

Cabinetmaker Level 3

Cabinetmaker

Unit: C1 Stairs and Balustrades

Level: Three

Duration: 63 hours

Theory: 28 hours

Practical: 35 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills specific to building stairs and balustrades. Beginning with terminology, hazards and safe work practices, the unit covers stairs and balustrades and their characteristics, applications and techniques. The unit also covers the national building code and the calculations required for various stair types. Apprentices will describe and demonstrate layout, machining, assembly and installation of stair and balustrade components. Finally, apprentices will perform the layout and construction a stair assembly.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Define terminology associated with stairs and balustrades.	5%
a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)	
2. Identify hazards and describe safe work practices for stairs and balustrades.	5%
a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	
b. Site accessibility, conditions and considerations	
c. Work done by other trades	
3. Interpret drawings, codes and jurisdictional regulations for stairs and balustrades.	5%
a. Blueprints	
b. National Building Code of Canada	
c. Architectural Woodwork Manufacturers Association of Canada (AWMAC)	
4. Identify and describe stairs and balustrades and their characteristics, applications and techniques.	15%
a. Stair types	
• Straight	
• Winders	
• Spiral	
• Curved	
b. Stair components	
• Treads	
• Risers	
• Stringer types	
• Landings	

- Other
- c. Balustrade components
 - Hand rails parts
 - Balusters
 - Newel posts
 - Buttress caps
 - Fillets
 - Other
- d. Considerations
 - Headroom
 - Rise and run ratios
 - Spacing of balustrades
 - Building code requirements
- e. Stair joinery techniques
 - Dowels
 - Mortise and tenon
 - Rabbets
 - Dados
 - Screws
- f. Layout tools
 - Framing squares
 - Angle finders
 - Wing divider
 - Trammel points
 - Plumb bobs
 - Laser levels
- g. Wood properties
 - Strength
 - Shrinkage and warping
 - Species, grain and cut

5. Calculate national building code requirements for various stair types. 15%

- a. Rough and finished well opening
- b. Tread rise and run
- c. Total rise and run
- d. Headroom
- e. Number of units
- f. Stringer length
- g. Handrail
- h. Other

6. Describe and demonstrate the procedures to layout and machine stair and balustrade components. 20%

- a. Select and use layout tools
- b. Verify stairwell dimensions
- c. Calculate rise/run ratio, radius and spacing of balustrades
- d. Prepare full scale stair layouts
- e. Verify location of stair components
- f. Select and use tools and equipment
- g. Select stock
 - Quality and uniformity
 - Optimization

- h. Machine stringers to accept treads and risers
 - Jigs and templates
- i. Shape balusters, hand rails and newel posts
- j. Machine balusters
- k. Machine treads

7. Describe and demonstrate the procedures to assemble and install stairs and balustrade components. 10%

- a. Determine wall, floor and ceiling construction and finish
- b. Assemble stair components
 - In-shop and on-site
 - Sequence
 - Clamping techniques
- c. Locate studs and floor joists
- d. Position assembled stairs in place
- e. Level and plumb stairs and balustrades
- f. Adjust stairs to site conditions
- g. Secure stairs, balustrades and newel posts in place

8. Performs the procedures to layout and construct a stair assembly. 25%

- a. Layout
 - Left hand housed stringer
 - Right hand cut and mitred stringer
 - Newel post
- b. Cut and machine stair components
- c. Assemble stair components
 - Prepare stair for final finish

