

Lather (Interior Systems Mechanic) Level 2

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Unit: B2 Blueprint Reading and Specifications 2

Level: Two

Duration: 28 hours

Theory: 14 hours

Practical: 14 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of blueprint reading and specifications. Topics will include: drawings with notes, presentation on blueprints, blueprints for shop projects, blueprints for commercial buildings, Lather (Interior Systems Mechanic) work from blueprints and freehand pictorial drawings for clarification.

Objectives and Content:	Percent of Unit Mark (%)
1. Amplify drawings with notes.	20%
2. Discuss presentation on blueprints.	20%
3. Draw blueprints for shop projects.	18%
4. Read and interpret blueprints for commercial buildings. a. Site plans b. Structural plans c. Mechanical plans d. Architectural plans e. Foundation plans f. Electrical plans	
5. Isolate the Lather - Interior Systems Mechanic work from blueprints. a. Specifications b. Plan views and notes c. Room finish and schedules d. Section and detail view e. Elevations f. Reflected ceiling plans	20%
6. Draw freehand pictorial sketches for clarification of details, notes etc. a. Ventilation b. Chase c. Curtain Walls d. Anchors e. Baffles f. Lintels	22%

Lather (Interior Systems Mechanic)

Unit: C2 Trade Mathematics 2

Level: Two

Duration: 35 hours

Theory: 24 hours

Practical: 11 hours

Overview:

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

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Discuss problems dealing with layouts, material sizes, quantities for false beams, soffits, etc.	20%
2. Calculate problems dealing with layouts, material sizes, quantities for false beams, soffits, etc.	10%
3. Discuss layout patterns, materials, types and quantities. a. Control joints b. Expansion joints c. Patented ceilings d. Stepped ceilings e. Fire rated walls f. Sound rated walls	25%
4. Calculate layout patterns, materials, types and quantities.	10%
5. Discuss layout and material quantities for circular and elliptical projects. a. Domed ceilings b. Groined ceilings c. Arches	25%
6. Calculate layout and material quantities for circular and elliptical projects.	10%

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Unit: D2 Framing Interior Walls and Ceilings 2

Level: Two

Duration: 59 hours

Theory: 20 hours

Practical: 39 hours

Overview:

This unit is designed to provide the apprentice with knowledge and skills to frame interior walls and ceilings. Topics in the unit include: wall systems, furring systems on existing walls, installation of insulation, bulkheads and soffits, precast plaster items, and component baffles.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Review wall systems. a. Control and expansion joints b. Access openings and frames c. Typical and occasional job situations d. Layout	14%
2. Describe furring systems on existing walls. a. Spacing b. Shimmiing and securing procedures c. Securing systems	12%
3. Describe the application or installation of insulation in walls and ceilings. a. Vapour barriers b. Secure and fasten insulation c. Heat transfer d. Heat loss e. Attenuation f. Absorption	12%
4. Demonstrate furring procedures on concrete and masonry walls.	6%
5. Discuss bulkheads and soffits. a. Types b. Installation	14%
6. Construct bulkheads ad soffits.	12%
7. Build drywall suspended-ceilings. a. Inserts and hangers b. Eye pins	8%

- c. Levels
 - d. Carrying channels
 - e. Secondary channels
 - f. Bracing
 - g. Bend and form channels
- 8. Layout and fabricate openings in drywall suspended ceilings. 3%**
- a. Electrical fixtures
 - b. Access panels
 - c. Vertical drops and returns
 - d. False beams
- 9. Discuss precast plaster items and their installation techniques. 7%**
- a. Columns
 - b. Coffers
 - c. Cornices and valances
- 10. Describe component baffles. 7%**
- a. Types
 - b. Fastening
 - Existing ceiling systems
 - Existing structures
- 11. Describe types and properties of security mesh. 2%**
- a. Mesh fastening systems
- 12. Install security mesh. 3%**
- a. Cutting
 - b. Placing
 - c. Fasteners
 - d. Wall legends and schedules

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Unit: E1 Acoustic/Suspended Ceilings 1

Level: Two

Duration: 21 hours

Theory: 7 hours

Practical: 14 hours

Overview:

