Cabinetmaker
Level 1

Apprenticeship Manitoba

Cabinetmaker

Unit: A1 Orientation 1: Structure and Scope of Cabinetmaker

Level: One

Duration: 7 hours

Theory: 7 Hours

Practical: 0 Hours

Overview:

This unit profiles the trade's significance, core tasks, skill requirements, job-ladders and long-term career options. It includes information about learning styles/strategies, and their application to apprenticeship and journeyperson-level trade education. The unit also introduces the concept of skills stewardship, the obligation that apprentices have to help convey what their own journeypersons teach them to those who in turn following them into the trade.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe structure and scope of the cabinetmaker trade.	**25%**
a. Historical background and apprentice experience	
b. Structure and scope of the trade	
• International and national characteristics	
• Characteristics and practice of the trade in Manitoba	
• Trade organizations	
c. Opportunities and career ladders	
• Generalists and specialists	
• Lead hands and supervisors	
• Geographic mobility	
• Job hierarchies	
2. Describe the Manitoba cabinetmaker apprenticeship program.	**25%**
a. Significance of skills stewardship:	
• To the trade	
• To apprentices	
• To journeypersons	
• To employers	
• To the community	
b. Practical training (on-the-job), roles/responsibilities of:	
• Employers and journeypersons	
• Apprenticeship Training Coordinator (ATC)	
• Apprentices	
• Instructors	
c. Technical training	
d. Attendance requirements	
e. Progression requirements	
f. Reporting of grades	
g. Trade regulation	

h. Policies (e.g. personal conduct, missed units, fees)
   - Apprenticeship branch
   - Training provider

3. Describe challenges and opportunities in apprenticeship training. 25%

a. Adapting personal learning goals to program contexts
   - Types of adult learning
   - Learning and teaching styles
   - Work culture, interpersonal skills, and trade-learning
   - Integrating technical and practical training
   - Pros and cons of peer-learning
   - Personal arrangements
   - Handling stress at work and in school

b. On-the-job challenges and opportunities
   - Jobsite teaching styles and roles
   - Communicating with journeypersons and employers
   - Documentation of tasks and subtasks
   - Personal record of achievements and the trade learning journal
   - Getting help and fixing mistakes

c. In-school opportunities and challenges
   - Personal arrangements that support in-school progress
   - Self-assessment of impacts of previous school experience on current learning
   - Techniques for note-taking, record-keeping, and review
   - Relations with instructors
   - College resources
   - Policies on missed units, re-tests, make-up assignments

4. Accommodation for apprentices with disabilities. 25%

a. In-school technical training
   - Requirements
   - Roles and responsibilities
   - Services and information required by persons with disabilities

b. On-the-job
   - Requirements
   - Roles and responsibilities
   - Services and information required by persons with disabilities

Apprenticeship Manitoba

Cabinetmaker

Unit: A2 Trade Safety Awareness

Level: One

Duration: 7 hours

Theory: 7 Hours

Practical: 0 Hours

Overview:

Safety education is an integral part of your apprenticeship training program both in-school and on-the-job. In this unit apprentices will be made aware of general safety and health requirements as well as their own obligation to practice and promote trade safety in the workplace. **The final mark for this unit is a PASS when all requirements have been achieved.**

Objectives and Content:

1. **Identify safety and health requirements.**
   a. Overview of the *Workplace Safety and Health Act*
      - Rights and responsibilities of employees under the *Act*
      - Rights and responsibilities of employers under the *Act*
      - Rights and responsibilities of supervisors under the *Act*
   b. Fourteen (14) Regulations
   c. Codes of Practice
   d. Guidelines
   e. Right to refuse
      - Explanation of right to refuse process
      - Rights and responsibilities of employees
      - Rights and responsibilities of employers
      - Rights and responsibilities of supervisors

