Lather (Interior Systems Mechanic)
Level 1

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A1 Learning About Work

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

A sign that an apprentice has become competent in a task or technique is to be asked to share this knowledge. Worksite skills-exchange has long been fundamental to trade-learning. Even trade veterans rely on peers to refine their knowledge and skill. The opportunity to benefit from this process, however, is shaped by complex factors that include worksite 'politics' and job deadlines. As adult trade-learners, apprentices at all levels of training must use their observational, listening and interpersonal skills to benefit from the Journeyperson's knowledge and experience. This requires understanding the trade's dynamics, as well as the roles and responsibilities which determine work-life.

This unit profiles the trade's structure and scope as determined by The Apprenticeship and Certification Act, Apprenticeship and Certification Board, Sector Committees, and Industry Working Groups using the occupational standards from which the technical training is derived. This unit also includes short- and long-term career progression and social competencies. This includes information about major areas of working knowledge, activities and interactions at work, and expansive and restrictive workplaces, stressing their application to apprenticeship on-the-job training.

A sound grasp of the roles, workplace relationships, and possibilities introduced in this unit are part of 'learning to learn' in Manitoba's apprenticeship system. Senior apprentices are later offered information about the transfer of knowledge and skills in this system. Please refer to unit ***C9 Journeyperson Trainer***, which explores the central and time-honoured foundation of trades journeywork.

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 Unit Mark (%)**
1. Describe the structure and scope of the Lather (Interior Systems Mechanic) trade.	**n/a**

a. The Apprenticeship and Certification Act
- Apprenticeship and Certification Board
- Sector Committees and Industry Working Groups (IWG)
- General regulation, and specific trade regulations/by-laws
- Policies regarding attendance, evaluation procedures, conduct and progression requirements (Apprenticeship Manitoba, training provider)

b. Uses of the Red Seal Occupational Standard (RSOS)
- Apprenticeship Manitoba technical training standards
- On-the-job report of hours
- Examinations (unit tests, final certification examinations)

c. Opportunities and future career options
   - Generalists and specialists. The move toward specialization is well known to modern tradespeople. Some prefer to specialize and others want to do it all. Supervisory positions require a broad scope.
   - Lead hands and other immediate supervisors. Apprentices need to know how to become a lead-hand as much as they need to know the benefits and pit-falls of leadership between management, journeypersons, tradespersons, and other workers.
   - Geographic mobility. What does it mean to a tradesperson to have to travel to find work? Are there more opportunities if they do? What are they? What are the drawbacks to being away from home for several weeks at a time?
   - Job hierarchies and innovations. What trade specific special training opportunities are available in the trade? Is there travel involved? How do these opportunities affect work assignments and career progression?

2. Describe two levels of workplace competency. **n/a**

a. Job competencies related to workplace culture
   - Knowledge of workplace equipment and materials
   - Skills and techniques

b. Social competencies related to workplace culture
   - Language of work
   - Workplace belief systems
   - Rules and meanings
   - Equity, diversity, and inclusion in the workplace

3. Describe accommodation for apprentices with accessibility requirements. **n/a**

a. Awareness of the *Accessibility for Manitobans Act*
   - Customer service accessibility standard
   - Employment accessibility standard
   - Information and communications accessibility standard
   - Built environment
   - Transportation

b. Technical training
   - Requirements
   - Roles and responsibilities
   - Services and information required by persons with accessibility requirements

c. On-the-job
   - Requirements
   - Roles and responsibilities
   - Services and information required by persons with accessibility requirements

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Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A2 Trade Safety Awareness

Level: One

Duration: 28 hours

Theory: 28 hours

Practical: 0 hours

Overview:

Safe working conditions, injury prevention, and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers, supervisors, and workers. It is imperative to be familiar and apply the Manitoba Workplace Safety and Health Act and Regulations. Safety education is an integral part of apprenticeship training both in school and on-the-job. This unit is an overview of occupational safety and health best practices in Manitoba and covers Personal Protective Equipment, the Workplace Hazardous Materials Information System, and Safe Work Procedures. The unit also describes injury prevention and response. Finally, the unit reinforces these best practices by navigating the SAFE Work Manitoba website through each objective to apply Manitoba's most current safety and health standards. Additional trade safety awareness related resources are located on the Apprenticeship Manitoba website link below. Trade specific hazards and safe work practices are supplemented and delivered in-context within technical training units.

