

Cabinetmaker Level 4

Cabinetmaker

Unit: D1 Journeyperson Trainer

Level: Four

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

Level 1 in-school technical training offers an entry-level orientation to the challenges of apprenticeship training as it relates to the development of core tasks, skill requirements, as social competencies. This unit introduces senior apprentices to the responsibilities of workplace training that they will assume as supervising journeypersons. Most trades have a rich tradition of refreshing and sharing their trade skills from one generation of trade practitioner to the next. This unit orients senior apprentices to some of the practical and conceptual tools that can enable them to contribute to this trade heritage when they become certified journeypersons and, ultimately, journeyperson trainers.

The journeyperson's obligation to assist entry-level apprentices to develop skills and knowledge is complex and challenging. It involves safety considerations, employer expectations, provincial regulations, as well as the tradition of skills stewardship that links modern practice with the long history of workplace teaching and learning that defines the apprenticeable trades. The ability to offer timely and appropriate support to apprentices is itself an important area of trade learning. This unit presents material intended to help refine this ability through reflection and discussion by senior apprentices, and discussion with their in-school instructor and journeyperson trainer.

This content reflects Manitoba and Canadian standards prescribed for journeyperson-level supervisory capabilities, as well as key topics in current research on the importance of workplace training in apprenticeship systems. These detailed descriptors represent suggested focal points or guidelines for potentially worthwhile exploration, and are neither mandatory nor exhaustive.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Compare/contrast role-options and responsibilities of the supervising journeyperson.	50%
a. Implicit vs. explicit standards and content: training goals are/are not codified; assessment measures are/are not used	
b. Accountability for results: e.g., journeyperson is/is not required to prepare performance evaluation that could affect apprentice's employability or wage-rate, etc.	
c. Long-term vs. short-term supervision assignments – e.g., considerable latitude/little latitude for apprentice to learn from mistakes	
d. Formally vs. informally structured – e.g., supervision assignment is part of a prescribed cycle of assignments involving coordination among multiple journeypersons; apprentice is trained according to an individual training plan negotiated with employer	
e. Types of supervisory role options and what is implied by each:	
• Journeyperson Trainer (JT) role: often initiated by someone other than apprentice, and limited to a particular skill set, task, or production requirement	

- Mentor role: often initiated by apprentice, and relatively open-ended regarding content, duration, etc.
- Peer role: typically involves individual upgrading or cross-training of one journeyperson by another; can include senior apprentice assisting less-experienced trade learner
- Coordinator role: often a senior-level journeyperson appointed by an organization to assume responsibilities for monitoring progression of groups of apprentices
- Other roles: may be improvised by journeyperson, such as combination or multiple roles of the above

2. Describe and demonstrate common requirements about providing journeyperson level supervision. 50%

- Apprenticeship learning adapted to journeyperson supervision assignments and a journeyperson perspective
 - Application of adult education concepts to trades teaching and learning (e.g., responsibilities and expectations of senior-level apprentices)
 - Practical significance of 'styles' of adult learning and teaching
 - Helping senior-level apprentices integrate in-school technical training and on-the-job practical training experiences
 - Providing help and guidance about new tasks and skills
 - Providing help and guidance about fixing mistakes
 - Learning and teaching "the ropes" – socialization of apprentice within a community of trade practice (e.g., how to borrow a tool, interrupt a journeyperson, and seek advice of experienced co-workers)
 - Coverage and documentation of prescribed tasks and subtasks where applicable
 - Discuss the limits of the journeyperson trainers' own responsibilities and competence (e.g., scope, willingness to train, etc.)
 - Benefits of maintaining a personal record of achievements, ideas, and needs as a journeyperson trainer (e.g., resume, portfolio, training credentials, logbook, etc.)
- Individual reflection and guided group discussion about personal experiences of workplace learning as an apprentice
 - Identification of best and worst practices of journeyperson trainer
 - Identification of workplace and other factors that can contribute to good and bad trades teaching/learning experiences
 - Development of professional standards and work ethic regarding one's responsibility to share one's knowledge and skills with others in the workplace (e.g., use/misuse of humour, rigour, discretion, craft-pride, etc.)
 - Qualities of a good journeyperson trainer
 - Components of workplace journeyperson training
 - Processes and recommended practices re: journeyperson training
 - Troubleshooting problems re: supervision assignments
- Role of assessment in supervising, coaching, or guiding other people to learn or improve their skills (e.g., formative and summative evaluation), and how this might contribute to how the journeyperson-level supervision task is approached in future
- Compare and contrast discussion results with current knowledge and resources about workplace training methods as they apply to journeyperson-level supervision assignments
- Other (as may be specified by instructor)

