

Carpenter Level 3

Carpenter

Unit: C2.3 Roof Framing II – Theory and Practicum

Level: Three

Duration: 90 hours

Theory: 36 hours

Practical: 54 hours

Overview:

This unit of instruction introduces Carpenter apprentices to advanced theoretical and practical capabilities required to design roofs according to the National Building Code, and to contribute to the construction of roof framework of various kinds and configurations including intersecting roofs and trussed roofs, as well as dormers, turrets, and other special features of roof building.

Objectives and Content:

**Percentage of
Unit Mark (%)**

1. Describe intersecting roofs.

13%

- a. Terminology
 - Supporting valley (long)
 - Supporting valley (short)
 - Valley jack
 - Hip valley cripple jack
 - Valley cripple jack
 - Major/minor ridges
 - Hidden hip
 - Shorten hip
- b. Calculate length
 - Long/short valley
 - Minor ridge
 - Valley jack
 - Cripple jack length
- c. Calculate shortened hip
- d. Supported/unsupported layouts
- e. Minor-ridge layout
- f. Valley jack layout
- h. Hip valley cripple layout
- i. Valley cripple layout
- j. Shortened-hip layout
- k. Temporary bracing methods

2. Describe trussed roofs and methods of assembly.

7%

- a. Terminology
 - Arch rib
 - Bay

- Bottom chord
- Bowstring
- Cantilever
- Compression
- Fink truss ("W")
- Gable truss
- Gang nail
- Girder
- Gusset
- Heel
- Howe truss
- Hurricane clips
- King post truss
- Modified truss
- Mono truss
- Panel points
- Piggyback
- Queen post truss
- Scissor truss
- Shear
- Shear plate
- Sloping flats
- Span
- Split ring
- Struts
- Tension
- Ties
- Top chord
- Top-chord bearing
- Torsion
- Uplift
- Web members
- b. Details found on manufacturer drawings
- c. Layout procedures
- d. Erection procedures
- e. Bracing (to specifications)
- f. Partition-fastening procedures
- g. Truss ties
- h. Specialty hardware/fasteners
- i. Load transfer in trusses

3. Describe special roofs and features.

4%

- a. Terminology
 - Canopy
 - Cant strip
 - Comparative slope drawing
 - Cricket (saddle)
 - Cupola
 - Dormer
 - False gable
 - Parapet
 - Polygon roofs
 - Roof drains
 - Sawtooth
 - Spine
 - Turret
 - Unequal slope
- b. Dormer-framing methods
 - Shed

- Gable
 - Eyebrow
- c. Unequal-slope roof framing methods
- 4. Describe energy-efficient roof framing. 2%**
- a. Raised-heel rafters and trusses
 - b. Installation of insulation stops
- 5. Calculate ceiling-frame materials using building code(s), drawings, and specifications. 1%**
- a. Beam and joist size
 - b. Beam-component lengths
 - c. Joist support and lengths
 - d. Size and location of openings
 - e. Number and lengths of joists (full length; headers; tails; stub; partition supports; ceiling backing)
- 6. Calculate gable-roof materials using building code(s), drawings and specifications. 5%**
- a. Size of material
 - b. Length and number of commons
 - c. Ridge
 - d. Fascia material
 - e. Intermediate rafter supports
 - f. Gable-end framing
 - g. Lookouts
 - h. Strapping
 - i. Gable sheathing
 - j. Roof sheathing
 - k. H-clips
 - l. Soffit-framing material
- 7. Calculate materials for intersecting and hip roofs using building code(s), drawings, and specifications. 10%**
- a. Rafter-material sizes
 - b. Rafters (length; number)
 - c. Total material requirements for rafters
 - d. Intermediate rafter supports
 - e. Fascia material
 - f. Soffit-framing material
 - g. Sheathing (thickness; amount)
 - h. H-Clips
 - i. Fasteners (size; amount)
- 8. Calculate, using drawings, materials for trussed roofs. 3%**
- a. Trusses
 - b. Truss-ties
 - c. Braces
 - d. Sheathing (thickness; amount)
 - e. H-clips
 - f. Fasteners (size; amount)
 - g. Insulation stops
- 9. Assemble intersecting roofs of equal slope. 20%**
- a. Collar-ties and fascia
 - b. Commons
 - c. Cripples
 - d. Gable
 - e. Hip-jacks
 - f. Hips

