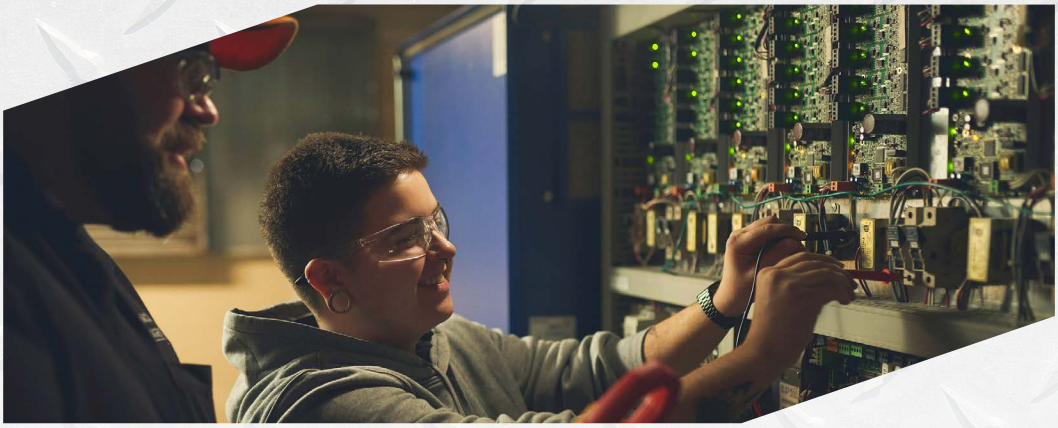
NL Curriculum Standard

# Ironworker (Reinforcing)

April 2026



Newfoundland & Labrador

# PLAN OF TRAINING

## Ironworker (Reinforcing)

March 2026

**Government of Newfoundland and Labrador**
**Department of Education and Early Childhood Development**
**Apprenticeship and Trades Certification Division**

Approved by:

Chairperson, Provincial Apprenticeship and Certification Board

Date: April 15th, 2026

## Preface

This curriculum standard is aligned with the 2025 Red Seal Occupational Standard (RSOS) and National Harmonization sequencing and levels for the Ironworker (Reinforcing) trade. It describes the curriculum content for the Ironworker (Reinforcing) training program.

## Acknowledgements

The Provincial Trade Advisory Committee (PTAC), industry representatives, instructors and apprenticeship staff provided valuable input to the development of this provincial plan of training. Without their dedication to quality apprenticeship training, this document could not have been produced.

We offer a sincere thank you.

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| Final | April 2026 | September 2026 | |

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| RSOS 2025 Tasks | | 2026 POT | |
|---|---|---|---|
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| RSOS 2025 Tasks | | 2026 POT | |
|---|---|---|---|
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| | | IR2160 | Reinforcing Material Installation – Columns and Beams |
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| | | IR2160 | Reinforcing Material Installation – Columns and Beams |
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| 13.05 | De-stresses tendons. | IR2180 | Stressing |
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| 14.01 | Sets up grouting equipment. | IR2190 | Grouting |
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## B. Program Structure

For each and every course, a formal assessment is required for which 70% is the pass mark. A mark of 70% must be attained in both the theory examination and the practical project assignment, where applicable.

The order of course delivery within each level can be determined by the educational agency, as long as pre-requisite conditions are satisfied.

Upon completion of an entry level program, individuals may be required to complete other certifications (employer or job site specific) in order to gain employment.

| Level 1 | | | |
|---|---|---|---|
| **Course No.** | **Course Name** | **Hours** | **Pre-Requisite(s)** |
| IR1000 | Safety | 6 | N/A |
| IR1010 | Healthy and Respectful Work Environments | 12 | N/A |
| IR1020 | Hand and Power Tools | 18 | N/A |
| IR1040 | Access Equipment | 18 | N/A |
| IR1050 | Material Handling | 12 | N/A |
| IR1060 | Welding | 36 | N/A |
| IR1070 | Mechanical Cutting | 6 | N/A |
| IR1080 | Thermal Cutting | 12 | N/A |
| IR1090 | Job Planning | 6 | N/A |
| IR1100 | Layout - Foundations and Walls | 30 | N/A |
| IR1110 | Drawings and Documents I | 18 | N/A |
| IR1120 | Lift Planning I | 15 | N/A |
| IR1130 | Rigging, Hoisting and Positioning I | 15 | N/A |
| IR1140 | Crane Operations - Conventional and Hydraulic | 30 | N/A |
| IR1160 | Reinforcing Material Installation - Foundation, Slabs, Walls | 42 | N/A |
| IR1170 | Pre-stressing and Post-tensioning | 42 | N/A |
| IR1180 | Ironworker Math Essentials | 36 | N/A |
| MENT700 | Mentoring I | 6 | N/A |

| Level 1 | | | |
|---|---|---|---|
| **Course No.** | **Course Name** | **Hours** | **Pre-Requisite(s)** |
| Total Hours | | 360 | |