2. **Identify personal protective equipment (PPE) and procedures.**
   a. Employer and employee responsibilities as related to personal protective equipment
   b. Standards: CSA, ANSI and guidelines
   c. Protective clothing in the workplace
   d. Gloves – importance of proper glove selection (when handling chemicals, cold items, slivers etc.)
   e. Headwear – appropriate protective headwear when required and the approved type of head wear
   f. Eye protection – comparison and distinction of everyday eyeglasses, industrial safety glasses and safety goggles
   g. Foot protection – when required according to safety standards

h. Hearing protection
   - Hazards of noise levels (hearing protection must be worn)
   - Laws
   - Types of hearing protection

i. Respiratory protection – types, overview of proper selection

j. Fall protection – Manitoba requirements/standards/guidelines
   - ANSI (USA standards), etc.

k. Ladders and scaffolding

l. Safety principles for working with or around industrial trucks (site specific) (eg. forklifts, pallet trucks)

3. Identify regulations on care and cleanliness in the working area.

4. Identify the regulations on the safe use of chemicals.

5. Identify regulations on the use of scaffolding.

6. Identify regulations on the use of ladders and related equipment.

7. Identify ergonomics.

a. Definition of ergonomics and conditions that may affect the body
   - Working postures
   - Repetition
   - Force
   - Lifting
   - Tools and equipment
   - Safety equipment
   - Causes of hand tools accidents

8. Hazard recognition and control.

a. Safe work practices
b. Risk assessment
c. Injury prevention and control measures
d. Hazards involved in pneumatic tool use and how to prevent them
e. Refrigerants
f. Toxic chemicals
g. High pressure fluids
h. Industrial housekeeping
i. Employers' responsibility
j. Safe storage of materials
k. Safety measures for walkways, stairs and floor openings
l. How to protect workers and others when working in traffic paths

9. Hazard of confined space entry.

a. Identification of a confined space
b. Hazards of a confined space
   - Physical
   - Biological
c. Working in a confined space
d. Emergency response plan
e. Self contained breathing apparatus (SCBA)

10. Identify First Aid/CPR.

a. Overview of *First Aid Regulation*
b. Obligations of employers regarding first aid
   - Who is certified to provide first aid
   - What to do while waiting for help
   - Where is first aid kit stored
c. Describe basic first aid requirements and techniques
   - Scope and limits of First Aid intervention
   - Specific interventions (cuts, burns, abrasions, fractures, suffocation, shock, electrical shock, etc.)
   - Interface with other services and agencies (e.g. Works Compensation claims)
d. Describe basic CPR requirements and techniques
   - How to get certified
   - Scope and limits of CPR intervention (include varieties of CPR certification)

11. Identify Workplace Hazardous Material Information System (WHMIS) safety requirements.

a. WHMIS is a system
b. Provincial Regulation under the *Safety and Health Act*
   - Each province has a *WHMIS regulation*
c. *Federal Hazardous Products Act*
d. WHMIS generic training
   - WHMIS defined and the format used to convey information about hazardous materials in the workplace
   - Information found on supplier and workplace labeling using WHMIS
   - Hazardous materials in accordance with WHMIS
   - Compliance with government safety standards and regulations
e. Description of WHMIS (include varieties of WHMIS Certification)
   - WHMIS labels, symbols, and classifications
   - Scope and use of Materials Safety Data Sheets (MSDS)