- g. Ladder
- h. Minor rafters
- i. Roof vents
- j. Sheathing
- k. Tripod at each ridge-end (three commons and ridge)
- l. Valleys
- m. Valley-jacks
- n. Verification re: conformity of nailing with National Building Code requirements

10. Assemble intersecting roofs of unequal slope.

20%

- a. Common
- b. Comparative slope and drawing
- c. Cripples
- d. Raised plate
- e. Ridges
- f. Sheathing
- g. Valleys
- h. Valley-jacks

11. Assemble truss (manufactured-component) roofs.

15%

- a. Bracing
- b. Layout
- c. Nailing procedures
- d. Placement
- e. Truss-ties

Carpenter

Unit: D1.1 Window Theory

Level: Three

Duration: 10 hours

Theory: 10 hours

Practical: 0 hours

Overview:

This unit of instruction concerns the theoretical grounding required to identify/describe the installation of different kinds of windows, as well as the components and hardware associated with them.

Objectives and Content:

Percentage of Unit Mark (%)

1. Describe types of windows.

30%

- a. Awning/hopper
- b. Bay
- c. Bow
- d. Casement
- e. Skylights
- f. Transom
- g. Vertical/horizontal slide

2. Describe window components.

20%

- a. Energy-rating of windows
- b. Flashing
- c. Glazing
 - Coatings
 - Edge-spacer
 - Gas-fill
 - Weather-stripping
- d. Hardware
- e. National Building Code requirements
- f. Parts of a window-frame
- g. Types of material (PVC; wood; metal-clad; etc.)

3. Describe procedure for window installation.

50%

- a. Air-barrier tape
- b. Backer-rod
- c. Building paper
- d. Caulking
- e. Drip-cap
- f. Elevations
- g. Energy-efficient sealing of windows
- h. Fastening method
- i. Flashing
- j. Insulation

- k. Plumb
- l. Layout
- m. Nailing procedures
- n. Placement
- o. Truss-ties

Carpenter

Unit: D1.2 Roof Coverings Theory

Level: Three

Duration: 8 hours

Theory: 8 hours

Practical: 0 hours

Overview:

This unit of instruction is designed to provide theoretical grounding required to identify roof covering and roofing accessories, and to describe the installation of roof coverings.

Objectives and Content:

	Percentage of Unit Mark (%)
1. Describe modern kinds of roof covering.	15%
a. Built-up	
b. Corrugated metal	
c. Roll-roofing	
d. Synthetic roofing (asphalt, hardboard, vinyl, etc.)	
e. Tiles	
f. Wooden shingles/shakes	
2. Describe procedure for installing eave-protection.	20%
a. Fasteners	
b. Ice dam	
c. Leakage prevention	
d. Materials	
e. National Building Code requirements	
f. Starter strips	
g. Ventilation (ice dam)	
3. Describe procedure for installing roofing accessories.	20%
a. Caulking	
b. Centre drain	
c. Counter-flashing	
d. Drip-edge	
e. Fasteners	
f. Gravel stop	
g. Plumbing boots	
h. Sealants	
i. Snow-stop	
j. Soaker	
k. Step Flashings	
l. Valley Flashings	