REQUIRED WORK EXPERIENCE

| Level 2 | | | |
|---|---|---|---|
| **Course No.** | **Course Name** | **Hours** | **Pre-Requisite(s)** |
| IR2000 | Bending | 18 | Level 1 |
| IR2010 | Surveying | 12 | |
| IR2100 | Layout - Columns and Beams | 36 | |
| IR2110 | Drawings and Documents II | 30 | |
| IR2120 | Lift Planning II | 18 | |
| IR2130 | Rigging, Hoisting and Positioning II | 24 | |
| IR2140 | Crane Operations - Tower | 18 | |
| IR2150 | Onsite Fabrication | 30 | |
| IR2160 | Reinforcing Material Installation - Columns and Beams | 42 | |
| IR2180 | Stressing | 24 | |
| IR2190 | Grouting | 12 | |
| MENT701 | Mentoring II | 6 | |
| IR2200 | Program Review | 30 | |
| Total Hours | | 300 | |

## Level 1

## IR1000 Safety

**Learning Outcomes:**

- Demonstrate knowledge ofregulatory requirements pertaining to using fall protection equipment, PPE and safety equipment.
- Demonstrate knowledge of PPE and safety equipment, their characteristics, applications and procedures to operate.
- Demonstrate knowledge of procedures to maintain safe work environment.
- Demonstrate knowledge ofprocedures for emergency response.
- Demonstrate knowledge of training, regulatory and certification requirements to use PPE and safety equipment to maintain safe work environment.

**Duration:** 6 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify codes, standards and safety regulations pertaining to maintaining safe work environment.
   i. lock-out and tag-out
   ii. Occupational Health and Safety (OHS)
   iii. Transportation of Dangerous Goods (TDG)
   iv. WHMIS

2. Identify training and certification requirements to maintain safe work environment.

3. identify types of PPE and safety equipment and describe their procedures for use.

4. Identify hazards and describe safe work practices pertaining to using PPE and safety equipment.

5. Describe procedures for emergency response.

6. Identify safety equipment used to maintain safe work environment and describe their procedures for use.

7. Identify worksite hazards and describe procedures to mitigate and eliminate potential risks.

8. Describe procedures to maintain safe work environment.

9. Describe procedures to inspect, store, maintain and dispose of PPE and safety equipment.

10. Describe procedures to handle, store, transport and dispose of hazardous materials.

    i. lead
    ii. chromium
    iii. asbestos
    iv. combustible materials
    v. solvents
    vi. acids
    vii. oxidizers
    viii. pressurized gases
    ix. zinc
    x. silica

11. Describe fundamentals of housekeeping.

12. Describe procedures to inspect work environment.

**Practical Requirements:**

None

## IR1010 Healthy and Respectful Work Environments

**Learning Outcomes:**

- Demonstrate knowledge of personal health and well-being.
- Demonstrate knowledge of techniques to manage personal health and well-being.
- Demonstrate knowledge of professionalism and professional ethics.
- Demonstrate knowledge of value of diversity, equity, inclusion and belonging in workplace.

**Duration:** 12 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Describe how personal health and well-being impacts professional practice and healthy work environments.

2. Identify and describe physical and emotional requirements of trade.

3. Identify workplace stressors.

4. Describe elements of healthy organizational cultures and the importance of collaboration and community.

5. Identify behaviours that affect physical and mental health.

6. Describe stress and time management techniques.

7. Identify supports and techniques to manage health and well-being.

8. Identify characteristics and purpose of professionalism and professional ethics that impact professionalism.

9. Identify elements of codes of ethics, codes of conduct and other professional standards, and describe their characteristics and applications.

10. Describe diversity, equity and inclusion.
    i. diversity and differences between individuals
    ii. equity and importance of access to opportunities and resources
    iii. inclusion and the creation of respectful work environments

11. Identify conduct that constitutes harassment and discrimination.

**Practical Requirements:**

None

## IR1020 Hand and Power Tools

**Learning Outcomes:**

- Demonstrate knowledge of hand tools and measuring tools, their characteristics, applications and operation.
- Demonstrate knowledge of procedures to use and maintain hand tools and measuring tools.

**Duration:** 18 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Interpret information pertaining to hand tools, power tools and measuring tools found in manufacturers' specifications.

2. Identify hazards and describe safe work practices pertaining to using and maintaining hand tools, power tools and measuring tools.