This unit is designed to provide the apprentices with the knowledge and skills for constructing acoustic, suspended and specialty ceilings. Topics will include: types of suspended ceilings, ceiling components, layout and material selections, application of materials, ceiling boards and tiles, Underwriters Laboratories of Canada, suspension systems and installations, metal linear ceiling systems and installations and component ceiling systems.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Discuss types of suspended ceilings.	7%
a. Acoustical	
b. Concealed grid	
c. Exposed grid	
d. National Building Code fire-rating requirements	
e. Linear systems	
f. Semi-concealed	
g. Suspended drywall	
2. Discuss suspended ceiling system components.	7%
a. Anchors/fasteners	
b. Channels	
c. Cross-tees/splines	
d. Hold-down clips	
e. Main-tees	
f. Suspension wire	
g. Tiles	
h. Wall moulding	
i. Wire-ties	
3. Discuss layout and material selections	7%
a. Hangers, insert, eye pins, etc.	
b. Scaffolds	
c. Carrying and secondary channels	
d. Laser, hydro levels	
e. Bending and tying	
f. Bracing	

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| 4. Discuss application of materials. | 7% |
| <ul style="list-style-type: none"> a. Fasteners b. Lifting and securing heavy sheets c. Material thickness for various joists, truss and channel spacings | |
| 5. Describe ceiling boards and tiles. | 7% |
| <ul style="list-style-type: none"> a. Composition types b. Edge details c. Physical properties <ul style="list-style-type: none"> • Noise reduction coefficient • Sound transmission class | |
| 6. State the classification of the Underwriters Laboratories of Canada. | 7% |
| <ul style="list-style-type: none"> a. Fire hazard b. Fire resistive | |
| 7. Explain suspension systems with exposed grid. | 7% |
| 8. Discuss installations of suspended ceilings | 7% |
| <ul style="list-style-type: none"> a. Layout b. Vertical ceiling returns c. Open peripheral details d. Fire resistive requirements for fixture enclosures and duct openings | |
| 9. Discuss components of metal linear ceiling systems. | 7% |
| <ul style="list-style-type: none"> a. Steel and aluminum beams b. Steel and aluminum suspension systems c. Steel and plastic filler strips d. Insulation pads | |
| 10. Discuss installation of metal linear ceiling systems | 7% |
| <ul style="list-style-type: none"> a. Layout <ul style="list-style-type: none"> • Hangers • Interfacing with electrical and mechanical • Peripheral details b. Cutting methods <ul style="list-style-type: none"> • Dies • Power mitre saws • Metal hand cutting tools c. Vertical ceiling returns d. Wall-surface applications <ul style="list-style-type: none"> • Framing • Furring | |
| 11. Demonstrate the use of nails, screws, tie wires, clips, bolts and special fasteners. | 12% |
| 12. Install a component ceiling system using a modular grid. | 18% |
| <ul style="list-style-type: none"> a. Layout b. Vertical ceiling drops and returns c. Open peripheral details d. Fire resistive requirements - fixture enclosures and duct openings | |

Lather (Interior Systems Mechanic)

Unit: F1 Insulation and Sound Barriers 1

Level: Two

Duration: 11 hours

Theory: 7 hours

Practical: 4 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to construct insulation and sound barriers. Topics will include: sound rating and assemblies, methods of sound rating, plenum barriers, and the installation of insulation systems and sound barriers.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Discuss sound ratings and assemblies.	25%
a. Properties of sound	
b. Sound-rated products	
c. STC rating	
2. Describe methods of sound rating.	25%
a. Sound insulation	
b. Resilient bars and sound boards	
c. Acoustical caulking	
d. Pre-finished sound panels	
3. Describe plenum barriers.	20%
a. Types	
• Gypsum board composition	
• Lead	
• Metal lath	
b. Physical characteristics	
4. Install insulation systems and sound barriers.	30%
a. Vapour barriers	
b. Batt type insulation	
c. Rigid insulation	
d. Reflective type insulation	
e. Frost isolating fasteners	

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Unit: F3 Demountable Partition Systems 1

Level: Two

Duration: 18 hours

Theory: 6 hours

Practical: 12 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of constructing demountable partition systems. Topics will include: progressive systems, materials, installation techniques of demountable partition systems, and constructing progressive components, and non-progressive components.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Define progressive systems.	6%
2. Discuss battenless and refer to framing, fasteners, board and trimming material	18%
3. Describe installation of demountable partition systems and components.	28%
a. Ceiling track details	
b. Steel and aluminum door frames	
c. Steel and aluminum glazed frames	
d. Corners	
e. Terminations	
f. Intersections	
g. Vinyl and fabric panels	
h. Base details	
i. Component system differences	
4. Recognize physical properties of demountable partition systems.	18%
a. Sound transmission class and gasketing	
b. Fire resistive applications	
5. Use progressive components.	6%
a. Battenless	
• framing	
• fasteners	
• board	
• trimming materials	
6. Use non-progressive components.	6%
a. Battenless	
• framing, fasteners	
• board	

- trimming materials
- b. Batten
 - framing, fasteners
 - board
 - trimming materials

7. Practice constructing progressive and non-progressive demountable partition systems. 18%

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Unit: F5 Drywall Applications 1

Level: Two

Duration: 15 hours

Theory: 5 hours

Practical: 10 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills for installing drywall. Topics will include: types of gypsum wallboard, procedure for installing gypsum wallboard, gypsum wallboard accessories, application of beads, casings and expansion joints, problems with faulty installation, and installing gypsum, corner beads, casing and metal stops and expansion and control joints.