- **SAFE Work Manitoba website:** https://www.safemanitoba.com/
- **Safety resources:** http://www.gov.mb.ca/wd/apprenticeship/generalinfo/instructoreducators.html

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 Unit Mark (%)**
1. Define and describe Manitoba safety and health requirements.	**n/a**

a. Overview of the *Workplace Safety and Health Act and Regulations*
   - Rights and responsibilities of workers under the *Act*
   - Rights and responsibilities of supervisors under the *Act*
   - Rights and responsibilities of employers under the *Act*

b. Public agencies
   - Workplace Safety and Health (Enforcement)
   - SAFE Work Manitoba (Prevention)
   - Other

c. Codes of practice, guidelines, policies and standards (differences)

d. Worker rights
   - Right to know, participate, refuse
   - Protection from reprisal

e. Workplace safety and health program (worker's involvement)
   - Workplace safety and health committee
   - Participation in investigation and inspection process

2. Identify and describe personal protective equipment (PPE) requirements and standards in the workplace. **n/a**

a. Employer, supervisor and worker responsibilities
b. Hierarchy of control measures
c. Personal protective equipment (PPE)
    - Eye and face protection
    - Hearing protection
    - Foot, head, hand, and skin protection
    - Respiratory protection
    - Protective clothing (including Hi-Visibility/Hi-Vis)
    - Fall protection (trade specific)

3. Identify and describe the Workplace Hazardous Material Information System (WHMIS) and procedures. **n/a**

a. Hazard identification
b. Product labels, symbols and classification
    - Supplier
    - Workplace
c. Safety Data Sheets (SDS)
d. Chemical and biological hazards
    - Emergency washing
    - Transportation of dangerous goods
    - Storage and handling

4. Identify and describe Safe Work Procedures (SWP). **n/a**

a. Hazard identification
b. Uncontrolled risk
c. SWP development

5. Identify and describe injury prevention.

a. Hazard recognition, evaluation, and control (SAFE acronym)
b. Occupational disease and illness
c. Musculoskeletal
    - Ergonomics
d. Psychological health and safety
    - Harassment and violence
    - Working alone
e. Young workers
f. Physical hazards
g. Chemical and biological hazards, and exposures
    - Dust and fibres
    - Fumes, aerosols, gases and vapours
h. Confined space entry
i. Electrical safety
    - Lockout/tagout procedures
j. Fire types, fire extinguisher classifications and applications

6. Identify and describe injury response. **n/a**

a. Control the scene
b. Incident investigation
    - Near miss
    - Incident
    - Serious incident

c. Corrective actions
d. Follow-up
e. Reporting an injury (Workers Compensation Board (WCB) of Manitoba)

7. Demonstrate navigation and retrieval of key content areas from SAFE Work Manitoba's website and apply resources directly to unit objectives. **n/a**

a. Legislation
b. Bulletins
c. Templates
d. Shop Talk
e. Other resources

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Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A3 Tools and Equipment

Level: One

Duration: 35 hours

Theory: 21 hours

Practical: 14 hours

Overview:

This unit is designed to provide the apprentice with knowledge and skills about tools and equipment in the trade. The unit begins with coverage of hand tools, power tools and equipment, powder-actuated tools, and gas-actuated tools. Part of the unit covers layout and measuring devices. Finally, the unit covers scaffolding and access equipment.

Objectives and Content:	Percent of Unit Mark (%)
1. Describe and perform use of hand tools.	**20%**
a. Types	
b. Applications, limitations and maintenance	
c. Procedures for use	
d. Hazards and safe work practices	
2. Describe and perform use of power tools and equipment.	**30%**
a. Types	
b. Battery-actuated fasteners	
c. Applications, limitations and maintenance	
d. Procedures for use	
e. Hazards and safe work practices	
3. Describe and perform use of powder-actuated tools.	**15%**
a. Types	
b. Applications, limitations and maintenance	
c. Procedures for use	
d. Hazards and safe work practices	
e. Types of pins and shots	
• Disposal of shots	
f. Certification requirements	
4. Describe and perform use of gas-actuated tools.	**5%**
a. Types	
b. Applications, limitations and maintenance	
c. Procedures for use	
d. Hazards and safe work practices	

e. Gas cylinders
   - Regulatory requirements for use
   - Regulatory requirements for disposal

5. Describe and perform use of layout and measuring devices. 10%

a. Types
b. Applications, limitations and maintenance
c. Procedures for use
d. Hazards and safe work practices

6. Describe and perform use of scaffolding and access equipment. 20%

a. Types
b. Applications, limitations and maintenance
c. Procedures for use
d. Hazards and safe work practices
e. Fall protection requirements
f. Safe angles of ladders
g. Three-point contact rule
h. Importance of being aware of worksite surroundings
i. Regulations and certification requirements

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Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A4 Blueprints and Specifications I

Level: One

Duration: 35 hours

Theory: 21 hours

Practical: 14 hours

Overview:

