

Lather (Interior Systems Mechanic) Level 3

Lather/Interior Systems Mechanic (ISM)

Unit: B3 Blueprint Reading and Specifications 3

Level: Three

Duration: 35 hours

Theory: 20 hours

Practical: 15 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. Prepare working drawings for special features. | 6% |
| a. Domed or groined ceilings | |
| b. Ceilings that incorporate recesses, troughs, steps etc. | |
| 2. Prepare detailed drawings for shop projects. | 6% |
| 3. Study a set of specifications, their scope and the determination of ambiguous or arbitrary sections. | 35% |
| 4. Explain the Bid Depository rules. | 35% |
| 5. Adjust from small scale plan views to large scale details. | 6% |
| 6. Draw pictorial drawings in freehand clarification. | 6% |
| 7. Estimate material takeoff. | 6% |

Lather (Interior Systems Mechanic)

Unit: C3 Trade Mathematics 3

Level: Three

Duration: 35 hours

Theory: 30 hours

Practical: 5 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. Review perimeters, areas, material lists for irregular and curved layouts.	56%
2. Make calculations from specifications or plans.	14%
3. Discuss mechanical advantage and rules.	7%
4. Develop graph and bar charts that correlate job scheduling/timesheets.	7%
5. Calculate areas and material quantities from a blueprint.	8%
6. Estimate with unit costs.	8%

Lather (Interior Systems Mechanic)

Unit: D5 Framing Floors

Level: Three

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to frame floors. Topics include: steel studs, load-bearing limits, building code requirements, floor anchoring and fastening systems, fire rating and sound rating procedures and installation techniques.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Discuss the types of steel studs.	7%
2. Describe general load-bearing limits.	7%
3. Review building code requirements specific to floors.	7%
4. Describe floors.	7%
5. Describe floor anchoring and fastening systems.	17%
6. Discuss fire rating and sound rating procedures	7%
7. Describe floor installation techniques.	18%
a. Openings and recesses	
b. Sill tracks	
c. Bridging	
d. Spacing	
8. Construct a load-bearing steel stud floor and apply framing details.	30%

Lather (Interior Systems Mechanic)

Unit: E2 Acoustic/Suspended Ceilings 2

Level: Three

Duration: 35 hours

Theory: 15 hours

Practical: 20 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills required for constructing acoustic, suspended and specialty ceilings. Topics will include: dropped ceilings and bulkheads, metal linear ceilings, component ceiling systems, ceiling accessories for plastered ceilings, adjustment and adaptations, integrated coffered ceilings, and groined and domed metal lath ceiling.

Objectives and Content:

Percent of Unit Mark (%)

- | | |
|--|-----------|
| 1. Describe function of dropped ceilings and bulkheads. | 8% |
| a. Architectural features | |
| b. Cabinet projections | |
| c. Concealment of structural components | |
| d. Concealment of mechanical and electrical fixtures | |
| e. Fire protection | |
| 2. Describe construction methods associated with dropped-ceiling systems. | 8% |
| a. Adhesives | |
| b. Coverings | |
| c. Elevations | |
| d. Fasteners | |
| e. Finishes | |
| f. Framing details | |
| g. Layout | |
| 3. Describe metal linear ceilings. | 8% |
| a. Materials | |
| • Reflective finishes | |
| - Cutting | |
| - Handling and storage | |
| b. Installation | |
| • Curved ceilings | |
| - Sub-framing | |
| - Templates and jigs | |
| • Angular ceilings | |
| - Layout | |
| - Suspension system framing | |
| • Penetration | |

- Interfacing with electrical
- Interfacing with mechanical

- 4. Construct a metal linear ceiling-system 7%**
- a. Components
 - Suspension system - steel and aluminum
 - Steel and aluminum beams
 - Filler strips - steel and plastics
 - Insulation pads
 - b. Installation
 - Layout
 - Suspension system - steel and aluminum
 - Steel and aluminum beams
 - Filler strips - steel and plastics
 - Cutting methods
 - Dies
 - Power mitre-saw
 - Metal-cutting hand tools
 - Vertical ceiling-returns
 - Wall surfaces
 - Framing
 - Furring
 - c. Installation - exterior
 - Layout
 - Differences re: interior application
- 5. Describe component-ceiling systems. 7%**
- a. Types
 - Tees
 - Metal pans
 - b. Exposed-reveal systems
 - Exposed tee, reveal edge, ceiling board
 - Reveal grid
 - Reveal edge ceiling board
 - c. Installation
 - Layout
 - Concealed tee access details
 - Vertical ceiling drops and returns
 - Interfacing with electrical and mechanical
- 6. Install ceiling accessories for plastered ceilings. 6%**
- a. Control joints
 - b. Expansion joints
 - c. Corner beads
 - d. Plaster stops
- 7. Construct a component-ceiling system. 7%**
- a. Concealed system
 - b. Reveal grid and ceiling board
- 8. Identify adjustments and adaptations from regular layouts. 14%**
- a. Extra securing and reinforcing for special loads
 - b. Seismic and wind installation