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Unit: D2 Furniture Capstone Project Design

Level: Four

Duration: 63 hours

Theory: 28 hours

Practical: 35 hours

Overview:

This unit is designed to provide the apprentice with a capstone project of furniture design. The capstone project is a substantial, in-depth work of research, creation and design of a piece of furniture with elements that have been outlined and approved by the instructor. This unit will review drawings and the procedures to produce CAD drawings. The unit covers furniture design, and their characteristics, applications and techniques. Apprentices will demonstrate and perform the procedures required to design and plan a unique furniture capstone project. Finally, apprentices will perform the procedures to produce a unique CAD shop drawing for the furniture capstone project.

Objectives and Content:	Percent of <u>Unit Mark (%)</u>
1. Define terminology associated with the furniture capstone project design.	5%
2. Identify hazards and describe safe work procedures for the furniture capstone project design.	5%
a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	
• Ergonomics	
3. Interpret drawings, industry standards and product specifications pertaining to the furniture capstone project design.	5%
a. Architectural Woodwork Manufacturers Association of Canada (AWMAC)	
b. Shop drawings	
4. Review drawings and their characteristics, applications and techniques.	5%
a. Categories	
• Architectural drawing set	
• Shop drawings	
• Furniture drawings	
b. Drawing types	
• Orthographic projection	
• Isometric	
• Oblique	
• Perspective	
• Sketches	
c. Views	
• Plan	

- Elevation
 - Section
 - Detail
- d. Drawing conventions
- Alphabet of lines
 - Reference numbers, symbols and abbreviations
 - Units of measurement (metric/imperial)
 - Scaling
 - Title block and legend
 - Notes and schedules
- 5. Review the procedures and techniques to produce CAD drawings. 5%**
- a. Set-up
- Current profile
 - Drawing features
- b. Produce drawings in model space
- c. Modify drawings in model space
- d. Set-up paper space
- Page set-up (size)
 - Viewport
 - Title block
 - Scale
- e. Dimension and annotate drawings
- f. Plot and publish drawings
- 6. Describe furniture design and their characteristics, applications and techniques. 15%**
- a. Function
- Use
- b. Form
- Appearance
- c. Levels of design
- Create, adapt and copy
- d. Elements of design
- Lines and shapes
 - Mass
 - Color and texture
- e. Principals of design
- Proportion
 - Balance and harmony
 - Rhythm and repetition
- f. Design decisions
- Wants and needs
 - Gather information
 - Create and refine ideas
 - Analyze ideas
- 7. Demonstrate and perform the procedures required to design and plan a unique furniture capstone project. 20%**
- a. Research and brainstorming
- Vision
 - Purpose
 - Material selection

- Hardware selection
- b. Design
 - Form and function
 - Principals of design
- c. Required elements incorporated into project design
 - Curved component
 - Veneer
 - CNC component
 - Final material finish
 - Other
- d. Layout
 - Sketch
 - CAD
- e. Details
 - Mockup
 - Prototype
- f. CNC programming
- g. Estimating
 - Cut bills
 - Material and hardware takeoff
 - Material optimization
- h. Purchase product
 - Suppliers

