Lather (Interior Systems Mechanic)
Level 1

Rev. May 2014

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A1 Orientation I: Structure and Scope of Trade

Level: One

Duration: 10 hours

Theory: 10 hours

Practical: 0 hours

Overview:

This unit is designed to provide the apprentice with an overview of the Lather (Interior Systems Mechanic) trade and the construction industry. Each apprentice will be able to identify sources of information related to various job and career opportunities. The apprentice should understand project organization and the roles and responsibilities of all people involved. The importance of the National Building Code and the Manitoba Building Code as well as the function of the Canadian Standards Association and the Underwriters Laboratories of Canada will also be examined.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Examine the importance of the Lather (Interior Systems Mechanic) industry. a. National occupational analysis • Scope • Observations and Trends • Tasks and Sub-tasks • Block percentages	**5%**
2. Examine the scope of the Lather (Interior Systems Mechanic) industry. a. National occupational analysis • Scope • Observations and Trends • Tasks and Sub-tasks • Block percentages	**5%**
3. Read and interpret the Manitoba regulation for the trade and Lather (Interior Systems Mechanic).	**5%**
4. Describe the construction industry.	**5%**
5. Examine the job and career opportunities.	**5%**
6. Explain project organization and the roles and responsibilities of the following: a. Owner b. Architect c. Engineer d. General Contractor e. Sub-Trades	**15%**

f. Interior Systems Mechanic

7. Explain the scope of the Lather (Interior Systems Mechanic) Industry. 15%

8. Discuss requirements of Lather (Interior Systems Mechanic). 5%

a. Professionalism
b. Attitude
c. Work ethic
d. Teamwork
e. Eagerness to learn
f. Dedication to quality

9. Interpret the Nation Building Code and the Manitoba Building Code. 15%

10. Explain the function of Canadian Standards Association and the Underwriters Laboratories of Canada. 15%

11. Discuss the municipal by-laws, zoning permits etc. 5%

12. Examine procedures, application forms, calculations, etc. within the Acts that affect trades people in Manitoba. 5%

a. Income tax
b. Workers' Compensation
c. Employment Standards
d. Employment Insurance

****

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A2 Trade Safety Awareness

Level: One

Duration: 21 hours

Theory: 21 hours

Practical: 0 hours

Overview:

Safe working procedures and 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, and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to incidents or injury. It is generally recognized that safety-conscious attitudes and work practices contribute to a healthy, safe, and accident-free working environment. It is imperative to apply and be familiar with the Workplace Safety and Health Act and Regulations. As well, it's essential to determine workplace hazards and take measures to protect oneself, co-workers, the public, and the environment. Safety education is an integral part of Insulator apprenticeship training both in school and on-the-job. Unit content is supplemented throughout technical training by trade-specific information about Insulator safety hazards and precautions presented in the appropriate contexts of discussion and study. ***Note: No percentage-weightings for test purposes are prescribed for this unit's objectives. A "Pass/Fail" grade will be recorded for the unit. A Pass mark is assumed to be 70%. Therefore 70% is the mark to be submitted to the Apprenticeship Branch clerks for inputting into computer records.***

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify safety and health requirements.	n/a
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 under the Act	
2. Identify personal protective equipment (PPE) and procedures.	n/a
a. Employer and employee responsibilities as related to personal protective equipment. b. Standards: ANSI (U.S.A. standards), etc.	

c. Work protective clothing and danger if it fits poorly.
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 headwear.
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 various 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 (U.S.A. standards), etc.
k. Ladders and scaffolding
l. Safety principles for working with or around industrial trucks site-specific (forklifts, pallet trucks, etc.)