3. Identify training, certification and regulatory requirements pertaining to using and maintaining power tools.

4. Identify types of hand and power tools and describe their characteristics, applications and operating principles.

5. Identify types of measuring tools, and describe their characteristics, applications and operating principles.

1. Identify types of power sources and describe their characteristics and applications.
    i. pneumatic
    ii. electric
    iii. gas
    iv. hydraulic
    v. mechanical
    vi. powder actuated
    vii. battery

6. Describe procedures to inspect, identify and remove damaged, worn or unsafe hand tools, power tools and measuring tools from service.

7. Describe procedures to clean, maintain, store and dispose of hand tools, power tools and measuring tools.

## Practical Requirements

None

# IR1040 Access Equipment

**Learning Outcomes:**

- Demonstrate knowledge of mobile elevation work platforms (MEWPs) and ladders, their components, accessories, characteristics, applications~~,~~ and operation.
- Demonstrate knowledge of procedures to use and maintain MEWPs and ladders.
- Demonstrate knowledge of training, certification and regulatory requirements pertaining to using and maintaining MEWPs and ladders.

**Duration:** 18 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to using access equipment.

2. Identify types of access equipment, their components and accessories, and describe their characteristics and applications.
   i. MEWPS
   ii. ladders
   iii. scaffolding
   iv. swing stages
   v. boatswain chair
   vi. angel wing work platform

3. Interpret information pertaining to access equipment found in manufacturers' specifications.

4. Identify training, certification and regulatory requirements pertaining to using and maintaining access equipment.

5. Describe operating principles of access equipment.

6. Describe procedures to inspect, identify and remove damaged, worn or unsafe access equipment and their accessories from service.

7. Describe safety procedures to erect ladders.

8. Describe procedures pertaining to the use of access equipment.
   i. position
   ii. erect

iii. level
iv. plumb
v. secure
vi. maintain
vii. store

**Practical Requirements:**

1. Place and remove a ladder.

# IR1050 Material Handling

**Learning Outcomes:**

- Demonstrate knowledge of material handling equipment, their components, characteristics, applications and operation.
- Demonstrate knowledge of procedures to use and maintain material handling equipment.
- Demonstrate knowledge of training, certification and regulatory requirements pertaining to using and maintaining material handling equipment.

**Duration:** 12 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to using material handling equipment.

2. Interpret information pertaining to material handling equipment found in manufacturers' specifications.

3. Identify training, certification and regulatory requirements pertaining to using and maintaining material handling equipment.

4. Identify types of material handling equipment, their components and describe their characteristics and applications.
   i. equipment
      - forklifts
      - telehandlers
      - pallet jacks
      - gantry cranes
      - spider cranes
   ii. components
      - winches
      - clamps
      - motivation booms (stinger)
      - fork extensions
      - personnel platforms
      - spreader beams

5. Describe operating principles of material handling equipment.

6. Describe procedures to inspect, identify and remove damaged, worn or unsafe material handling equipment from service.

7. Describe procedures to position, use, store and maintain material handling equipment.

**Practical Requirements:**

None

## IR1060 Welding

**Learning Outcomes:**

- Demonstrate knowledge of welding equipment, their components, consumables, characteristics, applications and operation.
- Demonstrate knowledge of procedures to use and maintain welding equipment.
- Demonstrate knowledge of training, certification and regulatory requirements related to the use and maintenance of welding equipment.

**Duration:** 36 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to using and maintaining welding equipment.

2. Interpret information and symbols pertaining to welding found on drawings and specifications.

3. Identify training, certification and regulatory requirements pertaining to using and maintaining welding equipment.

4. Identify types of welding equipment and their components and consumables and describe their characteristics and applications.

5. Describe operating principles of welding equipment and their components and consumables.

6. Describe welding processes, procedures and techniques.
   i. shielded metal arc welding (SMAW)
   ii. flux core arc welding (FCAW)
   iii. gas metal arc welding (GMAW)
   iv. gas tungsten arc welding (GTAW)

7. Describe possible welding discontinuities and defects.

8. Describe procedures to maintain welding equipment.

9. Describe procedures to identify and remove damaged, worn or unsafe welding equipment and components from service.

10. Describe procedures to test, inspect, maintain and store welding equipment and their components and consumables.

**Practical Requirements:**

None

# IR1070 Mechanical Cutting

**Learning Outcomes:**

- Demonstrate knowledge of mechanical cutting equipment, their components, characteristics, applications and operation.
- Demonstrate knowledge of procedures to use and maintain mechanical cutting equipment and their components.
- Demonstrate knowledge of training, certification and regulatory requirements to use and maintain mechanical cutting equipment.