8. Perform the procedures to produce a unique CAD shop drawing for the furniture capstone project 40%

- a. Set-up
 - Current profile
 - Drawing features
- b. Produce drawings in model space
- c. Modify drawings in model space
- d. Set-up paper space
 - Page set-up (size)
 - Viewport
 - Title block
 - Scale
- e. Dimension and annotate drawings
- f. Plot and publish drawings

Cabinetmaker

Unit: D3 Architectural Millwork Products and Moldings

Level: Four

Duration: 49 hours

Theory: 14 hours

Practical: 35 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of architectural millwork products and moldings. Beginning with terminology, hazards and safe work procedures, the unit will interpret drawings, industry standards and product specifications pertaining to architectural millwork products and moldings. The unit covers architectural millwork components and fixtures, their characteristics and applications. The unit also covers the procedures to fabricate and install architectural millwork components and fixtures. Finally, apprentices will perform the fabrication of architectural millwork components and fixtures.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Define terminology associated with architectural millwork products and mouldings.	5%
a. Cabinetmaker Red Seal Occupational Standard (RSOS)	
2. Identify hazards and describe safe work procedures of architectural millwork products and moldings.	5%
a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	
3. Interpret drawings, industry standards and product specifications pertaining to architectural millwork products and moldings.	5%
a. Architectural Woodwork Manufacturers Association of Canada (AWMAC)	
b. Drawings	
4. Identify and describe architectural millwork components and fixtures, their characteristics and applications.	25%
a. Architectural millwork components	
• Doors, door frames and sidelights	
• Wainscoting	
• Crown and base mouldings	
• Columns	
• Wall cladding	
• Window frames	
• Transoms	
• Wall panels	
b. Architectural fixtures	
• Store and office fixtures	
• Benches	

- Custom display cases and furniture
- Reception desk
- c. Joints
 - Dowel
 - Biscuit
 - Dovetail
 - Finger
 - Hardware
 - Rabbets and dados
 - Mitres
 - Mortise and tenon
- d. Fasteners
 - Concealed fasteners
 - Screws
 - Toggle fasteners
 - Lockable biscuits
 - Flat metal brackets
- e. Passage door components
 - Hinges
 - Locksets and passage sets
 - Panic bars and overhead closers
- f. Architectural specifications
 - Fire-rated products
 - Accessibility requirements
- g. Material properties
 - Expansion and contraction
 - Photosensitivity
- h. Accessibility and on-site considerations
 - Elevators
 - Door openings
 - Stairs
- i. Decorative elements
 - Glass
 - Steel
 - Acrylics
 - Leather

5. Describe and demonstrate the procedures to fabricate architectural millwork components and fixtures. 15%

- a. Construct and fabricate architectural components and fixtures
- b. Factor in unique challenges of custom applications
 - Electrical and mechanical components
 - Special site conditions
- c. Join components
 - Fasteners and clamps
 - Assembly sequence
- d. Combine architectural components and fixtures into larger sections
- e. Verify final dimensions of assembled product
- f. Incorporate decorative elements
 - Glass
 - Steel
 - Acrylics

- 6. Describe and demonstrate the procedures to install architectural millwork components and fixtures. 20%**
- a. Select and use tools and equipment
 - b. Assess site conditions
 - Temperature and humidity
 - c. Protect floors and surrounding areas
 - d. Check site for installation conditions
 - Level floor
 - Plumb walls
 - Square corners
 - e. Locate structural components and utilities
 - Studs, Joists and blocking
 - Utilities (mechanical, electrical and data)
 - f. Assemble architectural components
 - g. Fit, level and fasten architectural millwork products on walls, ceiling and floor
 - Paneling and wainscoting
 - Doors and windows
 - h. Install Fixtures
 - Fireplace mantles
 - Columns
 - Display fixtures
 - i.
 - Store fixtures
 - j. Install moldings
 - Standing and running trim
 - Mitre, cope, butt and scarf
 - k. Finalize installation
 - Conceal nail and screw holes
 - Adjust doors, drawer fronts and hardware
 - Reinstall removable panels and install grommets
 - Repair imperfections
 - Clean architectural millwork and worksite
 - Apply caulking and silicone
- 7. Perform the fabrication of architectural millwork components and fixtures. 25%**
- a. Layout
 - Drawing
 - Sketch
 - b. Cut and assemble architectural fixtures
 - Column
 - Mantle
 - c. Install standing and running trims
 - Coping, mitres and scarf
 - Built up trim
 - d. Preparation for finishing
 - Scrape and sand
 - Repair imperfections