Cabinetmaker

Unit: C2 Solid Surface Material and Custom Countertops

Level: Three

Duration: 28 hours

Theory: 7 hours

Practical: 21 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of solid surface material and custom countertops. Beginning with terminology, hazards and safe work practices, the unit will interpret drawings, industry standards and product specifications pertaining to solid surface material and custom countertops. The unit covers solid surface material and their characteristics and applications. The unit also covers the procedures to fabricate solid surface material and custom countertops. Finally, apprentices will perform the procedures to fabricate solid surface material custom countertops.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
<p>1. Define terminology associated with solid surface material and custom countertops.</p> <p>a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)</p>	5%
<p>2. Identify hazards and describe safe work procedures for solid surface material and custom countertops.</p> <p>a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i></p> <ul style="list-style-type: none"> • Safety data sheets (dust, adhesives and preparation chemicals) • Person protective equipment 	5%
<p>3. Interpret drawings, industry standards and product specifications pertaining to solid surface material and custom countertops.</p> <p>a. Manufactures fabrication guide</p> <p>b. Shop drawings</p> <p>c. Architectural Woodwork Manufacturers Association of Canada (AWMAC)</p>	5%
<p>4. Identify and describe solid surface material and their characteristics and applications.</p> <p>a. Solid surface material</p> <ul style="list-style-type: none"> • Properties • Colour • Material dimensions <p>b. Adhesives</p> <ul style="list-style-type: none"> • Epoxy • Silicone <p>c. Material preparation</p> <ul style="list-style-type: none"> • Methyl hydrate 	30%

- Silicone
- d. Tools and equipment
 - Routers
 - Circular saws
 - Tooling
 - Sanders
 - Polishers
 - Specialty adhesive guns
 - Seaming tools
 - Clamps
 - Other
- e. Polishing
 - Abrasives
 - Polishing compounds
 - Finish level
- f. Repairs
 - Cracks
 - Chips
 - Deep scratches
 - Stained finish
 - Heat damage
- g. Fixtures and applications
 - Custom countertops
 - Integral sinks
 - Windowsills
 - Backsplashes
 - Other

5. Describe and demonstrate the procedures to fabricate solid surface material and custom countertops 20%

- a. Select and use tools and equipment
- b. Prepare parts and components
- c. Apply glue blocks and seaming tools
- d. Assemble solid surface substrates
- e. Apply edging
- f. Apply adhesive and hold components in place
- g. Remove clamps and excess adhesive
- h. Profile edges
- i. Machine countertop for cutouts
- j. Sand and polish components
 - Matte finish
 - Semi-gloss finish
 - Gloss finish
 - Light/dark colours
- k. Material handling and transportation
- l. Installation
 - Site seams
 - Scribing
 - Fixtures
 - Repair techniques

- 6. Perform the procedure to fabricate solid surface material and custom countertops. 35%**
- a. Site requirements
 - Dimensions
 - Template
 - b. Machine parts and components
 - c. Joining seams
 - Prep
 - Glue
 - Clamp
 - d. Edge build-ups
 - Prep
 - Glue
 - Clamp
 - Profile
 - e. Sand
 - f. Polish

Cabinetmaker

Unit: C3 Jigs, Templates and Prototypes

Level: Three

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of jigs, templates and prototypes. Beginning with terminology, hazards and safe work procedures, the unit will cover jigs, templates and their characteristics and applications. The unit also covers prototypes and their characteristics and applications. Finally, apprentices will perform the fabrication of jigs.

Objectives and Content:	Percent of <u>Unit Mark (%)</u>
1. Review terminology associated with jigs, templates and prototypes. a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)	5%
2. Identify hazards and describe safe work procedures for jigs, templates and prototypes. a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	5%
3. Interpret drawings, industry standards and product specifications pertaining to jigs, templates and prototypes.	5%
4. Identify and describe jigs and templates and their characteristics and applications. a. Types <ul style="list-style-type: none"> • Table saw sled • Dovetail jig • Dowel jig • Circle cutting jig • Site template (countertop) b. Application <ul style="list-style-type: none"> • One time use/production • Required tool/tooling • Purchase/fabricate • Convivence • Efficiency • Safety • Accuracy c. Jig and template material <ul style="list-style-type: none"> • Medium density fibreboard (MDF) 	25%

- Baltic birch
- Acrylic
- Other
- d. Hardware
 - Toggle clamps
 - Hold-down devices
 - Fasteners
 - Other