- 4. Describe procedure for installing roof covering. 30%**
- a. Adhesives
 - b. Fastener
 - c. Inspect roof coverings
 - d. Layout
 - e. Roof-vents (caulking, fasteners/fastenings, power-assisted, ridge-vents, sealant, static, wind turbine/exhaust)
 - f. Roof coverings
 - g. Underlayment
- 5. Calculate roof covering materials. 10%**
- a. Eave-protection
 - b. Metal roofing
 - c. Rolled roofing
 - d. Shingles (asphalt, wooden, etc.)
 - e. Tiles
 - f. Underlayment
- 6. Calculate roofing accessories. 5%**
- a. Caps
 - b. Flashings
 - c. Ridge-vent
 - d. Roofing cement (nine-inch strip)
 - e. Roof-venting requirements
 - f. Snow-stop
 - g. Starter strips

Carpenter

Unit: D1.3 Wall Coverings and Trim Theory

Level: Three

Duration: 8 hours

Theory: 8 hours

Practical: 0 hours

Overview:

This unit of instruction is designed to provide theoretical grounding required to identify exterior wall coverings, trim, and accessories, and to describe their installation.

Objectives and Content:

**Percentage of
Unit Mark (%)**
20%

1. **Describe modern kinds of exterior wall covering.**
a. Brick veneers
b. Concrete/metal/synthetic siding
c. Exterior insulation finishing systems (EIFS)
d. Lath
e. Precast
f. Stucco
g. Wooden siding

20%
2. **Describe exterior trim and accessories.**
a. Cornice Components
b. Door/window trim components
c. Projecting components
d. Specialty wall-trim (dryer vents, hose-bibs, etc.)

30%
3. **Describe procedure for installing exterior wall coverings, trims, and accessories.**
a. Installation (specialty tools, fastening, and techniques)
b. Preparation (wall-preparation and layout)
c. Selection (code requirements, drawings, specifications, vertical/horizontal)

40%
4. **Calculate materials.**
a. Linear measure
 - Barge-boards
 - Brickmould
 - Casing
 - Drip-cap
 - Fascia
 - Frieze-boards
 - Half-timber work
 - Inside/outside corner
 - J-trim

10%

- Starter strip
- Strapping, undersill trim
- Water-table
- b. Area measure
 - Building-paper/house-wrap
 - Gable-ends
 - Percentage waste
 - Reduction for openings
 - Siding coverage (exposure)
 - Soffit and ventilation

Carpenter

Unit: D2.1 Practicum: Windows

Level: Three

Duration: 4 hours

Theory: 0 hours

Practical: 4 hours

Overview:

This unit of instruction is designed to provide practical experience in the installation of windows and associated hardware.

Objectives and Content:

**Percentage of
Unit Mark (%)**

1. **Prepare openings.**
 - a. Air-/moisture-barriers
 - b. Perimeter fastenings for sheathing
 - c. Verify rough opening (dimension, plumb, level, and square)
 - d. Window schedule

2. **Install windows.**
 - a. Adjustment
 - b. Fasteners
 - c. Hardware
 - d. Sash
 - e. Shim unit into square
 - f. Shims
 - g. Spacers

50%

50%

Carpenter

Unit: D2.2 Practicum: Room Coverings

Level: Three

Duration: 8 hours

Theory: 0 hours

Practical: 8 hours

Overview:

This unit of instruction is designed to provide practical experience in the installation of roof coverings and roofing accessories.

Objectives and Content:

**Percentage of
Unit Mark (%)**

- 1. Install roof coverings.**
 - a. Adhesives
 - b. Cap (ridge; hip)
 - c. Eave protection
 - d. Fasteners
 - e. Flashings (valley)
 - f. Layout
 - g. Roof-surface preparation
 - h. Starter
 - i. Underlayment

- 2. Install roofing accessories.**
 - a. Plumbing boots
 - b. Ridge/roof vents
 - c. Roof flashing
 - d. Snow-stops

60%

40%

Carpenter

Unit: D2.3 Practicum: Wall Coverings and Trim

Level: Three

Duration: 11 hours

Theory: 0 hours

Practical: 11 hours

Overview:

This unit of instruction is designed to provide practical experience in the installation of exterior wall coverings, trim, and accessories.