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Unit: D4 Curved Components II

Level: Four

Duration: 14 hours

Theory: 4 hours

Practical: 10 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of curved components. Beginning with terminology, hazards and safe work procedures, the unit will review forming and laminating, their characteristics and applications. The unit will also review the procedures to build forms for curved applications, curved laminating and steam bending solid wood. Finally, apprentices will perform the procedures to make curved components.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Review terminology associated with curved components.	5%
a. 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>	
2. Interpret drawings, industry standards and product specifications pertaining to curved components.	5%
a. Shop drawings	
4. Review forming and laminating and their characteristics and applications.	5%
a. Materials	
• Plywood	
• Particle board	
• Medium density fibreboard (MDF)	
• Bendable plywood	
• Solid wood	
• Veneers	
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. Review the procedures to build forms for curved applications. 10%

- 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. Review the procedures for curved laminating applications 10%

- 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. Review the procedures to steam bend solid wood. 10%

- 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

7. Perform the procedures to make curved components. 50%

- a. Build curved form
- b. Prepare material
- c. Steam/laminate parts
- d. Clamp to form
- e. Perform final sizing

Cabinetmaker

Unit: D5 Computer Numerical Controlled Equipment II

Level: Four

Duration: 21 hours

Theory: 7 hours

Practical: 14 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of computer numerical controlled (CNC) Equipment. Beginning with terminology and safe work procedures, the unit covers Interpreting drawings, industry standards and machinery specifications pertaining to CNC equipment. The unit will review CNC equipment and their characteristics and applications. Apprentices will describe and demonstrate the procedures to operate a CNC machining center and maintain computer numerically controlled equipment. Finally, apprentices will demonstrate and 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 and machinery specifications pertaining to CNC equipment.</p>	5%
<p>4. Review CNC 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 	10%

- DXF
- 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
 - Tooling compensation (left, centre and right hand)
- 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. Demonstrate the procedures to operate a CNC machining center.

15%

- a. 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. Shut down sequence

6. 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. 50%

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

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Unit: D6 Veneer Applications

Level: Four

Duration: 14 hours

Theory: 4 hours

Practical: 10 hours

Overview:

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

Objectives and Content:	Percent of Unit Mark (%)
1. Review terminology associated with veneer applications.	5%
2. Identify hazards and describe safe work practices for veneer applications.	5%
a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	
3. Interpret industry standards and specifications pertaining to veneer.	5%
a. Architectural Woodwork Manufacturers Association of Canada (AWMAC)	
b. Canadian Hardwood Plywood and Veneer Association (CHPVA)	
4. Review veneer and its characteristics and applications.	15%
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
- Splits
- e. Grades
- f. Matching
 - Book
 - Slip
 - Random
 - Diamond/reverse diamond
 - Other

5. Review and demonstrate 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. Review and demonstrate 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 applications. 40%

- 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: D7 Furniture Capstone Project

Level: Four

Duration: 84 hours

Theory: 0 hours

Practical: 84 hours

Overview:

This unit is designed to provide the apprentice with a capstone project experience. The furniture capstone is a final furniture project that allows apprentices to showcase the knowledge and skills they have gained through their apprenticeship program and apply them to real-world applications. This unit is the fabrication and execution of the unit *D1, Capstone Furniture Project Design*.