**Duration:** 6 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to using and maintaining mechanical cutting equipment and their components.

2. Interpret information pertaining to mechanical cutting equipment, and their components found in specifications.

3. Identify training, certification and regulatory requirements pertaining to using and maintaining mechanical cutting equipment.

4. Identify types of mechanical cutting equipment and components and describe their characteristics and applications.
   i. equipment
      - power shears
      - gas and battery powered quick-cut saws
      - angle grinders (zip cuts)
      - reciprocating saws
      - portable band saws
   ii. components
      - blades
      - guards
      - handles
      - cords

5. Describe operating principles of mechanical cutting equipment.

6. Describe procedures to inspect, identify and remove damaged, worn or unsafe mechanical cutting equipment and components from service.

7. Describe procedures to maintain, store and secure mechanical cutting equipment and components.

**Practical Requirements:**

None

# IR1080 Thermal Cutting

**Learning Outcomes:**

- Demonstrate knowledge of thermal cutting equipment, their components, consumables, characteristics, applications and operation.
- Demonstrate knowledge of procedures to use and maintain thermal cutting equipment and their components.
- Demonstrate knowledge of training, certification and regulatory requirements to use and maintain thermal cutting equipment.

**Duration:** 12 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to using and maintaining thermal cutting equipment and their components and consumables.

2. Interpret information pertaining to thermal cutting equipment, and their components and consumables found in drawings and specifications.

3. Identify training, certification and regulatory requirements pertaining to using and maintaining thermal cutting equipment.

4. Identify types of thermal cutting equipment, components and consumables and describe their characteristics and applications.
   i. equipment
      - oxy-fuel
      - plasma
   ii. components
      - blades
      - work clamps
      - torches
      - compressed gas cylinders
      - compressed air
      - air lines
      - hoses
      - regulators
      - check valves
      - torch tips
   iii. consumables
      - compressed gases
      - contact tips

5. Describe operating principles of thermal cutting equipment.

6. Describe procedures to inspect, identify and remove damaged, worn or unsafe thermal cutting equipment and components from service.

7. Describe procedures to maintain, store and secure thermal cutting equipment, components and consumables.

**Practical Requirements:**

1. Assemble and disassemble oxy-fuel torch.

2. Cut rebar using oxy-fuel torch.

## IR1090 Job Planning

**Learning Outcomes:**

- Demonstrate knowledge of materials and supplies, their characteristics and applications.
- Demonstrate knowledge of procedures to organize materials and supplies.
- Demonstrate knowledge of training, certification and regulatory requirements to use and maintain thermal cutting equipment.
- Demonstrate knowledge of regulatory requirements pertaining to storing, handling and transporting of materials and supplies.
- Demonstrate knowledge of planning tasks and procedures.
- Demonstrate knowledge of regulatory requirements pertaining to trade.

**Duration:** 6 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to unloading and organizing materials and supplies.

2. Identify tools and equipment used to organize materials and supplies, and describe their procedures for use, capabilities and limitations.

3. Identify codes, standards and regulations pertaining to storing, handling and transporting of materials and supplies.

4. Identify materials and supplies, and describe their characteristics, applications, and identification requirements.

5. Identify sources of information relevant to handling materials and supplies.

6. Identify shipping documents and describe their characteristics and applications.

7. Describe information pertaining to materials, supplies and planning found on drawings and specifications.

8. Describe product specific storage and handling principles and considerations.

9. Describe principles and procedures to organize materials and supplies and site preparation.

10. Describe procedures to inspect materials and supplies.

11. Identify elements of a schedule and describe placement sequence.

12. Identify regulatory requirements and responsibilities and describe procedures for recycling and disposing of materials.

13. Identify information gathering and communication techniques and describe their associated procedures.

14. Describe procedures to perform scheduling of materials supplies and equipment.

15. Describe procedures to estimate work requirements.

**Practical Requirements:**

None

## IR1100 Layout – Foundations and Walls

**Learning Outcomes:**

- Demonstrate knowledge of procedures to perform layout.
- Demonstrate knowledge of regulatory requirements pertaining to performing layout.

**Duration:** 30 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify codes, standards and regulations pertaining to performing layout.

2. Interpret information to perform layout found on drawings and specifications.

3. Identify measuring devices and tools used to perform layout and describe their procedures for use.

4. Identify hazards and describe safe work practices pertaining to performing layout.

5. Describe procedures to perform layout

**Practical Requirements:**

None

## IR1110 Drawings and Documents I

**Learning Outcomes:**

- Demonstrate knowledge of drawings and drafting techniques, their characteristics and applications.
- Demonstrate knowledge of regulatory requirements pertaining to trade.