This unit is designed to provide the apprentice with introductory knowledge and skills about blueprints and specifications. The unit begins with coverage of terms used in drawings, and blueprint sections and types. Part of the unit covers basic orthographic and isometric projections. Finally, the unit covers residential and commercial plans.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe terms used in drawings. a. Lines • Object • Extension • Grid • Hidden b. Views • Plan • Elevation • Section • Detail c. Reference numbers d. Symbols	**25%**
2. Describe blueprint sections and types. a. Architectural b. Mechanical c. Electrical d. Structural	**25%**
3. Draw basic orthographic and isometric projections.	**25%**
4. Read residential and commercial plans. a. Plan reading b. Specification divisions c. Elevation views	**25%**

d. Section views
e. Relevant items on plans

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Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A5 Trade Related Mathematics I

Level: One

Duration: 35 hours

Theory: 21 hours

Practical: 14 hours

Overview:

This unit is designed to provide the apprentice with introductory knowledge and skills about trade related math. The unit begins with coverage of basic math operations. Part of the unit covers trade related problems. Finally, the unit covers metric and imperial measurements.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe and calculate basic mathematical operations.	**40%**
a. Basic operations • Addition • Subtraction • Multiplication • Division b. Common and decimal fractions c. Linear measures, area and volume d. Percentages e. Diameter and radius	
2. Describe and calculate trade related problems.	**30%**
a. Linear measurements • Regular outline • Irregular outline b. Number of components • Studs and tracks • Channels • Fasteners • Bracings • Gypsum sheets c. Area • Walls • Ceilings d. Material selection to reduce waste e. Squaring by 3-4-5 system	

3. Describe and calculate units of measurement. **30%**

a. Imperial
b. Metric
c. Conversion

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Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A6 Worksite Preparation

Level: One
Duration: 35 hours
Theory: 21 hours
Practical: 14 hours

Overview:

This unit is designed to provide the apprentice with knowledge and skills about worksite preparation and routine trade activities. The unit begins with coverage of documentation and reference materials, planning project tasks, estimating materials and supplies, and performing measurements. Part of the unit covers jigs and templates, and handling of materials, supplies and products. Finally, the unit covers laying out work, and the application of sealants and gaskets.

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

1. Describe use of documentation and reference materials. **15%**

a. Types of work-related documentation and their applications
- Records
- Time sheets
- Deficiency lists
- Schedules

b. Types of safety-related documentation and their applications
- Accident reports
- Hazard assessments
- Stop work orders
- Warning signs

c. Types of reference materials and their applications
- Change orders
- Manuals
- Manufacturer's specifications
- Meeting minutes
- National Building Code

d. Procedures used to complete documentation
e. Responsibilities associated with completing and signing documentation
f. Codes, standards, rules and regulations
- Site-specific requirements
- OH&S

2. Describe planning of project tasks. **15%**

a. Project tasks
- Utility requirements
- Safety requirements

- Preparation
- Installation
- Completion
- Work sequence

b. Factors affecting scheduling of work
- Site
- Weather and environmental conditions
- Work of other trades
- Material properties
- Public safety
- Accessibility to work area for conveyance of materials and equipment
- Pre-construction meetings

c. Regionally-specific building requirements
- Seismic restraints
- Exterior wind-load
- Jurisdictional fire codes
- Acoustic codes

d. Sequence of operation and timing of procedures

3. Describe and perform estimation of materials and supplies. **10%**

a. Procedures used to interpret plans and specifications
b. Calculating area and linear measurements
c. Calculating material coverage
- Walls (interior and exterior)
- Ceilings
- Roofs
- Floors
- Columns
- Beams

d. Conversion
- Metric
- Imperial

4. Perform measurements. **10%**

a. Mathematical principles used to verify measurements and dimensions
b. Identifying formulas to calculate
- Area
- Radii
- Surface area

c. Roof calculations

5. Describe and perform use of jigs and templates. **20%**

a. Types of jigs and their characteristics
- Multi-use
- Single-use

b. Types of templates and their characteristics
- Manufactured
- Job-built

c. Applications
- Building bulkheads
- Building prefabricated wall panels

d. Building procedures

e. Building materials
   - Wood
   - Plywood
   - Drywall
   - Steel studs
   - Tracks

6. Describe and perform handling of materials, supplies and products. 15%

a. Loading and unloading procedures
b. Types of material handling equipment
c. Storage
   - Procedure
   - Sequence

7. Describe and perform laying out work. 5%

a. Types of layout devices, their applications and procedures for use
b. Procedures used to lay out work
c. Installation sequence
d. Work requirements of other trades
e. Mathematical principles
   - 3-4-5 triangle (Pythagorean theorem)
   - Radii
   - Angles