Objectives and Content:

**Percentage of
Unit Mark (%)**

1. Prepare wall surface.

10%

- a. Air-barrier sealing
- b. Building-paper/house-wrap
- c. Furring strips
- d. Insect screens
- e. Rain screens
- f. Sheathing and fastening
- g. Stucco wire
- h. Wire lath

2. Install trim.

20%

- a. Barge board
- b. Brackets
- c. Brick-mould
- d. Cornice
- e. Corner-board
- f. Dentils
- g. Drip-cap/head-casing
- h. Fascia
- i. Frieze
- j. Half-timber work
- k. Joints
- l. Layout
- m. Moulding
- n. Side casing
- o. Soffit
- p. Vents
- q. Water table
- r. Window sill

3. Install siding accessories.

20%

- a. Caulking
- b. Expansion joint

- c. Flashings and drip-cap
- d. Inside/outside corners
- e. J-mould
- f. Starter strip
- g. Undersill trim and F-trim

4. Install siding.

50%

- a. Cutting methods
- b. Expansion allowance
- c. Exposure
- d. Nailing requirements
- e. Selection of fasteners
- f. Story-pole layout

Carpenter

Unit: E1.4 Doors and Jams

Level: Three

Duration: 9 hours

Theory: 9 hours

Practical: 0 hours

Overview:

This unit is designed to provide theoretical grounding required to identify and describe interior/exterior doors and door-frames, and to describe their installation.

Objectives and Content:

**Percentage of
Unit Mark (%)**

1. Identify types of door-jambs and frames.

15%

- a. Board jambs
- b. Knockdown frames
- c. Metal frames
- d. Rabbeted jambs
- e. Sidelight frame
- f. Split jambs
- g. Transom frames

2. Identify components of door-jambs and frames.

10%

- a. Brick-mould
- b. Casing
- c. Head jambs
- d. Mullion
- e. Muntin
- f. Side jambs
- g. Sill
- h. Stops
- i. Threshold

3. Describe procedure for installing door-jambs and frames.

15%

- a. Aligning (wind) the jamb
- b. Bracing
- c. Door-handing
- d. Fastening
- e. Flashings
- f. Frame preparation
- g. Leveling
- h. Opening size
- i. Plumbing
- j. Shimming

- k. Spreading
- l. Squaring

4. Describe procedure for designing/building gable roofs. 10%

- a. Combination
- b. Double-action
- c. Dutch
- d. Fire-related
- e. Panel door
- f. French
- g. Hollow metal
- h. Hollow-core
- i. Insulated
- j. Patio (horizontal-sliding)
- k. Pre-hung
- l. Slab
- m. Solid-core
- n. Storm/screen

5. Describe procedure for installing doors. 25%

- a. Clearance
- b. Door-handing
- c. Hardware
- d. Operation
- e. Size and prepare rough opening (RO)
- f. Selecting door
- g. Templates

6. Lay out rafter locations. 10%

- a. Accordion
- b. Bifold
- c. Bypass
- d. Louvred
- e. Overhead
- f. Pocket
- g. Rolling-shutter

7. Lay out and cut rafters. 10%

- a. Adjustment of installed door and hardware
- b. Fasteners and anchors
- c. Manufacturer specification
- d. Sizing/preparation of rough opening

8. Assemble gable-/hip-roof of equal slope. 5%

- a. Header length
- b. Jamb sizes
- c. Quantities required
- d. Side-jamb length
- e. Sill length

Carpenter

Unit: E1.5 Hardware, Accessories and Fixtures

Level: Three

Duration: 4 hours

Theory: 4 hours

Practical: 0 hours

Overview:

This unit of instruction is designed to provide theoretical grounding required to identify door hardware, accessories, and architectural fixtures, and to describe their installation.