4. Identify and describe prototypes and their characteristics and applications. 25%

- a. Requirements
 - Form and function
 - Full scale or scaled model
 - Complete or partial
 - Other
- b. Considerations
 - Time
 - Labour
 - Material
 - Hardware
 - Finish
- c. Prototype materials
 - Actual
 - Simulated
 - Equivalent material
- d. Jobsite challenges
 - Access
 - Obstacles
 - Services
 - Obstruction of utilities
 - Conflict between function and appearance
 - Conflict within specifications

7. Perform fabrication of jigs. 35%

- a. Research and development
 - Sketch
 - Materials and hardware
 - Machining process
- b. Produce jigs
 - Safety
 - Longevity
 - Limitations
- c. Test jigs
 - Accuracy
 - Functionality
- d. Present and demonstrate jig
 - Communication practices

Cabinetmaker

Unit: C4 Curved Components I

Level: Three

Duration: 7 hours

Theory: 4 hours

Practical: 3 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills for curved components. Beginning with terminology, hazards and safe work procedures, the unit will cover forming and laminating and their characteristics and applications. The unit also covers the procedures to build forms for curved applications. Apprentices will demonstrate curved laminating applications. Finally, apprentices will demonstrate the procedures to steam bend solid wood.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Review terminology associated with curved components.	5%
a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)	
2. Identify hazards and describe safe work procedures for curved components.	5%
a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	
3. Interpret drawings, industry standards and product specifications pertaining to curved components.	5%
4. Identify and describe forming and laminating and their characteristics and applications.	20%
a. Materials	
• Plywood	
• Particle board	
• Medium density fiberboard (MDF)	
• Bendable plywood	
• Solid wood	
• Veneers	
• Solid surface	
b. Types of form construction	
• Shaped walls	
• Two-part moulds	
• Vacuum mould	
c. Adhesives	
• Wood glues	
• Contact cement	

- Epoxies
- d. Fasteners
 - Screws
 - Nails
 - Staples
 - Anchors
- e. Clamping methods
 - Bar
 - Band
 - C-clamp
 - Vacuum bag
 - Edge
- f. Steam methods
 - Steam box
 - Temperature
 - Time

5. Describe and demonstrate the procedures to build forms for curved applications. 25%

- a. Select materials to build form
 - Strength and durability
 - Adhesive non-bonding properties (release)
- b. Determine shape to create form
 - Drawings
 - Template
 - Spring back
 - Layout
- c. Select and use tools and equipment
 - Compass
 - Trammel points
 - Bandsaw
 - Jigsaw
 - Router
 - Other
- d. Apply adhesives and fasteners

6. Describe and demonstrate the procedures for curved laminating applications. 20%

- a. Select and use clamping method
- b. Determine laminating requirements
 - Material dimensions (oversize)
 - Adhesive
- c. Select and sort materials
 - Joint types
 - Grain
 - Species
 - Defects
 - Color
- d. Joint types
 - Scarf
 - Butt
- e. Apply adhesives, fasteners and clamps
 - Curing time

- f. Perform final sizing techniques
 - Joint
 - Saw
 - Plane
 - Profile

7. Describe and demonstrate the procedures to steam bend solid wood.

20%

- a. Select and use tools and equipment
- b. Determine steam-form wood requirements
 - Spring back
 - Wood moisture content
- c. Build steam box
 - Steam source
 - Insulation
 - Temperature gauge
 - Part size
- d. Calculate length of time required for steaming
 - Species
 - Steam box temperature
 - Material thickness
- e. Clamp wood to form
 - Time to clamp
 - Set time
- f. Perform final sizing techniques
 - Joint
 - Saw
 - Plane
 - Profile

