Cabinetmaker
Level 2

Cabinetmaker

Unit: A4 Tools and Equipment II

Level: Two
Duration: 21 hours
Theory: 14 hours
Practical: 7 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of maintaining and troubleshooting cabinetmaker tools and equipment.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Review considerations in troubleshooting tools and equipment. a. The scope of troubleshooting b. Safety, productivity and quality of work/life implications c. Legal and regulatory implications d. Common sites, symptoms, and consequences of bad practice in maintenance e. Costs/benefits of maintenance options f. Common resources and tools for maintenance and troubleshooting g. Ongoing development of inspection and troubleshooting skills	**15%**
2. Describe problem solving regarding troubleshooting strategies for the adjustment and maintenance of cabinetmaker tools and equipment. a. Barriers and aids to effective maintenance and troubleshooting b. Strategies for troubleshooting woodshop equipment	**15%**
3. Describe maintenance and troubleshooting requirements regarding portable equipment. a. Power saws b. Drills and power supply, bits and accessories c. Routers d. Sanders e. Tools for work with metals, plastics and other non-wood materials f. Equipment related to power-driving nails, staples, treated and corrugated fasteners g. Equipment related to applying adhesives and finishes h. Angle grinder i. Powder-actuated tools j. Portable power planes k. Biscuit jointer	**20%**
4. Describe maintenance and troubleshooting requirements related to stationary equipment.	**20%**

a. Saws
b. Drilling and boring equipment
c. Equipment for dimensioning and shaping stock
d. Sanders and grinders
e. Equipment related to applying adhesives and finishes

5. Demonstrate the ability to maintain and troubleshoot cabinetmaker tools and equipment. **30%**

***

Apprenticeship Manitoba

Cabinetmaker

Unit: B2 Trade Math II

Level: Two

Duration: 14 hours

Theory: 14 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge to solve math related problems which arise on the bench, shop-floor and installation jobsite, and to hone troubleshooting skills.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Review the application of math concepts to problem-solving and troubleshooting in the cabinetmaker trade. a. Practical strategies for problem-solving and troubleshooting b. Math concepts for analyzing and solving practical problems c. Examples of common math applications in troubleshooting trade problems	**10%**
2. Perform calculations for shop drawings. a. Numbers and quantities in technical drawing b. Materials take-off, bill of materials c. Development of cutting list d. Designing runs of upper and lower units for specified spaces	**15%**
3. Perform calculations for area measurement. a. Shop layout b. Panel goods c. Square footage	**15%**
4. Perform calculations for volume and capacity measurement. a. Quantities required to achieve mixtures of specified proportions and volumes b. Force and pressure c. Storage and shipping requirements d. Board foot measure	**15%**
5. Perform calculations for ratio and proportion. a. Pulley ratio and cutting speeds b. Rates of feed c. Electrical power ratings	**15%**

6. Perform calculations for cutting lists. **15%**

a. Solid stock
b. Panel goods
c. Estimating production time and associated costs

7. Perform calculations for curved work and bending. **15%**

a. Arcs
b. Ovals, ellipses
c. Cylinders

***

Apprenticeship Manitoba

Cabinetmaker

Unit: C3 Blueprint Reading II

Level: Two

Duration: 56 hours

Theory: 56 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge to determine requirements of commercial and institutional construction projects.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe blueprints for commercial and institutional construction. a. Design principles b. Divisions (ASME) c. Other categories • Sheet drawings • Specifications • Book (Table of Specifications) • Addenda • Contracts	**20%**
2. Describe the preparation and use of blueprints for commercial and institutional construction. a. Detailed mapping of site and site characteristics b. Visual representation of the construction and location of a built structure c. Specification of essential details d. Aid in estimating and optimizing materials e. Aid in identifying and coordinating tasks among the trades f. Roles and responsibilities in preparing blueprints g. Sequence of blueprint preparation, distribution and use	**20%**
3. Demonstrate the use of commercial and institutional blueprints to obtain specified information. a. Use of blueprints to perform specified take-offs b. Use of blueprints to identify production and coordination requirements	**30%**
4. Demonstrate production of a shop drawing using commercial and institutional blueprints as per instructor-provided specifications. a. Analysis of blueprints and specifications to identify and isolate all required information b. Production of shop drawings	**30%**

Apprenticeship Manitoba

Cabinetmaker

Unit: C5 Computer-Aided Design (CAD)

Level: Two

Duration: 42 hours

Theory: 42 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of CAD software to create drawings for cabinetmaking.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Review material required to introduce CAD technology and techniques. a. Design, drafting and dimensioning fundamentals b. Microcomputer technology use in the context of cabinetmaking c. Advantages of CAD	**10%**
2. Explain the features of the AutoCAD program. a. Introduction to the program's main features b. AutoCAD file management c. Drawing set-up d. Drawing e. Modify f. Plotting g. Dimensioning h. Text, fonts, styles i. Hatching	**30%**
3. Produce a CAD drawing as per instructor-provided specifications.	**50%**
4. Generate a cut-bill based on the CAD drawing.	**10%**

