance Profile Sheet**

MODULE 27308-07 – VERTICAL FORMWORK

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Sheets of plywood
Components used to construct wall forms, including assembly hardware, walers, strongbacks, braces, and stakes
Manufacturers' literature on different types of gang forms
Manufacturers' literature on different types of flexible wall forms
Tools and materials to construct a wall form
Materials to construct blockouts and embedments
Materials inventory
Tools and materials to construct column forms
Circular saw
Form assembly hardware
OSHA Standard 1926:700-701
Walers
Strongbacks
Manufacturers' literature on different types of wall-forming systems
Manufacturers' literature on different types of column forms
Drawings with design details
Manufacturers' literature on stay-in-place polystyrene forms
Basic stair form

MODULE 27308-07 – VERTICAL FORMWORK (continued)

Tools and materials to construct a stair form
Copies of Quick Quiz*
Module Examinations**
Performance Profile Sheet**

MODULE 27309-07 – HORIZONTAL FORMWORK

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Walers
Strongbacks
Manufacturers' literature on deck framing systems
Manufacturers' literature on flying decks
Manufacturers' literature on column-mounted tables
Hand tools
Levels
Bracing materials
Shoring deck systems
Edge forms
Manufacturers' literature on different types of pan forms
Manufacturers' literature on shoring
Wood shore
Metal post shores
Manufacturers' literature on aluminum shoring
Samples of exterior grade plywood
Plyform®
Stringers
Joists
Blockouts
Embedded items
Materials for construction joints
Manufacturers' literature on bridge deck forms
Manufacturers' literature on culvert forms
OSHA 1926.703
Copies of Quick Quiz*
Module Examinations**
Performance Profile Sheet**

MODULE 27310-07 – TILT-UP WALL PANEL

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Appropriate personal protective equipment

Variety of inserts and embedments

Reinforcing bar

Wood or other materials to form reveals.

Wood for building panel forms

Hand tools

Fasteners

Concrete mix

Water

Wheelbarrow or concrete mixer

Tools to mix and spread concrete

Drawing of panel forms

Copies of Quick Quiz

Module Examinations

Performance Profile Sheet

Level Four

MODULE 27401-08 – SITE LAYOUT I: DISTANCE MEASUREMENT AND LEVELING

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Site plot plans for selected construction sites
Assortment of hubs, stakes, and laths
Assortment of different colored flagging tape
Permanent markers for marking stakes
Field notebooks for recording data
2" × 4" or 2" × 6" ledger boards
2" × 4" batter boards
Nylon string
Calculator
100 foot steel tape
Range poles
Plumb bobs/gammon reels
Hand sight levels
Tension spring
Chaining pins
Builder's level
Transit level
Tripods
Laser level
Assortment of leveling rods and accessories
Quick Quizzes
Module Examinations
Performance Profile Sheets

MODULE 27402-08 – SITE LAYOUT II: ANGULAR MEASUREMENT

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Site plot plans

Rotating beam laser instrument
Electronic laser beam detector
Transits
Optical theodolite
Electronic transit and theodolite
Electronic distance measurement instruments (EDMIs)
Prisms
Total station
Electronic filed books
Direct elevation (Lenker) rod
Tripods
Building stakes
Scientific calculator
100-foot steel tape
Plumb bobs
Quick Quizzes
Module Examinations
Performance Profile Sheets

MODULE 27403-08 – ADVANCED ROOF SYSTEMS

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Metal bars
Angle iron samples
Metal channel samples
Metal beam samples
Glulam samples
LVL samples
Open-web steel joists
Angle iron bridging
Smooth rod bridging
Galvanized steel roof panels
Aluminized steel roof panels
Corrugated lap seam roof metal panel
Fasteners for a lap seam metal roof
Tape sealant

Standing-seam metal roof panel
Standing-seam metal roof clips and fasteners
Reinforcing plates
Cinch straps
Batten strips
Ridge covers
Insulation boards
Rolled roofing felt
Stone aggregate
Bitumen
Seaming tools
Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27404-08 – ADVANCED WALL SYSTEMS

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Various types of board and sheet paneling
Wainscoting
Drywall backer board
Partial wall for example installation
Outlet box
Chalk
Various firestopping materials
Furring strips
Drywall compound
8d nails
Paneling nails
Flat black paint
General-purpose adhesive
Vapor barrier materials
Tape measure
Knife
Straightedge
Power saw

Hollow-ground blade
Cordless drill
Chalkline
Steel square
Power sander
Hammer
Plane
Level
Combination square
Miter box or miter saw
Nailset
Caulking gun
Vertical saw
Keyhole saw
Scribe
Wire brush
Sander
Fine tooth panel saw
Adjustable wrench
Screwdriver
Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27405-08 – ADVANCED STAIR SYSTEMS

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Samples of various styles of stair finish and balustrade components
Typical stair and balustrade component installation kits
Photographs or drawings from architectural firms or building materials manufacturers that show specific types of stairways (both finished and under construction)
Manufacturers' literature for various styles of rails, newel posts, landing newels, fittings, and blusters
Stair installation kits, hardware, and tools commonly used for stair component installation
Materials used to construct service stairs
Manufactured riser and tread templates
Pre-drilled balustrade components
Finish nails