Cabinetmaker

Unit: C5 Computer Numerical Controlled Equipment I

Level: Three

Duration: 35 hours

Theory: 14 hours

Practical: 21 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of computer numerical controlled (CNC) equipment. Beginning with terminology, hazards and safe work procedures, the unit will cover CNC and automated equipment and their characteristics and applications. The unit also the procedures to operate and maintain a CNC machining center. Finally, apprentices will perform CNC machining center applications.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
<p>1. Review terminology associated with computer numerical controlled (CNC) equipment.</p> <p>a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)</p>	5%
<p>2. Identify hazards and describe safe work procedures for CNC equipment.</p> <p>a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i></p> <p>b. Perimeter guards</p> <ul style="list-style-type: none"> • Safety mats • Optical eye • Safety cage <p>c. Emergency stop</p>	5%
<p>3. Interpret drawings, industry standards, machinery and tooling specifications pertaining to CNC equipment.</p>	5%
<p>4. Identify and describe CNC and automated equipment and their characteristics and applications.</p> <p>a. CNC Types</p> <ul style="list-style-type: none"> • Router • Point to point • Edge bander • Beam Saw • Lathe • Other <p>b. Computer aided design (CAD)</p> <ul style="list-style-type: none"> • DWG • DXF 	25%

- Cartesian coordinate system
- c. Computer aided manufacturing (CAM)
 - Nesting
 - G-Code
 - Basic programming
- d. Machining features
 - Table size (4' x 8' and 5' x 12')
 - 3-axis and 5-axis
 - Fields
 - Position pins
 - Home position (0,0)
 - Calibrating
 - Mirroring
- e. Tooling holder
 - Hollow taper shank (HSK)
 - ISO cone
 - Collet
- f. Material hold down device
 - Nesting table
 - Vacuum pods (rail system)
 - Spoil boards
 - Fixtures
 - Clamping table
- g. Tooling
 - End mill
 - Face mill
 - Ball nose
 - V bit
 - Boring bit
 - Roughing (chip breaker)
 - Flute
 - Up/down spiral
 - Insert tooling
 - Compression
 - Saw blade aggregate
 - Left hand and right hand rotation
- h. Tooling parameters
 - Feed speed
 - Rpm
 - Chip load
 - Cutting direction
 - Number of passes
 - Tooling compensation (left, centre and right hand)
 - Ramping

5. Describe and demonstrate the procedures to operate a CNC machining center. 25%

- a. Equipment start-up sequence
 - Air supply
 - Electrical power
 - Dust extraction
- b. Calibrate CNC equipment

- Zero the machine
- c. Select and load program
- d. Install tooling
 - Record tooling measurements (width and length)
 - Type
- e. Program or modify parameters
 - Materials thickness
 - Cutting direction
 - Select tooling
 - Tooling compensation
- f. Execute program
 - Run test piece
 - Confirm machining precision
- g. Identify and correct performance problems
- h. Equipment shut down sequence

6. Describe and demonstrate the procedures to maintain computer numerical controlled (CNC) and automated equipment. 10%

- a. Apply lockout and tagout procedures
- b. Calibrate equipment
- c. Recognize and replace worn and damaged tooling
- d. Clean and lubricate automated equipment
- e. Use dust collector
- f. Maintain dust collection system
- g. Recognize and replace worn or damaged machine parts
- h. Use and maintain guards

7. Perform CNC machining center applications. 25%

- a. Equipment start-up sequence
- b. Calibrate machine
- c. Load program
- d. Change tooling
- e. Execute program
- f. Verify accuracy
- g. Equipment shut down sequence

Cabinetmaker

Unit: C6 Veneer

Level: Three

Duration: 28 hours

Theory: 10 hours

Practical: 18 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of veneer. Beginning with terminology and safe work procedures, the unit covers veneer and its characteristics and applications. The unit also covers the procedures to adhere veneer to substrates. Finally, apprentices will perform various veneering projects.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Review terminology associated with veneer.	5%
a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)	
2. Identify hazards and describe safe work procedures associated for veneer.	5%
a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	
3. Interpret drawings, industry standards and product specifications pertaining to veneer.	5%
a. Architectural Woodwork Manufacturers Association of Canada (AWMAC)	
b. Canadian Hardwood Plywood and Veneer Association (CHPVA)	
4. Identify and describe veneer and its characteristics and applications.	25%
a. Species	
• Oak	
• Cherry	
• Maple	
• Other	
b. Cuts	
• Rotary	
• Flat	
• Quarter	
• Rift	
c. Specialty	
• Burl	
• Birds eye	
• Fiddle back	
• Curly	

