



Pembroke Hopkins Park Construction Outreach Program

13355 E. 3000 S. Rd., Pembroke Township, IL 60958

Tel: (815) 944-8897 Fax: (815) 944-5675

Materials and Equipment

Fundamentals—Level One

MODULE 27101-06 – ORIENTATION TO THE TRADE (2.5 Hours)

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 (7.5 Hours)

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 (10 Hours)

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 3/4" 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 (20 Hours)

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 (25 Hours)

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, 1 1/4") 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 (20 Hours)

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
1/4" CD plywood for header spacers
1/2" 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 (37.5 Hours)

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
1/2" 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 (5 Hours)

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 (12.5 Hours)

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 (12.5 Hours)

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 (25 Hours)

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 (25 Hours)

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 (7.5 Hours)

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 (35 Hours)

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 (15 Hours)

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

MODULE 27206-07 – 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 sheer
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
3/8", 1/2" Type S or S-12 pan head screws
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 27206-07 – 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 27207-07 – DRYWALL INSTALLATION (15 Hours)

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 27207-07 – 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 27208-07 – DRYWALL FINISHING (12.5 Hours)

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 27208-07 – 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 27209-07 – DOORS AND DOOR HARDWARE (20 Hours)

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 1/4" drywall screws (including coarse thread)

Closer sleeves

Assortment of anchors, including:

Wood stud anchor

Steel stud anchor

Sill anchors

Masonry wall anchors

MODULE 27209-07 – DOORS AND DOOR HARDWARE (continued)

Shims

8d 2 1/4 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 27210-07 – SUSPENDED CEILINGS (15 Hours)

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 27211-07 – WINDOW, DOOR, FLOOR, AND CEILING TRIM (25 Hours)

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 27212-07 – CABINET INSTALLATION (10 Hours)

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 joiner

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 27213-07 – CABINET FABRICATION (10 Elective Hours)

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 1/4 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 27213-07 – 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 (10 Hours)

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 (15 Hours)

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 (10 Hours)

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 (15 Hours)

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 (22.5 Hours)

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 (10 Hours)

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 (20 Hours)

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 reel
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Steel tape (100')
Gammon reel
Field 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 (27.5 Hours)

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 (22.5 Hours)

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 (20 Hours)

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 (22.5 Hours)

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 (30 Hours)

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 (20 Hours)

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 (25 Hours)

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 (25 Hours)

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 (10 Hours)

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 (25 Hours)

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 (1/4 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 (5 Hours)

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 (7.5 Hours)

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

MODULE 27410-08 – CABINETMAKING (16 Hours)

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 1/4" 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 27410-08 – CABINETMAKING (Continued)

Disc sander
Belt sander
Spindle sander
Thickness planer
Drill press
Scroll saw or band saw



Module Examinations*
Performance Profile Sheets*