3. Identify regulations pertinent to care and cleanliness in the working area. n/a

4. Identify the regulations relevant to the safe use of chemicals. n/a

5. Identify regulations governing the use of scaffolding. n/a

6. Identify regulations governing the use of ladders and related equipment. n/a

7. Identify ergonomics. n/a

a. Definition of ergonomics and conditions that may affect the body
   - Working postures
   - Repetition
   - Force
   - Lifting
   - Tools
   - Identify tool and safety equipment
   - Causes of hand tool accidents
   - Equipment

8. Hazard recognition and control. n/a

a. Safe work practices
b. Basic risk assessment
c. Injury prevention and control measures
d. Identification of hazards involved in pneumatic tool use and explanation of how to guard against them
e. Refrigerants
f. Toxic chemical (non-refrigerant)
g. High pressure fluids

9. Hazard of confined space entry. n/a

a. Identification of a confined space
b. Hazards of a confined space (including physical and biological hazards)
c. Working in a confined space
d. Emergency response plan

e. Self-contained breathing apparatus (SCBA)

10. Identify first aid/CPR. n/a

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?
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.)
   - What is it?
   - Interface with other services and agencies (e.g., Workers Compensation claims)
d. Describe basic CPR requirements and techniques
   - How do you get certified?
   - Scope and limits of CPR intervention (include varieties of CPR certification)

11. Identify the safety requirements as they apply to WHMIS with emphasis on: n/a

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)
   - Typology of WHMIS labels, symbols, and classifications
   - Scope and use of Materials Safety Data Sheets (MSDS)

12. Identifying and controlling hazards. n/a

a. Basic control measures (injury prevention)
b. Safe work procedures
c. Explanation on the importance of industrial housekeeping
d. Employer responsibilities
e. How and where to store materials
f. Safety measures related to walkways, stairs and floor openings
g. Explanation of how to protect the worker and others when working in traffic paths

13. Describe the safe storage of stock equipment in service vehicles. n/a

14. Discuss transportation of dangerous goods. n/a

15. Describe Asbestos Safety and Health Requirements. n/a

a. Describe what asbestos is, and why it has been used so much.
b. Describe the potential health hazards associated with asbestos.
c. Identify typical products and materials that contain asbestos.
d. Describe proper precautions and work practices when working around asbestos.
e. Describe how to recognize asbestos hazards due to damage or deterioration.
f. Describe appropriate response to an asbestos fiber release.
g. Describe what Workplace Safety and Health regulations, guideline and bulletins

apply to workers who work with or work around asbestos and what aspects of those regulations, guidelines and bulletins affect you or your company.

***

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A3 Power Tools/ Hand Tools, Equipment, and Materials

Level: One

Duration: 20 hours

Theory: 7 hours

Practical: 13 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to use power tools, hand tools, equipment and materials that are used by the Lather (Interior Systems Mechanic).

Objectives and Content:	**Percent of Unit Mark (%)**
1. Discuss power tools and hand tools. a. Types and working parts b. Safety c. Care and maintenance d. Job applications e. Manufacturers' manuals f. Components	**21%**
2. Discuss scaffolding and access equipment. a. Types • Scaffolds • Walking stilts • Ladders • Scissor-lifts and booms b. Safety c. Job applications d. Components e. Operation f. Care and maintenance g. Manufacturer's manuals	**21%**
3. Describe laser-leveling equipment. a. Types b. Features c. Job applications d. Components e. Safety f. Care and maintenance	**7%**
4. Describe and specify the common types of materials. a. Metal types and gauges	**7%**

b. Gypsum
   - Composition
   - Manufacturers

c. Set-up of gypsum and other adhesives
   - Temperature
   - Time

d. Fasteners

5. Discuss handling and storing materials on site. 7%

a. Causes for breakage and damage
b. Discarding or saving materials
c. Housekeeping practices
d. Securing material packages
e. Rigging
f. Point loading

6. Demonstrate the use of tools for job situations. 9%

a. Measuring tools
b. Layout tools
c. Gypsum cutting tools
d. Metal cutting tools
e. Crimping and riveting tools
f. Spirit and hydra leveling tools
g. Boring tools
h. Bending and tying tools
i. Impact tools
j. Screw driving tools
k. Sharpening tools
l. Power extension cords and polarity plugs
m. Caulking tools
n. Laser instruments