- d. Defects
 - Knots
 - Mineral stains
 - Heartwood
 - Sapwood
 - Insect damage
- e. Grades
- f. Matching
 - Book
 - Slip
 - Random
 - Diamond
 - Reverse diamond
 - Other

5. Describe the procedures to prepare veneer. 15%

- a. Select and use tools and equipment
- b. Calculate optimum size of veneer leaves
- c. Cut veneer
 - Shears
 - Guillotine
 - Veneer saw
- d. Join veneer pieces
 - Stitcher
 - Veneer tape
 - Edge gluer
- e. Repair checks and splits in veneer
- f. Cut and prepare substrate
 - Size
 - Break surface (toothing plane)
- g. Sand substrate
- h. Relax veneer

6. Describe the procedures to adhere veneer to substrates. 15%

- a. Select adhesives
- b. Apply adhesives
 - Glue rollers
 - Glue spreaders
- c. Adhere veneer to substrate
 - Hot press
 - Cold press
 - Vacuum press
- d. Perform visual inspection of veneer
- e. Scrape veneer seams
- f. Trim overhanging edges
 - Sanders
 - Rasps
 - Files
 - Block plane
 - Trimmers
- g. Scrape and sand veneer face

7. Perform various veneering projects.

30%

- a. Select veneer
- b. Prepare veneer
- c. Select substrate
- d. Prepare substrate
- e. Join veneer leaves
- f. Adhere veneer to substrate
- g. Clean up veneered panels

Cabinetmaker

Unit: C7 Advanced Furniture and Casework

Level: Three

Duration: 70 hours

Theory: 21 hours

Practical: 49 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills for advanced furniture and casework. Beginning with terminology and safe work procedures, the unit will review site layout applications and considerations. The unit focuses on advanced fixtures and casework, their characteristics and applications. Finally, apprentices will perform fabrication and assembly of advanced furniture and casework.

Objectives and Content:	Percent of <u>Unit Mark (%)</u>
<p>1. Define terminology associated with advanced furniture and casework.</p> <p>a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)</p>	5%
<p>2. Identify hazards and describe safe work procedures pertaining to advanced furniture and casework.</p> <p>a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i></p>	5%
<p>3. Interpret industry standards and drawings pertaining to advanced furniture and casework.</p> <p>a. Architectural Woodwork Manufacturers Association of Canada (AWMAC)</p> <p>b. Shop-specific standard</p> <p>c. Shop drawings</p> <p>d. Accessible Canada Act (ACA)</p>	5%
<p>4. Review site layout applications and considerations.</p> <p>a. Select and use layout tools</p> <p>b. Identify potential problems on site</p> <p>c. Take site measurements</p> <p>d. Template site conditions</p> <p>e. Observe site accessibility</p> <p>f. Verify design requirements</p>	5%
<p>5. Identify and describe advanced fixtures and casework, their characteristics and applications.</p> <p>a. Institutional</p> <ul style="list-style-type: none"> • Nursing station • Courtrooms 	20%

- Laboratories
- Other
- b. Commercial
 - Display fixtures
 - Reception desk/workstation
 - Bars
 - Storefronts
 - Elevator panels
 - Bulkheads and ceilings
 - Other
- c. Residential
 - Kitchen islands
 - Rangehoods
 - Built-ins
 - Other
- d. Fire rated panels
- e. Die walls
 - Ballistic material
 - Cable chase
 - Access panels (utilities)
- f. Curved components
 - Casework
 - Countertops
 - Walls
 - Mouldings
- g. Specialty tops
 - Stainless steel tops
 - Epoxy
 - Stone
 - Glass
 - Other
- h. Cabinet grade construction
 - Premium
 - Custom (AWMAC)