12. Describe the safe storage of equipment in service vehicles.

13. Discuss transportation of dangerous goods.

Apprenticeship Manitoba

Cabinetmaker

Unit: A3 Tools and Equipment I

Level: One

Duration: 49 hours

Theory: 21 hours

Practical: 28 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of hand and power tools and equipment, their selection, safe use, and maintenance; and to operate, troubleshoot and maintain stationary machines in accordance with equipment manufacturers' recommendations, government regulations, and industry standards.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe the use, selection, and maintenance of tools and equipment.	**5%**
a. Development of modern trade technology, techniques, markets	
b. Identification and definition of categories in the trade's modern tool-set	
c. Considerations in the use of cabinetmaker tools and equipment	
d. Considerations in the selection of cabinetmaker tools and equipment	
e. Considerations in the maintenance of cabinetmaker tools and equipment	
2. Identify hand tools and describe their use, selection, and maintenance.	**10%**
a. Tools for measuring, marking, lay-out, and testing	
b. Edge tools	
c. Handsaws	
d. Tools for drilling and boring	
e. Tools for applying fasteners, adhesives, and hardware	
f. Tools for work with metals, plastics, and other non-wood materials	
g. Vises and clamps	
h. Common aids for hand-tool use and maintenance	
i. Tools for maintaining equipment	
3. Identify portable power tools and describe their use, selection, and maintenance.	**10%**
a. Saws and saw-blades	
b. Drills and drill-bits	
c. Routers	
d. Sanders	
e. Tools for work with non-wood materials such as metals and plastics	
f. Power-driving nails, staples, and threaded, corrugated fasteners	
g. Equipment for applying adhesives and finishes	
h. Angle grinder	
i. Powder-actuated tools	
j. Portable power planes	

k. Joinery tools

4. Identify stationary power tools and describe their use, selection and maintenance. 10%

a. Saws
b. Drilling and boring equipment
c. Equipment for dimensioning and shaping stock
d. Sanders and grinders

5. Describe electrical power supply considerations in maintaining and troubleshooting cabinet-shop tools and equipment. 5%

a. Hazards and precautions in the use of electricity in cabinet shop and on the jobsite
b. Importance of manufacturer standards and warnings
c. Inspection of cords and connections
d. Inspection of jobsite conditions
e. Requirements for proper grounding
f. Power ratings and their significance
g. Legal and regulatory requirements

6. Demonstrate the safe use, selection and maintenance of trade-related hand and power tools and equipment and stationary machines on a project assigned by the instructor. 60%

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Apprenticeship Manitoba

Cabinetmaker

Unit: B1 Trade Mathematics I

Level: One

Duration: 21 hours

Theory: 21 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of and ability to apply trade-related calculations in accordance with requirements of the specified trade-related tasks.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Review general math concepts and use of electronic calculator.	**50%**
a. Basic operations • Addition • Subtraction • Multiplication • Division • Order of operations • Fractions and decimals b. Ratio and proportion c. Percentage calculations d. Constructing and solving simple equations e. Trigonometry functions f. Units of measure • Imperial • Metric (SI) • Conversion factors • Board footage g. Calculator use • Basic operation keys and functions • Percentage keys and functions • Trig keys and functions • Keys and functions for memory and constants	
2. Perform trade-related calculations as specified by instructor.	**50%**
a. Linear measurement • Rectangular and triangular dimensions • Radius, diameter and circumference	

b. Area and volume
   - Squares and rectangles
   - Triangles
   - Circles and cylinders
   - Ovals and ellipses
   - Irregular shapes

c. Ratio and proportion
   - Ratios
   - Percentages
   - Rates
   - SI/Metric units

d. Geometry
   - Pythagorean Theorem
   - Angles
   - Bisectors
   - Normals
   - Arcs and tangents
   - Circles (radius and diameter)
   - Polygons

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Apprenticeship Manitoba

Cabinetmaker

Unit: C1 Design Principles and Technical Drawings

Level: One

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of the fundamentals and design features of trade-related drawings and layouts in accordance with requirements of the specified trade-related tasks.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe the uses and categories of technical drawing in the modern practice of cabinetmaking. a. Uses b. Types, techniques and terminology	**5%**
2. Describe the basic design principles and trade-accepted conventions in 'good design. a. Elements of design b. Design change c. Design continuity d. Design of case goods e. Design of furniture f. Design and composition of architectural moulding profiles	**5%**
3. Describe the use and selection of conventional drafting equipment and materials. a. Rules and straight edges b. Architect's scales c. Pencils and leads d. Erasers e. Set squares f. Protractors g. Tools for curved work h. Papers i. Specialty templates j. Standards	**20%**
4. Describe specified principles, conventions and techniques in joinery and casework construction and installation. a. Basic orthographic projection b. Basic oblique projection	**20%**

c. Basic isometric projection
d. Applied geometry
e. Line work and weight
f. Architectural symbols
g. Measurement and drawing scale
h. Lettering