Objectives and Content:	Percent of <u>Unit Mark (%)</u>
1. Review terminology associated with the furniture capstone project. a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)	5%
2. Identify hazards and describe safe work practices of the furniture capstone project. a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i>	5%
3. Interpret drawings, industry standards and product specifications pertaining to the furniture capstone project. a. Architectural Woodwork Manufacturers Association of Canada (AWMAC) b. Shop drawings	5%
4. Review furniture fabrication. a. Solid wood breakout b. Panel product breakout c. Joinery techniques d. Jigs and fixtures e. Furniture assembly f. Surface preparation and finishing	5%
4. Perform fabrication of capstone project as per capstone project design. a. Shop drawing <ul style="list-style-type: none"> • Conforms to capstone furniture project design b. Tool and equipment selection c. Material breakout <ul style="list-style-type: none"> • Solid wood machining • Panel product machining • Other 	80%

- d. Joinery techniques
 - Casework
 - Solid wood
- e. Assembly
 - Glue and clamp
 - Mechanical fasteners
- f. Hardware installation
- g. Finishing
 - Surface preparation
 - Seal
 - Topcoat
 - Other

Cabinetmaker

Unit: D8 Restoration and Wood Finishing

Level: Four

Duration: 28 hours

Theory: 7 hours

Practical: 21 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of restoration and wood finishing. Beginning with terminology, hazards and safe work procedures, the unit will cover woodwork repairs and restoration, their applications and characteristics. The unit also will describe and demonstrate the procedures for woodturning. Apprentices will describe and demonstrate the procedures to restore and refinish woodwork. Finally, apprentices will perform final sanding and finish woodwork.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
<p>1. Define terminology associated with restoration and wood finishing.</p> <p>a. Refer to Cabinetmaker Red Seal Occupational Standard (RSOS)</p>	5%
<p>2. Identify hazards and describe safe work practices with restoration and wood finishing.</p> <p>a. Relevant content and resources from unit <i>A2 Trade Safety Awareness</i></p> <ul style="list-style-type: none"> • Workplace Hazardous Material Information System (WHMIS) and procedures. • Safety data sheets • Personal protective equipment • Flammability, off gassing and toxicity • Hazardous material disposal 	5%
<p>3. Interpret industry standards and drawings pertaining to restoration and wood finishing.</p> <p>a. Architectural Woodwork Manufacturers Association of Canada (AWMAC)</p> <p>b. Shop drawings</p>	5%
<p>4. Identify and describe woodwork repairs and restoration, their applications and characteristics.</p> <p>a. Woodwork types</p> <ul style="list-style-type: none"> • Furniture • Windows • Doors • Moldings • Other • Furniture 	15%

- b. Furniture styles
 - Chippendale
 - Queen Anne
 - Victorian
 - Shaker
 - Other
- c. Joints
 - Mortise and tenon
 - Dovetail
 - Rabbet
 - Butt
 - Dowel
 - Dado
- d. Imperfections
 - Scratches
 - Dents
 - Chips
 - Breaks
 - Missing parts
 - Stains
- e. Adhesives
 - Hide glue
 - Polyurethane
 - Aliphatic resin
 - Other
- f. Hardware and fasteners
 - Hinges
 - Pulls
 - Decorative
 - Historical
- g. Finishing tools and equipment
 - Brushes
 - Rollers
 - Spray guns
 - Shaders
 - Sponges
 - Rags
- h. Finishes
 - Stains
 - Bleaches
 - Lacquers
 - Waxes
 - Oils
 - Dyes
 - Shellacs

5. Describe and demonstrate the procedures for woodturning.

25%

- a. Select and use tools and equipment
 - Lathe parts and components
 - Copier/duplicator
 - Turning tools (gouge, skew and parting)