6. Perform fabrication and assembly of advanced furniture and casework.

60%

- a. Interpret/create drawings
- b. Layout
- c. Machine components
- d. Dry fit
- e. Glue and assemble components and subassemblies
- f. Combine components in final assemblies
- g. Surface preparation

Cabinetmaker

Unit: C8 Wood Finishing II

Level: Three

Duration: 35 hours

Theory: 14 hours

Practical: 21 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of wood finishing. Beginning with terminology and safe work procedures, the unit reviews finishing materials and their characteristics and application. The unit also covers maintaining spray finishing equipment. Apprentices will describe and demonstrate the procedures for the application of finishing materials. Finally, apprentices will perform the procedures for preparing and finishing wood products.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Review terminology associated with wood finishing. a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)	5%
2. Identify hazards and describe safe work procedures for wood finishing. a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i> <ul style="list-style-type: none"> • Safety data sheets • Workplace Hazardous Material Information System (WHMIS) and procedures. • Personal protective equipment • Flammability, off gassing and toxicity • Hazardous material disposal 	5%
3. Interpret industry standards and drawings pertaining to wood products finishing. a. Architectural Woodwork Manufacturers Association of Canada (AWMAC) b. Shop-specific standard c. Shop drawings and specifications	5%
4. Review finishing materials, and their application and characteristics. a. Types <ul style="list-style-type: none"> • Lacquers • Varnishes • Shellac • Stains • Water-based/solvent-based • Oils b. Additives <ul style="list-style-type: none"> • Solvents 	20%

- Driers
- Slow-reducers
- Catalysts
- c. Application methods
 - Spraying
 - Wiping
 - Brushing (size, shape and type)
 - Rolling
 - Pouring
- d. Finishing material properties
 - Sheen
 - Drying time
 - Appearance
 - Durability
- e. Wood properties
 - Absorption
 - Open grain/closed grain
- f. Procedures to prepare surface
 - Scuff sanding (manual and machine)
 - Removing contaminants (blowing off dust, tacking surface, vacuuming)
 - Filling imperfections
 - Shading/toning
 - Wash coat
- g. Finishing problems
 - Drips and runs
 - Orange peel
 - Fish eye
 - Pin-holes
 - Colour variance
 - Bleeding
 - Blush

5. Identify and describe maintaining spray finishing equipment, and their characteristics and applications. 15%

- a. Spray systems
 - High volume low pressure (HVLP),
 - Low volume low pressure (LVLP),
 - Airless
 - Air assist airless
 - Conventional
 - Flat line
 - Other
- b. Finishing equipment components
 - Tips
 - Needles
 - Air cap
 - Pressure pot
 - Hoses
 - Agitators

6. Describe and demonstrate the procedures to maintain spray equipment. 15%

- a. Apply lockout and tagout procedures

- b. Clean finishing equipment
- c. Lubricate finishing equipment
- d. Store finishing equipment
- e. Recognize and replace worn or damaged finishing equipment components
- f. Change filters in air and fluid lines
- g. Change filters in ventilation and air makeup system

7. Demonstrate the procedures for the application of finishing materials. 15%

- a. Select finishing materials
- b. Measure, mix and filter finishing materials
- c. Test and adjust finishing materials
- d. Select and use tools and equipment for applying finishing material
 - Manual
 - Spray finishing
- e. Test application tools with finishing material
 - Manual
 - Spray finishing
- f. Confirm product is cleaned, sanded and ready to be finished
- g. Select PPE used for finishing materials
- h. Select application technique
- i. Set up area for applying and drying
 - Ventilation
 - Clean
 - Racking
- j. Check product for finishing problems
- k. Repair finishing problems if required

8. Perform the procedures for wood finishing. 20%

- a. Measure, mix and filter product
- b. Test and adjust finishing materials
 - Sample board
- c. Application method
 - Manual
 - Spray
- d. Apply finish
 - Stain
 - Sealer
 - Topcoat