Objectives and Content:

	Percentage of Unit Mark (%)
1. Identify different kinds of door-hinges and describe their installation.	20%
a. Butt	
b. Concealed	
c. Continuous	
d. Double-action	
e. Half-surface	
f. Mortised/half-mortised	
g. Nonremovable pin (NRP)	
h. Pivot	
i. Spring-loaded	
j. Surface	
2. Identify different kinds of door lock-sets and describe their installation.	30%
a. Cylindrical	
b. Deadbolt	
c. Electric	
d. Exit	
e. Functions	
f. Mechanical coded	
g. Mortised	
h. Tubular	
3. Identify different kinds of door-closer/operators and describe their installation.	30%
a. Electric	
b. Hydraulic	
c. Pneumatic	
d. Spring-loaded	
4. Identify different kinds of door-hardware and describe their installation.	10%
a. Astragal	

- b. Coordinator
- c. Flush bolt
- d. Hold open
- e. Kickplates
- f. Push/pull plates and handles
- g. Silencer
- h. Stops
- i. Surface bolt
- j. Sweeps
- k. Threshold
- l. Viewer
- m. Weatherstrip

4. Identify different kinds of architectural fixtures/accessories, and describe their installation.

10%

- a. Barrier-free accessories (universal design)
- b. Classroom accessories
- c. Dispensers
- d. Handrails
- e. Kitchen accessories
- f. Lockers
- g. Toilet partitions
- h. Washroom fixtures

Carpenter

Unit: E1.6 Stairs

Level: Three

Duration: 40 hours

Theory: 40 hours

Practical: 0 hours

Overview:

This unit is designed to provide theoretical grounding required to identify common kinds of stairs, components, railings, and accessories, and to describe the building of staircases including the installation of railings.

Objectives and Content:

**Percentage of
Unit Mark (%)**

1. Identify common kinds of stairs.

5%

- a. Basement
- b. Curved (circular)
- c. Exterior/interior
- d. L-shaped
- e. Straight
- f. U-shaped (open/closed newel)
- g. Winder

2. Identify stair components.

5%

- a. Balustrade
- b. Guardrails
- c. Handrails
- d. Newels
- e. Nosing
- f. Risers
- g. Stringers
- h. Treads

3. Describe the construction/installation of common kinds of stairs.

15%

- a. Adhesives
- b. Attachment
- c. Cut of stair
- d. Drop of stringer
- e. Fasteners
- f. Guardrails
- g. Handrails
- h. Hangers
- i. Head-room clearance
- j. Landings
- k. Line of flight

- l. Line of travel
- m. Materials
- n. Code requirements
- o. Stair ratio
- p. Story pole
- q. Total run
- r. Total rise
- s. Unit rise
- t. Unit run

4. Calculate common dimensions required in stair-building. 20%

- a. Adhesives
- b. Drop stringer
- c. Fasteners
- d. Materials
- e. Riser quantity
- f. Rough opening
- g. Stringer length
- h. Total rise
- i. Total run
- j. Tread quantity
- k. Tread stock
- l. Unit rise
- m. Unit run

5. Identify common kinds of finish stairs. 5%

- a. Closed stairway
- b. Open stairway
- c. Prefabricated units

6. Identify components of finish stairs. 10%

- a. Balusters
- b. Buttress/stringer caps
- c. Fillets
- d. Gooseneck
- e. Level to rake (handrail)
- f. Mitred skirt
- g. Mouldings
- h. Nosing return
- i. Riser
- j. Starring/landing newels
- k. Tread
- l. Turn-out
- m. Volute
- n. Wall skirt

7. Describe the construction/installation of finish stairs. 15%

- a. Adhesives
- b. Assembly
- c. Attachment
- d. Drop of stringer
- e. Fasteners
- f. Guardrails
- g. Headrail
- h. Hangers
- i. Head-room
- j. Jig
- k. Landings
- l. Line of flight

- m. Code requirements
- n. Scribing
- o. Stairs joinery
- p. Stair ratio
- q. Story pole
- r. Materials
- s. Templates
- t. Total rise
- u. Total run
- v. Unit rise
- w. Unit run

