



## **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 × 4 stock about 18" to 24" long  
2 × 4s 18" to 24" long  
2 × 4s 4' long  
6" × 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 × 6s for sills  
2 × 10s for joists and headers  
1 × 4s or 2 × 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 × 4 or 2 × 6 framing lumber for studs and joists  
2 × 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

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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 × 4 or 2 × 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 × 6 lumber or plywood for catwalk  
2 × 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 × 12s for stringers

- 2 × 12s for treads

- 1 × 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\*