Apprenticeship Manitoba

Cabinetmaker

Unit: D3 Specialty Hardware

Level: Two

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge to identify, select and use specialty hardware for all types of special purpose cabinetry, fixtures, and millwork installation.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify and describe specialty hardware and its uses. a. Rationale for manufacture and use b. Requirements for effective selection and use	**25%**
2. Identify and describe specialty hardware in its variation and practical use. a. Classification and selection of specialty hardware b. Techniques and tools for installation	**25%**
3. Perform materials take-off for specialty hardware using provided specifications and sources.	**25%**
4. As per instructor specifications, perform lay-out and installation of specialty hardware, interpreting hardware requirements and explaining selection.	**25%**

***

Apprenticeship Manitoba

Cabinetmaker

Unit: D4 Wood Finishing I

Level: Two

Duration: 14 hours

Theory: 14 hours

Practical: 0 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of the materials, methods and equipment used in wood-finishing as they relate to cabinetmaking.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Explain the purposes of wood-finishing.	**10%**
a. Preservation and durability	
b. Aesthetic requirements	
2. Describe wood-finishing products and equipment.	**30%**
a. Shellacs and lacquers	
b. Varnishes	
c. Oils	
d. Wax finishes	
e. Synthetic finishes	
f. Solvents and thinners	
g. Strippers	
h. Abrasive products and their selection	
i. Characteristics of wood finishes	
j. Required equipment	
3. Explain special hazards and precautions in wood-finishing.	**20%**
a. Fire, fume and skin/eye contact hazards	
b. Personal protective equipment (PPE) requirements	
c. Ventilation requirements	
d. Disposal methods	
4. Describe conventional wood-finishing techniques and their application.	**25%**
a. Surface preparation	
b. Bleaching	
c. Sealing and wash-coating	
d. Staining	
e. Top-coating	

5. Describe the use of spray equipment in wood-finishing. 15%

a. Varieties and main components of spray equipment
b. Techniques

***

Apprenticeship Manitoba

Cabinetmaker

Unit: E2 Furniture-Building Traditions

Level: Two

Duration: 84 hours

Theory: 24 hours

Practical: 60 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of the historical and technical aspects of furniture-building in relation to modern cabinetmaker trade practice and includes information about furniture design/construction methods past and present.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Explain the scope and significance of furniture building traditions.	**10%**
a. Shaping of traditions and their importance to the trade	
b. Identification of furniture building styles and periods and their design characteristics	
2. Review the materials of furniture building and their uses.	**5%**
a. Hardwoods	
b. Softwoods	
c. Sheet goods	
3. Describe the components and specialties of furniture building.	**10%**
a. Tables	
b. Chairs	
c. Chests	
d. Desks	
e. Display cabinets	
f. Bookcases	
g. Armoires	
h. Highboys/lowboys	
i. Breakfronts, bow fronts	
j. Serpentine and bombe cabinet profiles	
4. Explain special techniques and applications in furniture building traditions.	**10%**
a. Curved and tapered work	
b. Bending solid stock	
c. Bending sheet goods	
d. Forming and carving furniture components	
e. Woodturning	
f. Fretwork	

g. Coopering
h. Inlay and veneer work
i. Gilding
j. Upholstery basics

5. Describe the adaptation of furniture building traditions to modern cabinetmaking practice. **5%**

a. Repair and restoration of antiques
b. Reproduction furniture-building
c. Techniques for duplicating classic furniture designs

6. Construct a table in a traditional furniture style as per the instructor's specifications, demonstrating proper techniques in selecting and using the required tools, equipment and materials. **60%**

***

Apprenticeship Manitoba

Cabinetmaker

Unit: F2 Architectural Millwork I

Level: Two

Duration: 70 hours

Theory: 35 hours

Practical: 35 hours

Overview:

Upon completion of this unit the apprentice will demonstrate knowledge of millwork products such as decorative mouldings and casings, doors and windows, staircase components, fireplace mantles, and built-in fixtures. The unit also covers moulding profiles and woodwork restoration and repair, as well as door and window assemblies and glass and glass components of millwork.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe woodwork and millwork products and interior trim.	**20%**
a. Review of design principles and conventions	
b. Function of millwork and interior trim	
c. Main categories of millwork and trim	
d. Sequence of operations	
e. Considerations regarding blueprints, technical specifications and AWMAC standards	
f. Considerations regarding jobsite characteristics and storage and installation requirements	
2. Describe the selection, use and restoration of architectural mouldings and millwork products.	**15%**
a. Terminology, profiles and components	
b. Basic installation and joinery techniques	
c. Selection and application of products for finishing and preserving trimwork	
d. Estimating project costs and requirements	
e. Requirements for restoration and repair of architectural woodwork/millwork	
3. Describe cabinetmaker trade requirements for work with doors and windows.	**10%**
a. Traditional and contemporary windows and window frames	
b. Traditional and contemporary doors and door frames	
c. Dimensions and calculations for windows and doors	
d. Sources and methods for developing specialized skills for windows, doors and hardware	
e. Considerations regarding blueprints, technical specifications and AWMAC standards	
f. Basic installation and joinery techniques	

4. Describe requirements for handling and installing glass and aluminum components. **5%**

a. Common applications of glass and aluminum components and specialties
b. Types and characteristics
c. Basic techniques

5. Construct an interior architectural millwork component as per the instructor's specifications, demonstrating proper techniques in selecting and using the required tools, equipment, and materials. **50%**

***