5. Design and draw a cabinetmaking specialty according to instructor specifications. 40%

a. Interpretation of drawings and materials to identify and solve a problem
b. Use of scale and accepted conventions in line weight and lettering
c. Sequence
   - Freehand sketch
   - Shop drawing
   - Specified detail sketch
   - Finished drawing, including application of line-weights

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Apprenticeship Manitoba

Cabinetmaker

Unit: C2 Blueprint Reading I

Level: One

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge to produce and interpret trade-related blueprints, drawings and layouts in accordance with industry specifications and standards.

Objectives and Content: **Percent of Unit Mark (%)**

1. **Describe the taxonomy of blueprint use in casegoods and residential construction.** **10%**
   a. Divisions (ASMEM)

2. **Describe the uses and preparation of blueprints in casegoods and residential construction.** **25%**
   a. Detailed 'mapping' of site and site characteristics
   b. Visual representation of the construction or location of a built structure
   c. Specification of details
      - Shape
      - Size
      - Function
      - Materials used
      - Access
      - Assembly details
      - Standards for construction, installation (AWMAC, National Building Code standards)
   d. Aid in estimating and optimizing materials
   e. Aid in identifying and coordinating tasks among the trades
   f. Roles and responsibilities in preparing blueprints
      - Client
      - Specification writers
      - Designer
      - Architect
      - Mechanical engineers (electrical, HVAC, plumbing)
      - General contractor
      - Subtrades
   g. Sequence of blueprint preparation, distribution and use

3. Describe the use of casegoods and residential blueprints to derive specified information. **25%**

a. Use of blueprints to perform specified take-offs
b. Use of blueprints to identify production and coordination requirements

4. Produce millwork using casegoods and residential blueprints as assigned by the instructor. **40%**

a. Analysis of blueprints and specifications to identify and isolate all requisite information
b. Production of shop drawings

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Apprenticeship Manitoba

Cabinetmaker

Unit: C4 Computers in Cabinetmaking

Level: One

Duration: 35 hours

Theory: 15 hours

Practical: 20 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge to describe computer functions in accordance with the requirements of specified cabinet construction projects.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe basic computer components and programs and their functions. • Word processing • Email • Spreadsheets • Internet	**20%**
2. Describe areas of trade practice to which computer technology is being applied. a. Communications and general documentation b. Business records and project management c. Cost estimating, preparing tenders and cost control d. Optimized use of sheet-goods and other construction materials e. Architectural and survey drawings (Computer Aided Design (CAD) applications) f. Kitchen and bathroom design g. Customer relations	**20%**
3. Demonstrate the ability to work with computers in processing operations, sending and receiving email, producing spreadsheets, conducting internet searches and producing CAD drawings.	**60%**

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Apprenticeship Manitoba

Cabinetmaker

Unit: D1 Materials of Cabinetmaking

Level: One

Duration: 14 hours

Theory: 14 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of fundamental types and applications of lumber and wood materials in accordance with requirements of the specified trade-related tasks. The apprentice will also demonstrate knowledge to determine the moisture content of wood and the grading of lumber in accordance with the National Hardwood Lumber Association Standards and Canadian Softwood Guidelines.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe the materials of cabinetmaking and their preferred uses. a. Manufacture and use of wood and wood products b. Manufacture and use of non-wood products c. Correct storage and handling of raw materials	**20%**
2. Explain wood technology concepts in relation to cabinetmaking practice. a. Classification, properties and stewardship of wood species b. Practical recognition of commonly-used domestic and exotic species c. Cell structure and growth properties d. Grain and wood-fiber characteristics and their significance e. Requirements for storage and selection of wood and wood products f. Relevance of common flaws and defects in wood and wood products	**45%**
3. Explain the classification and dimensioning of wood and wood products. a. Solid stock b. Panel goods	**20%**
4. Explain the manufacture and use of plastic laminates (HPDL) and solid-surface materials. a. Variations and selection b. Requirements for storage and handling c. Special products and requirements	**15%**