Objectives and Content:

**Percent of
Unit Mark (%)**

1. Identify types of gypsum wallboard.

10%

- a. Cementitious
- b. Edge profiles
- c. Fire-rated
- d. Foil-back
- e. Lead-lined
- f. Moisture-resistant
- g. Plaster lath

2. Describe procedure for installing gypsum wallboard.

14%

- a. Acoustical application
- b. Adhesives
- c. Air-tight drywall approach
- d. Bending drywall sheets
- e. Causes of nail-popping
- f. Fasteners
- g. Floating corners
- h. Furring
- i. Horizontal. vertical application
- j. National Building Code requirements
- k. Openings
- l. Pre-decorated application
- m. Single/laminated application

3. Identify gypsum wallboard accessories.

10%

- a. Access panels
- b. Acoustical sealants
- c. Control joints
- d. Corner bead

- e. Fasteners
 - f. Gaskets
 - g. Grounds
 - h. Metal mesh
 - i. Mouldings
 - j. Resilient channel
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- 4. **Describe the application of beads, casings and expansion joints.** **15%**
 - a. Types
 - b. Function
 - c. Bonding with finish coats, paints etc.

 - 5. **Explain the problems created for other trades through faulty installation of materials.** **14%**

 - 6. **Apply single layer of gypsum.** **7%**

 - 7. **Apply standard lamination gypsum.** **7%**

 - 8. **Layout and install a variety of material types.** **4%**

 - 9. **Install corner beads.** **4%**

 - 10. **Install casings and metal stops.** **7%**

 - 11. **Install expansion and control joints.** **7%**

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Unit: F7 Taping and Finishing

Level: Two

Duration: 7 hours

Theory: 3 hours

Practical: 4 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to tape and finish a drywall project. Topics will include: types of filling compounds, tools and equipment, applying filler and tape, finish sanding, precast plaster specialized systems and repairing deficiencies.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
<p>1. Discuss types of filling compounds.</p> <ul style="list-style-type: none"> a. Manufacturers' specifications b. Selection of filler/substrate combination to suit site condition 	7%
<p>2. Describe tools, equipment and supplies used for taping and finishing.</p> <ul style="list-style-type: none"> a. Types b. Selection for given application 	7%
<p>3. Explain how to apply filler and tape.</p> <ul style="list-style-type: none"> a. Drying and/or curing conditions b. Mixing compound to suit site conditions c. Embed tape d. Compounds for rough coat e. Finish trim f. Compounds for finish coat 	25%
<p>4. Explain finish sanding.</p> <ul style="list-style-type: none"> a. Sanding techniques b. Abrasives c. Sanding joints d. Deficiencies <ul style="list-style-type: none"> • Identification • Repair 	17%
<p>5. Mix joint compound pre-fill and imbed drywall tape.</p>	3%
<p>6. Discuss precast plaster specialized systems.</p> <ul style="list-style-type: none"> a. Physical properties b. Delivery, storage and handling c. On-site installation d. Tolerances 	14%

- e. Patching and cleaning
 - f. Caulking
 - g. Finishing
- 7. Practice taping and finishing on a drywall project. 21%**
- a. Corner beads and trim
 - b. Finish coat
 - c. Sanding
- 8. Recognize and repair deficiencies. 6%**

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Unit: G1 Air and Vapour Membranes

Level: Two

Duration: 16 hours

Theory: 14 hours

Practical: 2 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to install interior and exterior membranes. Topics with include: types of interior and exterior membranes, the purpose of vapour/air barriers, installation techniques and reasons for barrier failures.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Describe types of interior membranes.	10%
2. Discuss the purposes of interior membranes and vapour/air barriers.	10%
3. Discuss the installation techniques of interior membranes.	10%
4. Describe the types of exterior membranes.	8%
5. Discuss the purposes of exterior membranes and vapour/air barriers.	7%
6. Discuss the installation techniques of exterior membranes.	7%
7. Describe air barriers.	10%
a. Types	
• Conventional polyethylene barrier	
b. Application procedure	
c. Maintenance procedure	
d. Principles and fundamentals	
e. Tools and equipment used	
8. Describe air barrier failures.	8%
9. Demonstrate application techniques for air and vapour barriers.	30%