- 9. Explain integrated coffered ceilings. 7%**
- a. Columns
 - b. Drywall peripheral suspended ceilings.
- 10. Describe groined and domed metal lath ceilings. 7%**
- 11. Discuss the construction of metal lath ceilings. 14%**
- a. Bending, forming and securing channels
 - b. Securing
 - c. Beads, casings etc.
 - d. Special job considerations.

Lather (Interior Systems Mechanic)

Unit: E3 Non-Suspended Ceilings

Level: Three

Duration: 15 hours

Theory: 5 hours

Practical: 10 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to install non-suspended ceilings. Topics include: steel studs, load-bearing limits, building code requirements, floor anchoring and fastening systems, fire rating and sound rating procedures and installation techniques.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Identify types of non-suspended ceilings.	18%
a. Composition ceiling tile	
b. Gypsum-board	
c. Solid wood/paneling	
2. Describe components of non-suspended ceilings.	26%
a. Adhesives	
b. Battens	
c. Fasteners	
d. Furring	
e. Gypsum board	
f. Lumber	
g. Moulding	
h. Panels	
i. Tiles	
3. Describe procedure of installing non-suspended ceilings.	26%
a. Balancing	
b. Climatizing	
c. Cutting	
d. Elevation	
e. Fasteners	
f. Fire-rated	
g. Fitting	
h. Furring	
i. Layout	
j. Leveling	
k. National Building Code requirements	
l. Pattern	
m. Shimming	

- n. Storage/handling
- o. Strapping

4. Construct a non-suspended ceiling.

30%

- a. Layout
- b. Ceiling patterns
- c. Cut strapping and furring
- d. Install strapping and furring
- e. Placing ceiling panels
- f. Securing ceiling panels

Lather/Interior Systems Mechanic (ISM)

Unit: E4 Access Floor Systems

Level: Three

Duration: 18 hours

Theory: 7 hours

Practical: 11 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to install access floor systems. Topics include: types of access floor systems, fire stop requirements, types of supporting hardware, floor grid and floor panel installation techniques, securing techniques, perimeter moulding and finishing, and installation and cutting methods of ramps, handrails and steps.

Objectives and Content:

**Percent of
Unit Mark (%)**

- | | |
|---|-------------------|
| <p>1. Describe the types of access floor systems.</p> <ul style="list-style-type: none"> a. Rigid core b. Free standing c. Particle core panels d. Steel panels <ul style="list-style-type: none"> • Pedestal supporting and seismic protection techniques e. Pedestal f. Rigid core | <p>14%</p> |
| <p>2. Discuss fire stop requirements.</p> | <p>7%</p> |
| <p>3. Describe types of supporting hardware.</p> | <p>7%</p> |
| <p>4. Discuss floor grid and floor panel installation techniques.</p> | <p>14%</p> |
| <p>5. Discuss floor grid securing techniques.</p> | <p>7%</p> |
| <p>6. Discuss perimeter moulding and finishing.</p> | <p>7%</p> |
| <p>7. Discuss the installation and cutting methods of ramps, handrails and steps.</p> | <p>14%</p> |
| <p>8. Install an access floor system.</p> <ul style="list-style-type: none"> a. Layout b. Pedestals and stringers c. Field panels d. Peripheral cut panels | <p>30%</p> |

Lather (Interior Systems Mechanic)

Unit: F4 Demountable Partition Systems 2

Level: Three

Duration: 14 hours

Theory: 3 hours

Practical: 11 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills of constructing demountable partition systems. Topics will include: more advanced 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.	2%
2. Discuss battenless and refer to framing, fasteners, board and trimming material.	14%
3. Describe installation of demountable partition systems and components.	28%
4. Recognize physical properties of demountable partition systems.	18%
5. Use progressive components.	15%
6. Use non-progressive components.	15%
7. Describe a cornice height partition. a. Framing b. Bracing c. Door and glazing header details	4%
6. Describe a curved-radii corner detail.	4%