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Apprenticeship Manitoba

Cabinetmaker

Unit: D2 Fasteners, Adhesives and Hardware

Level: One

Duration: 14 hours

Theory: 14 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge to recognize types of glues and abrasives, and the fundamentals, types and applications of cabinet construction fasteners and hardware in accordance with government safety regulations, industry standards and the requirements of the specified trade-related tasks.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify threaded and non-threaded fasteners and their preferred uses.	**30%**
a. Classification, properties and selection of fasteners	
b. Requirements for effective selection and use	
c. Basic techniques and tools for using fasteners	
d. Common errors in selection and use	
2. Identify adhesive products and their preferred uses.	**40%**
a. Classification, properties and selection of adhesive products	
b. Specialty adhesive products	
c. Chemical and mechanical considerations for effective use	
d. Basic techniques and tools for using adhesive products	
e. Common errors in selecting and using adhesive products	
3. Identify specified cabinetmaking hardware in its use and variation.	**30%**
a. Classification and selection of specified hardware	
b. Basic techniques and tools for specified hardware installation	
c. Common errors in installing cabinet hardware	

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Apprenticeship Manitoba

Cabinetmaker

Unit: E1 Joinery and Casework

Level: One

Duration: 77 hours

Theory: 21 hours

Practical: 56 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge to describe basic woodworking joints, their traditional variety and uses and how to choose particular joints for specific purposes in projects. They will also look at traditional and new joinery techniques and systems, and basic techniques and standards in machining and assembly of casework.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe considerations and choices in joinery and casework.	**5%**
a. Components and assembly points in joinery applications	
b. Analyzing forces that will act on a workpiece, assembly or its components	
c. Causes and sites of joint failure	
2. Describe traditional joinery applications, their rationale, and preferred techniques for layout and utilizing specific joints.	**5%**
a. Major joints, including variations and common uses	
3. Describe contemporary and other types of traditional joinery and casework.	**10%**
a. Major joints used in modern cabinetmaking	
b. Requirements for ensuring the structural integrity of casework	
c. Requirements for commercial casework (AWMAC)	
d. Impacts of production-cost considerations	
e. Impacts of technological change	
f. Impacts of design preference and fashion	
g. Impacts of local and regional traditions	
h. Face-frame and contemporary European cabinet construction	
4. Explain machining and assembly practices in basic casework.	**10%**
a. Materials list and layout	
b. Construction standards	
c. Solid stock preparation	
d. Sheet goods preparation	
e. Machining	
f. Sub-assembly	
g. Final assembly	

h. Special components and requirements

5. Complete a casework project as assigned by instructor. 70%

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Apprenticeship Manitoba

Cabinetmaker

Unit: F1 Packaging, Shipping and Installation

Level: One

Duration: 21 hours

Theory: 7 hours

Practical: 14 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge required to ensure that products go from shopfloor through installation in keeping with accepted trade standards of safety, cost effectiveness, and client satisfaction. The unit will include the phases, mechanics, and basic techniques involved in this process.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe packaging and shipping procedures.	**15%**
a. Examples of substandard techniques and consequences	
b. Importance of thorough, systematic planning	
c. Procedures and techniques in packaging	
d. Procedures and techniques in shipping and receiving	
2. Describe installation requirements and procedures.	**35%**
a. Preparation and use of a site-visit checklist	
b. Installation checklist for tools, equipment	
c. Installation checklist for materials	
d. Site preparation	
e. Layout	
f. Dealing with wall floor characteristics	
g. Basic operations for completing installation	
h. Inspection and final adjustments	
3. Demonstrate casework packaging, shipping and installation procedures.	**50%**

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