8. Calculate materials for finish stairs. 5%

- a. Balusters
- b. Baluster-spacing
- c. Buttress
- d. Fillets
- e. Handrail
- f. Mouldings
- g. Newel posts
- h. Riser stock
- i. Skirt material
- j. Stringers
- k. Tread stock

9. Identify geometric (specialty) stairs. 5%

- a. Circular
- b. Curved
- c. Elliptical
- d. Prefabricated nits

10. Identify components of geometric (specialty) stairs. 5%

- a. Balusters
- b. Balustrade
- c. Fillets
- d. Gooseneck
- e. Handrail
- f. Laminated stringer
- g. Level to rake (handrail)
- h. Line of travel
- i. Mitred skirts
- j. Nosing return
- k. Point of radius
- l. Riser
- m. Rough framing
- n. Starting/landing newels
- o. Staved stringer
- p. String/buttress
- q. Caps
- r. Tread
- s. Turn-out
- t. Volute
- u. Wall skirts

11. Describe the construction and installation of specialty (geometric) stairs. 10%

- a. Geometric levels
- b. Moulds (drum; stave)
- c. Reference lines

d. Stretch-out line

12. Calculate dimensions for specialty (geometric) stairs.

5%

- a. Circumference
- b. Degree of turn
- c. Dimension rough-openings
- d. Handrail length(s)
- e. Inner/outer radii
- f. Inner/outer tread-widths
- g. Riser Quantity
- h. Stringer length(S)
- i. Total rise
- j. Tread angle
- k. Tread quantity
- l. Unit rise
- m. Unit run of travel

Carpenter

Unit: E1.7 Cabinets

Level: Three

Duration: 20 hours

Theory: 20 hours

Practical: 0 hours

Overview:

This unit is designed to provide theoretical grounding required to identify cabinets, shelving, and casework, and to describe the building/installation methods associated with these interior fixtures.

Objectives and Content:

**Percentage of
Unit Mark (%)**

1. Identify the components of prefabricated, site-built, and European (32 millimeter) cabinet systems, as well as the components of shelving units and casework.

30%

- a. Backsplash
- b. Base unit
- c. Closet-organizers
- d. Countertop
- e. Display case
- f. Doors and drawers
- g. Edge treatment
- h. European (32mm) system
- i. Gable
- j. Hanging brackets
- k. Hardware
- l. Kick-space (toe-kick)
- m. Ledger
- n. Mantle
- o. Nosing
- p. Rails and stiles
- q. Scribe strips
- r. Shelves
- s. Shelving unit
- t. Upper unit
- u. Valence

2. Describe procedure for building and installing common kinds of cabinets, shelving units, and casework.

50%

- a. Adhesives
- b. Anchors
- c. Elevation
- d. Fasteners

- e. Hardware
- f. Joinery
- g. Layout
- h. Leveling
- i. Openings and clearances
- j. Panel products
- k. Scribing
- l. Shimming
- m. Size
- n. Story pole (layout on the stick)

3. Calculate for cabinets, shelving units, and casework.

20%

- a. Area
- b. Balancing
- c. Gable widths
- d. Linear measure
- e. Percentage waste
- f. Quantities
- g. Shelf-spacing

Carpenter

Unit: E2.4 Practicum: Doors and Jambs

Level: Three

Duration: 10 hours

Theory: 0 hours

Practical: 10 hours

Overview:

This unit of instruction is designed to provide practical experience in the installation of interior and exterior doors, including their frames.