Lather (Interior Systems Mechanic)

Unit: F6 Drywall Applications 2

Level: Three

Duration: 17 hours

Theory: 3 hours

Practical: 14 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills for installing drywall. Topics will include a review of: types and properties of drywall, application of beads, casings and expansion joints, problems with faulty installation and installing drywall on radius walls and bulkheads.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Review drywall types and properties. a. Use of single layer drywall b. Standard lamination c. Nails, screws, adhesives, etc. d. Dimension selection e. Patterns or sequence of joints f. Measuring and cutting g. Location and cutting of openings for outlets h. Location and spacing of nails and screws i. Backing board j. Adhesives k. Double face type l. Fire rating and sound rating procedures	21%
2. Describe the application of beads, casings and expansion joints. a. Types b. Function c. Bonding with finish coats, paints, etc.	28%
3. Explain the problems created for other trades through faulty installation of materials.	21%
4. Apply single layer of gypsum on radius walls and bulkheads.	9%
5. Layout and install a variety of material types.	9%
6. Install corner beads.	6%
7. Install expansion and control joints.	6%

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Unit: F8 Shaft Walls

Level: Three

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skills to install shaft walls. Topics will include: types of shaft wall systems, shaft wall installation procedures, anchoring and fastening and construction of a shaft wall.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Discuss types of shaft wall systems.	16%
2. Describe shaft wall installation procedures.	18%
a. Cut	
b. Level	
c. Placing J-tracks	
d. Frame	
e. Coreboard	
f. Finish layers of drywall	
g. Anchors and fasteners	
3. Explain fire-stopping procedures for penetrations.	18%
4. Explain anchoring and fastening procedures.	18%
5. Construct a shaft wall using predetermined specifications.	30%
a. Layout	
b. Ceiling and floor runners	
c. Plumb and align system	
d. Coreboard	
e. Finish layer	

Lather (Interior Systems Mechanic)

Unit: G4 Lath/Stucco Wire

Level: Three

Duration: 13 hours

Theory: 4 hours

Practical: 9 hours

Overview:

This unit is designed to provide the apprentice with the knowledge and skill to install lath and stucco wire. Topics will include: types of stucco wire and laths, attaching hardware, installation techniques, expansion joint requirements, preparation for exterior stucco, metal lath partitions, walls and ceilings, jigs and templates and installing laths and stucco wire.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Discuss types of stucco wire and types of laths.	7%
2. Describe attaching hardware.	7%
a. Fasteners	
3. Explain stucco wire installation techniques.	7%
4. Explain lath installation techniques.	14%
5. Explain expansion joint requirements.	7%
6. Describe preparation for exterior stucco.	7%
a. Wood sheathing and application	
b. Exterior gypsum and application	
c. Building paper	
• Asphalt impregnated	
• Kraft	
• Air barrier paper	
d. Stucco wire	
• Standard welded wire	
• Standard welded wire paper backed	
7. Explain the Lather - Interior Systems Mechanic's role in fabricating of metal lath partitions, walls and ceilings.	14%
a. Studded walls	
b. Specifications of metal lath	
c. Advantages and limitations	
d. Fire rating value	
e. Acoustic value	

- f. Components and layout
 - Ceiling and floor runners
 - Plumbing and aligning
 - Vertical members
 - Metal lath
 - Openings and frames
 - Bead stops and expansion joints

- 8. Identify the use of jigs and templates for drywall and metal lath. 7%**
 - a. Purpose
 - Beams
 - Columns
 - Pilasters
 - Soffits
 - Coves, curved surfaces
 - Temporary and reusable types
 - b. Materials
 - c. Design

- 9. Build jigs and templates. 6%**
 - a. Beams
 - b. Soffits
 - c. Columns
 - d. Pilasters
 - e. Coves, Curved Surfaces

- 10. Install laths. 18%**
 - a. Trim
 - b. Beads
 - c. Expansion joints

- 11. Install stucco wire. 6%**
 - a. Trim
 - b. Beads
 - c. Expansion joints
 - d. Fasteners
 - e. Building paper
 - f. Stucco wire
 - g. K- lath