7. Erect and dismantle scaffolding used in industry. 9%

8. Discuss powder actuated tools 7%

a. Types
   - High velocity tools
   - Low velocity tools

b. Safety features
   - Fasteners
   - Charges
   - Safety codes and regulations

c. Uses and applications
   - Fastening surfaces

d. Operator’s responsibility
e. Pins, charges, and materials
f. Care, maintenance, and operation
g. Servicing and storage
   - Disposal of misfired charges

9. Demonstrate operation and actual firing of powder actuated tools. 12%

a. Pre-firing routine

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: A4 Work-Site Preparation

Level: One

Duration: 32 hours

Theory: 7 hours

Practical: 25 hours

Overview:

This unit is designed to provide the apprentice with the skills and knowledge of preparing the work site. Organizing materials and supplies, coordinating the work with others and establishing the grid/line starting point are some of the topics covered in this unit.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe light demolition techniques and waste removal.	**7%**
2. Discuss work impacts on surrounding areas.	**10.5%**
3. Discuss dust barriers, hoarding and guard-rail requirements.	**10.5%**
4. Determine site readiness. a. Pre-clean work site b. Obstruction removal	**7%**
5. Calculate required materials and supplies. a. Estimating b. Storage on site c. Sequence of use of materials and supplies d. Placement e. Protection and security f. Housekeeping practices	**12%**
6. Determine work required and the sequence of work. a. Estimating time for tasks b. Planning c. Requirements of other trades d. Communication and co-operation	**10.5%**
7. Describe and practice grid line/starting point. a. Building configuration b. Layout procedures c. Starting point d. Mark or chalk gridlines	**19%**

8. Describe typical procedures in renovating and building additions. 10.5%

a. Safety considerations
b. Abatement of asbestos
c. Existing services, cautions and disconnections
d. Protection of existing floor, cabinets, etc.
e. Removal of old material and housekeeping
f. Layout and connection to existing walls
g. Temporary shores, bracing, hoarding, etc.

9. Discuss other trades and job procedure in stages. 7%

10. Complete documents and forms. 6%

a. Delivery slips
b. Time sheets
c. Expense accounts
d. Business letters
e. Injury reports
f. Purchase orders, etc.

***

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: B1 Blueprint Reading and Specifications 1

Level: One

Duration: 33 hours

Theory: 14 hours

Practical: 19 hours

Overview:

This unit is designed to provide the apprentice with the knowledge of blueprint reading and specifications. Topics will include: blueprint sections and types, drawing terms, freehand sketching, orthographic and isometric drawings, plan and elevation views and residential and light commercial plans.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Analyze blueprint sections and types. a. Architectural b. Mechanical/Electrical c. Structural	**15%**
2. Define terms used in drawings. a. Object b. Extension c. Grid lines d. Elevations and details	**15%**
3. Practice freehand sketching using drawing instruments.	**10%**
4. Describe basic orthographic and isometric drawings. a. Lines b. Numbers c. Trade symbols d. Basic drawings	**15%**
5. Practice making basic orthographic and isometric drawings.	**15%**
6. Describe plan and elevation views.	**15%**
7. Review residential and light commercial plans. a. Plan reading b. Specification divisions c. Elevation d. Section views e. Interior system mechanic items on plans	**15%**

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: C1 Trade Mathematics 1

Level: One

Duration: 35 hours

Theory: 30 hours

Practical: 5 hours

Overview:

This unit is designed to provide the apprentice with the knowledge required to perform construction-related mathematical operations.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Practice calculating trade related problems.	**40%**
a. Addition, multiplication, division and subtraction b. Common and decimal fractions c. Linear, area and volume measurements d. Percentages e. Radius	
2. Calculate trade related problems from basic plans and specifications.	**40%**
a. Linear footage of perimeters, partition layouts etc. in regular and irregular outlines b. Studs, channels, fasteners, bracing, rough openings etc. in wall layouts of various types of spacing c. Areas of rectangular, square and triangular shapes d. Numbers of gypsum sheets, bundles of gypsum and metal lath, etc. from various areas e. Pounds, lots and areas of fasteners f. Extra cutting and waste through poor or improper selection of materials on site g. Convert stated elevations to working feet and inches, squaring by 3 - 4 - 5 system, etc. h. Layout, locations and quantities of hangers, inserts, eye pins, carrying and secondary channels, bracing etc. for suspended ceilings	
3. Calculate various units of measure in imperial and metric systems.	**20%**