- b. Select stock
 - Species
 - Grain
 - Defects (knots, splits cracks)
- c. Remove excess material
- d. Mount stock onto lathe
 - Headstock
 - Tailstock
 - Live/dead center
- e. Turn and machine stock
- f. Verify measurements
- g. Prepare for finish

6. Describe and demonstrate the procedures to restore and refinish woodwork. 10%

- a. Select and use tools and equipment
- b. Determine restoration requirements
 - Finish
 - Parts
 - Hardware
- c. Select materials
- d. Lay out and produce joints
- e. Replicate parts
 - Woodwork disassembly and assembly
 - Modern and historic methods
- f. Strip old finishes
- g. Repair and disguise imperfections
- h. Maintain structural and visual integrity of pieces
- i. Apply adhesives
- j. Scrape, sand and prepare piece for finishing
- k. Replace, install and adjust hardware

7. Perform final sanding and finish woodwork. 35%

- a. Repair imperfections
 - Inspect (light method)
 - Scrape visible adhesive
 - Final block sand where required
- b. Stain components as per drawings
 - Toner/shader (species dependent)
 - Wiping stain as per drawings
- c. Topcoat
 - Spray application
 - Finish as per drawings

Cabinetmaker

Unit: D9 Pre-Interprovincial Exam Review

Level: Four

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

This unit offers senior apprentices a systematic review of skills and knowledge required to pass the InterProvincial Examination. It promotes a purposeful personal synthesis between on-the-job learning and the content of in-school technical training. The unit includes information about the significance of Interprovincial (Red Seal) certification and the features of the Interprovincial Examination.

Note: No percentage-weightings for test purposes are prescribed for this unit's objectives. Instead, a 'Pass/Fail' grade will be recorded for the unit in its entirety.

Objectives and Content:	Percent of <u>Unit Mark (%)</u>
<p>1. Describe the significance, format and general content of Inter-Provincial (IP) Examinations for the trade of Cabinetmaker.</p> <ul style="list-style-type: none"> a. Scope and aims of Interprovincial (Red Seal) certification; value of certifications b. Obligations of candidates for Interprovincial certification <ul style="list-style-type: none"> • Relevance of Interprovincial Examinations to current, accepted trade practices; industry-based provincial and national validation of test items • Supplemental Policy (retesting) • Confidentiality of examination content c. Multiple-choice format (four-option) item format, Red Seal standards for acceptable test items d. Government materials relevant to the Interprovincial Examinations for apprentice Cabinetmakers <ul style="list-style-type: none"> • Red Seal Occupational Standard (RSOS) – for Cabinetmaker; prescribed scope of the skills and knowledge which comprise the trade • RSOS “Pie-chart” and its relationship to content distribution of Interprovincial Examination items • Red Seal Examination Breakdown • Red Seal Self-Assessment Guide • Apprenticeship Manitoba Technical Training package 	n/a
<p>2. Identify resources, strategies and other considerations for maximizing successful completion of written examinations.</p> <ul style="list-style-type: none"> a. Personal preparedness <ul style="list-style-type: none"> • Rest • Nutrition • Personal study regimen 	n/a

- Prior experience in test situations (e.g., Unit Tests)
- b. Self-assessment, consultation and personal study plan
 - Self-assessment of individual strengths/weaknesses in trade related skills and knowledge
 - Approved textbooks
 - Study groups
3. **Review program content regarding the major work activity of performs common occupational skills.** n/a
 4. **Review program content regarding the major work activity of performs machining.** n/a
 5. **Review program content regarding the major work activity of performs forming and laminating.** n/a
 6. **Review program content regarding the major work activity of Installs veneers and laminates.** n/a
 7. **Review program content regarding the major work activity of performs shop assembly.** n/a
 8. **Review program content regarding the major work activity of performs finishing.** n/a
 9. **Review program content regarding the major work activity of performs on-site assembly and installation.** n/a
 10. **Review program content regarding the major work activity of performs specialized operations.** n/a