Objectives and Content:

**Percentage of
Unit Mark (%)**
30%

1. Assemble door-jambs and door-frames.

- a. Bracing
- b. Caulking
- c. Dadoes
- d. Exterior doors
- e. Fasteners
- f. Flashings
- g. Hangers
- h. Interior doors
- i. Knockdown frames
- j. Rabbets
- k. Spreaders

2. Install door-jambs and door-frames.

30%

- a. Align
- b. Brace
- c. Building envelope
- d. Caulking
- e. Flashing
- f. Horns
- g. Plumb, leveling, and square
- h. Shims
- i. Spreaders
- j. Stops

3. Install doors.

40%

- a. Bifold
- b. Bypass
- c. Clearances
- d. Door-handing
- e. Fasteners
- f. Hardware

- g. Overhead
- h. Pocket
- i. Prehung unit
- j. Prepare opening
- k. Slab
- l. Stops
- m. Troubleshoot
- n. Verify opening

Carpenter

Unit: E2.5 Practicum: Hardware, Accessories and Fixtures

Level: Three

Duration: 8 hours

Theory: 0 hours

Practical: 8 hours

Overview:

This unit of instruction is designed to provide practical experience in the installation of door-hardware, accessories, and related architectural components.

Objectives and Content:

	Percentage of Unit Mark (%)
1. Install various kinds of locksets.	30%
a. Cylindrical	
b. Deadbolt	
c. Exit devices	
d. Mortised	
2. Install various kinds of door-closers and door-openers.	30%
a. Hold-open	
b. Jamb-mounted	
c. Parallel-arm	
d. Recessed	
3. Install hardware.	10%
a. Flush-bolt	
b. Kickplate	
c. Push/pull plates	
d. Silencers	
e. Stops	
f. Sweeps	
g. Thresholds	
h. Viewers	
i. Weather-strip	
4. Install various kinds of hinges.	20%
a. Butt	
b. Continuous	
5. Install specialty accessories.	10%
a. Dispensers	
b. Toilet partitions	
c. Washroom components	

Apprenticeship Manitoba

Carpenter

Unit: E2.6 Practicum: Stairs

Level: Three

Duration: 50 hours

Theory: 0 hours

Practical: 50 hours

Overview:

This unit of instruction is designed to provide practical experience building and installing interior stairs and related components.

Objectives and Content:

**Percentage of
Unit Mark (%)**
60%

1. **Build and install common stairs.**
 - a. Adhesives, anchors, and fasteners
 - b. Jigs/templates
 - c. Landings
 - d. Layout
 - e. Line of travel
 - f. Material
 - g. National Building Code requirements
 - h. Newels
 - i. Point of radiance
 - j. Prefabricated units
 - k. Rails
 - l. Risers
 - m. Safety
 - n. Scribe
 - o. Shim
 - p. Treads
 - q. Winder

2. **Build and install finish stairs.**
 - a. Adhesives
 - b. Anchors
 - c. Assembly
 - d. Balustrade
 - e. Fasteners
 - f. Handrails
 - g. Joinery
 - h. Layout
 - i. Material selection
 - j. Newels
 - k. Risers
 - l. Sequence

40%

- m. Skirt-boards
- n. Stringers
- o. Treads

Carpenter

Unit: E2.7 Practicum: Cabinets

Level: Three

Duration: 35 hours

Theory: 0 hours

Practical: 35 hours

Overview:

This unit is designed to provide practical experience building/installing cabinets, shelving, and casework.

Objectives and Content:

**Percentage of
Unit Mark (%)**

1. Build/install cabinets.

50%

- a. Adhesives
- b. Anchors
- c. Backsplash
- d. Built-in
- e. Components
- f. Countertop
- g. Elevations
- h. Fasteners
- i. Fitting
- j. Hardware
- k. Joinery
- l. Layout
- m. Leveling
- n. Matching
- o. Materials
- p. Prefabricated
- q. Scribing
- r. Shimming
- s. Story-pole

2. Describe procedure for building and installing common kinds of cabinets, shelving units, and casework.

50%

- a. Adhesives
- b. Anchors
- c. Built-in
- d. Components
- e. Elevations
- f. Fasteners
- g. Fitting
- h. Hardware
- i. Joinery
- j. Layout; story-pole

- k. Leveling
- l. Matching
- m. Materials
- n. Prefabricated
- o. Scribing
- p. Shimming