***

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: D1 Framing Interior Walls /Ceilings 1

Level: One

Duration: 45 hours

Theory: 11 hours

Practical: 34 hours

Overview:

This unit is designed to provide the apprentice with knowledge and skills to frame interior walls and ceilings. Topics in this unit include: wall and ceiling specifications, framing techniques, building codes and procedures, fire and sound rating procedures, steel stud material and erection, and wall and ceiling legends and schedules.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe various types of walls, ceilings and specifications. a. Bearing b. Non-bearing c. Prefabricated d. Shaft walls	**6.75%**
2. Describe framing techniques for walls and ceilings.	**6.75%**
3. Discuss building codes and procedures.	**9%**
4. Describe fire rating and sound rating procedures.	**9%**
5. Describe steel stud materials and erection of framing interior walls and ceilings. a. Floor and ceiling channels b. Stud types and spacings c. Layout and aligning methods d. Securing systems e. Bracing procedures f. Wall openings g. Backing systems h. Tools	**6.75%**
6. Interpret wall and ceiling legends and schedules.	**6.75%**
7. Frame an interior wall. a. Floor layout b. Floor and ceiling runners c. Slip joints d. Plumbing and aligning procedures e. Various metal-stud types • Load-bearing	**28%**

- Non-loadbearing

f. Bracing procedures
g. Intersecting walls
h. Window, door and access openings and recesses
i. Installation of top and bottom track
j. Installation of steel studs
k. Resilient sound bars

8. Frame an interior ceiling. 22%

9. Lay out and fabricate opening in drywall suspended-ceilings. 5%

a. Layout
b. Vertical ceiling drops and returns
c. Open peripheral details
d. Fire resistive requirements - fixture enclosure and duct openings

****

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: D3 Framing Metal Doors, Windows, etc.

Level: One

Duration: 7 hours

Theory: 3 hours

Practical: 4 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to frame metal doors, windows and access panels. Topics in the unit include: anchoring and shimming products, metal door and window framing installation techniques, fire codes and access panels and access panels installation techniques.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe metal door and window frames. a. Types • Specified frames • Anchors and shims b. Sizes c. Door-swing direction	**14%**
2. Describe anchoring and shimming products and their properties.	**14%**
3. Explain door and window installation techniques. a. Interpret door/window schedule b. Frame compatible with door swing direction c. Level, plumb and square frame	**21%**
4. Install metal door- and window-frames.	**24%**
5. Discuss access panels. a. Types • Specified panels	**7%**
6. Discuss fire codes in relation to access panels.	**7%**
7. Describe panel installation instructions.	**7%**
8. Install access panels.	**6%**

***

Apprenticeship Manitoba

Lather (Interior Systems Mechanic)

Unit: G2 Exterior Sheathing 1

Level: One

Duration: 7 hours

Theory: 5 hours

Practical: 2 hours

Overview:

This unit is This unit is designed to provide the apprentice with the knowledge and skills of the installation and application of exterior sheathing. Topics include: types of exterior sheathing materials, properties of exterior sheathing, installation techniques and application techniques of exterior sheathing.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe types of exterior sheathing materials.	**25%**
2. Discuss the properties of exterior sheathing. a. Permeability b. Perm rating c. Porosity	**25%**
3. Discuss the installation techniques of exterior sheathing. a. Measuring material b. Cutting material c. Placing material d. Securing material	**20%**
4. Demonstrate application techniques of exterior sheathing.	**30%**

***