Handrail stock
Wood screws
Handrail posts
Tread and riser stock
Handrail brackets
Cove molding
Glue or construction adhesive
Paraffin wax
Starting step
Starting newel posts and mounting systems
Tread nosing
Lag bolts
Rail bolts
Volute
Landing (balcony) newel
Gooseneck fitting
Balusters
Baluster mounting screws or pins
Quarterturn
Wood plugs
Opening cap
Rosette or half-newel
Preassembled stair rail system
False tread kit
Hammer
Power compound miter saw
Nail set
Knife
Framing square
Power drill with bits
Screwdriver set
Tape measure
Fabricated tread and rise templates
Wrench set
Wood file
Combination square
Torpedo level
4" level
Wood chisel
Reciprocating saw
Vise grip pliers
Bar clamps

Plumb bob
Baluster spacing sphere
Baluster drilling guides
Trammed bar and points
Straightedge
Tempered hardboard or plywood
Quick Quizzes
Module Examinations
Performance Profile Sheets

MODULE 27406-08 – INTRODUCTION TO LIGHT EQUIPMENT

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Aerial lift and operator's manual
Skid steer loader and operator's manual
Trencher and operator's manual
Portable generators and accessories
Portable generator operator's manual
Portable air compressor and accessories
Portable air compressor operator's manual
29 CFR 1926.453
Compaction equipment
Compactor operator's manual
Forklift and operator's manual
Backhoe and operator's manual
Quick Quiz
Module Examinations
Performance Profile Sheets

MODULE 27407-08 – WELDING

Overhead projector and screen
Transparencies
Blank acetate sheets
Transparency pens
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Tape measure

Soapstone
Penknife
Chipping hammer
Friction lighter
Tip manuals and tip manufacturer's charts
Vendor cutting tip chart
Appropriate personal protective equipment, to include:
 Safety goggles
 Face shields
 Welding helmets or shields
 Ear protection
 Welding cap
 Leather jacket
 Leather pants or chaps
 Gauntlet-type welding gloves
 Respirators
Brass valves
MSDS for cutting products
Oxygen cylinder with cap
Fuel gas cylinder with cap
Regulators (oxygen and fuel gas)
Hose set
SMAW setup
Workpiece clamps
Wire brush
Pliers
Pneumatic slag chipper
Scaler
Flash arrestor
Reverse flow check valve
Grinding equipment
One-piece cutting torch
Combination cutting torch and torch tips
Assorted acetylene, liquefied fuel gas, and special-purpose cutting torch tips
Welding electrodes
MSDS for electrodes
Welding coupons
Samples of welded metal
Cutting tips
Tip cleaners
Tip drills
Mechanical guide
Cylinder cart
Motorized oxyfuel track cutter
Framing squares
Combination squares with protractor head

Wrenches (torch, hose, and regulator)

Examples of good and bad cuts

Steel plate

Thin (16 to 10 gauge)

Thick (¼ inch to 1 inch)

Steel pipe

Vises and pipe jacks to hold steel for cutting

Safety video/DVD (optional)

TV/VCR/DVD player (optional)

Quick Quiz

Module Examinations

Performance Profile Sheets

MODULE 27408-08 –COMMERCIAL FINISH WORK

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Appropriate personal protective equipment

Project drawings which include a finish schedule

Manufacturers' literature on epoxy paints, fiberglass reinforced panels, and stone veneers

Manufacturers' literature on paint additives

Manufacturer's literature on Compasso™ trim

Manufacturer's literature on drywall grid system ceilings

MSDSs for wood, cork, and bamboo flooring

Manufacturer's literature on wood, cork, and bamboo flooring

Manufacturer's literature on exterior insulation and finish systems and direct-applied exterior finish systems

Manufacturer's literature on concrete masonry units

Manufacturer's literature on stucco

Quick Quiz

Module Examinations

Performance Profile Sheets

MODULE 27409-08 - SITE PREPARATION

Overhead projector and screen

Transparencies

Blank acetate sheets

Transparency pens

Whiteboard/chalkboard

Markers/chalk

Pencils and scratch paper

Appropriate personal protective equipment
Sample site/plot drawings
EPA Guide to Developing a Stormwater Pollution Prevention Plan
Army Corps of Engineers literature on disposal of demolition debris
Sample Stormwater Pollution Prevention Plan
Concrete calculator
One-Call cards
Soil samples
Typical construction site signs
Quick Quiz
Module Examinations
Performance Profile Sheets

Level Five

MODULE 27501-03 – CABINETMAKING

Overhead projector and screen

Whiteboard/chalkboard

Transparencies

Markers/chalk

Blank acetate sheets

Transparency pens

Pencils and scratch paper

Examples of woods, plywood, particleboard, and other materials used in cabinet construction

Examples of cabinet doors and drawers

Assortment of cabinet door, drawer, and shelf hardware

Examples of plastic laminate and solid-surface materials used for countertops

Assortment of fasteners used for cabinet construction and installation

Countertop base and backsplash

Sheets of plastic laminate

Contact cement

Dowels or similar objects for use to prevent unintentional contact between laminate and countertop cemented surfaces

Scrap lumber, including:

1 × 4

1 × 6

2 × 4

Scrap piece of ¼" lauan plywood

Wood glue

Biscuits

Basic carpenter's tool box

Framing square

Level

Block plane

Assortment of clamps

Sawhorses

Router/laminate trimmer and assorted bits

J-rollers

Belt sander

Rollers/brushes for applying contact cement

Biscuit jointer

Brad gun

Table saw

Radial arm saw

Compound miter saw

Jointer-planer

Shaper

Router table

MODULE 27501-03 – CABINETMAKING (Continued)

Disc sander

Belt sander

Spindle sander

Thickness planer

Drill press

Scroll saw or band saw

Module Examinations*

Performance Profile Sheets*