8. Describe and perform application of sealants and gaskets. 10%

a. Types of sealants and their characteristics
   - Acoustical
   - Fireproof
   - Thermal
   - Silicone
   - Latex caulking
b. Types of gaskets and their characteristics
   - Neoprene
   - Foam
c. Applications
   - Prevention of reaction of dissimilar metals
   - Reduction of sound transmission
   - Prevention of drafts
   - Fire rating
d. Tools and equipment
e. Application procedures

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Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A7 Non Load-Bearing Steel Assemblies I

Level: One

Duration: 77 hours

Theory: 28 hours

Practical: 49 hours

Overview:

This unit is designed to provide the apprentice with introductory knowledge and skills about non load-bearing steel assemblies. The unit begins with coverage of non load-bearing walls. Part of the unit covers spanned ceilings and suspended drywall ceilings. Finally, the unit covers non load-bearing bulkheads, metal door frames and window frames.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe framing of non load-bearing walls. a. Types of non load-bearing wall components, their characteristics and applications • Studs • Tracks • Channels b. Tools and equipment c. Framing procedures d. Types of fasteners e. Clearance requirement for deflection and expansion f. Types of substrates and their properties	**10%**
2. Perform framing of non load-bearing walls.	**15%**
3. Describe framing of spanned ceilings. a. Types of spanned ceilings, their characteristics and applications b. Components of spanned ceilings, their characteristics and applications • Gauges • Mils c. Determining elevation heights d. Tools and equipment e. Framing procedures f. Types of fasteners g. Span tables	**10%**
4. Describe framing of suspended drywall ceilings. a. Types of suspended drywall ceilings, their characteristics and applications b. Types of suspended drywall ceiling components, their characteristics and applications	**10%**

- Tracks
- Angles
- Carrying channels
- Furring channels

c. Determining elevation heights
d. Framing tools and equipment
e. Framing procedures
f. Types of fasteners
g. Structural requirements

5. Perform framing of suspended drywall ceilings. 15%

6. Describe framing of non load-bearing bulkheads. 10%

a. Types of non load-bearing bulkheads and their characteristics
b. Applications
   - Cosmetic
   - Concealing electrical and mechanical devices
   - Smoke barrier
   - Defining room transitions
c. Architectural features
   - Valences
   - Curves
   - Light coves
d. Types of non load-bearing bulkhead components, their characteristics, applications and architectural features
   - Studs
   - Tracks
e. Determining elevation heights
f. Tools and equipment
g. Framing procedures
h. Types of fasteners

7. Perform framing of non load-bearing bulkheads. 15%

8. Describe installation of metal door and window frames. 5%

a. Types of metal door frames, their characteristics and applications
   - Welded
   - Knock-down
b. Types of metal window frames, their characteristics and applications
c. Tools and equipment
d. Installation procedures
e. Types of fasteners
f. Types of possible defects during installation
   - Deformed frames
   - Inconsistent spreaders

g Metal door frame swing
h. Throat sizes
i. Types of wall finishes

9. Perform installation of metal door and window frames. 10%

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Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A8 Wall Systems and Components I

Level: One
Duration: 28 hours
Theory: 21 hours
Practical: 7 hours

Overview:

This unit is designed to provide the apprentice with introductory knowledge and skills about wall systems, their components and thermal insulation. The unit begins with coverage of installation of drywall. Part of the unit covers installation of access panels. Finally, the unit covers installation of thermal insulation.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe installation of drywall.	**25%**
a. Types of drywall, their characteristics and applications • Fire-rated • Regular • Moisture-resistant b. Common thicknesses, widths and lengths of drywall c. Tools and equipment d. Installation procedures e. Fasteners f. Finished ceiling heights g. Multi-layer requirements h. Drywall sheets • Sequence of installation i. Installation problems and corrective measures	
2. Perform installation of drywall.	**30%**
3. Describe installation of access panels.	**15%**
a. Types of access panels, their characteristics and applications • Fire-rated • Non fire-rated b. Types of access panel components, their characteristics and applications • Hinges • Springs • Latches c. Types of panel materials • Plastic • Drywall • Metal	

- Glass-reinforced gypsum (GRG)

d. Requirements for fire-rated access panels
e. Tools and equipment
f. Installation procedures

4. Describe installation of thermal insulation. 30%

a. Types of thermal insulation, their characteristics and applications
   - Fibreglass
   - Mineral fibre
   - Rigid
   - Semi-rigid
   - Batts
   - Spray foam
   - Blow-in

b. Principles
   - Preventing heat loss
   - Conduction
   - Convection
   - Radiation

c. Insulating values
d. Tools and equipment
e. Installation procedures
f. Methods used to place and attach insulation
g. Types of sealants
   - Thermal sealant
   - Expandable foam
   - Sheathing tape
   - Foil tape

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