**Duration:** 18 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify codes, standards and regulations pertaining to trade.

2. Identify types of drawings and views and describe their characteristics and applications.

3. Interpret symbols found on drawings and specifications.

4. Identify abbreviations and technical vocabulary.

5. Describe drafting techniques.

**Practical Requirements:**

None

## IR1120 Lift Planning I

**Learning Outcomes:**

- Demonstrate knowledge of lift planning principles.
- Demonstrate knowledge of regulatory requirements pertaining to rigging, hoisting and positioning.

**Duration:** 15 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to securing lift areas, rigging, hoisting and positioning.

2. Identify codes, standards and regulations pertaining to rigging, hoisting and positioning.

3. Identify types of rigging, hoisting and positioning equipment.
   i. factors for selection
   ii. characteristics
   iii. tag information
   iv. applications
   v. procedures for use

4. Identify ropes, knots and splices and describe their characteristics.
   i. wire
   ii. natural fibre
   iii. synthetic

5. Identify properties requiring consideration when a load is to be lifted.

6. Identify types of lifts and describe their characteristics and applications.

7. Identify and describe communication methods and delegation of responsibilities during rigging, hoisting and positioning.

8. Describe procedures to secure lift area.
   i. identify swing zone
   ii. inspect area surrounding lift
   iii. perform walk-through.

**Practical Requirements:**

None

## IR1130 Rigging, Hoisting and Positioning I

**Learning Outcomes:**

- Demonstrate knowledge of rigging, hoisting and positioning equipment, their applications, characteristics and procedures for use.
- Demonstrate knowledge of procedures to assemble, attach, use and remove rigging, hoisting and positioning equipment and components.

**Duration:** 15 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards, and describe safe work practices pertaining to assembling, attaching, using, removing and disassembling rigging, hoisting and positioning equipment and components.

2. Identify codes, standards and regulations pertaining to rigging, hoisting and positioning.

3. Identify tools and equipment used to assemble, attach, use, remove and disassemble rigging, hoisting and positioning equipment and components, and describe their procedures for use.

4. Identify various slings, sling arrangements and hitches, and describe their characteristics.

5. Describe requirements and specifications involved in rigging operations.

6. Describe function of various hitches and configurations.

7. Describe types and parts of hoisting and positioning equipment.

8. Identify removal criteria for damaged rigging, hoisting and positioning equipment.

9. Describe procedures and sequence of inspection of rigging, hoisting and positioning equipment.

10. Identify types of knots, bends and hitches, and describe their characteristics.

11. Identify rolling and positioning equipment.

12. Identify bracing methods.
    i. guy wires
    ii. false work
    iii. temporary supports
    iv. adjustable brace poles
    v. lashing

13. Identify equipment used to temporarily suspend loads.
    i. chain fall
    ii. come-along
    iii. manual cable puller (grip hoist)
    iv. strong backs
    v. dunnage
    vi. cribbing
    vii. turn buckles

**Practical Requirements:**

None

## IR1140 Crane Operations – Conventional and Hydraulic

**Learning Outcomes:**

- Demonstrate knowledge of cranes and equipment, their components, characteristics, applications and operation.
- Demonstrate knowledge of procedures to set up, rig, mobilize and demobilize cranes, equipment and their components.
- Demonstrate knowledge of regulatory requirements pertaining to setting up, rigging, mobilizing and demobilizing cranes, equipment and their components.

**Duration:** 30 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify codes, standards and regulations pertaining to setting up, rigging and demobilizing setting up, rigging and demobilizing cranes, equipment and components.

2. Identify hazards and describe safe work practices pertaining to setting up, rigging, mobilizing and demobilizing cranes, equipment and components.

3. Interpret information pertaining to cranes, equipment and components found in manufacturers' specifications, equipment manuals, load charts, range diagrams and engineered drawings.

4. Identify tools and equipment used to set up, rig, mobilize and demobilize cranes, equipment and components and describe their procedures for use.

5. Identify types of cranes, equipment and components and describe their characteristics and applications.

6. Describe operating principles of cranes, equipment and components.

7. Describe procedures to set up, inspect, mobilize and demobilize cranes, equipment and components.

**Practical Requirements:**

None

## IR1160 Reinforcing Material Installation – Foundations, Slabs, Walls

**Learning Outcomes:**

- Demonstrate knowledge of reinforcing materials, their characteristics and applications.
- Demonstrate knowledge of procedures to place, tie and splice reinforcing materials and components.
- Demonstrate knowledge of regulatory requirements pertaining to placing reinforcing materials and components.
- Demonstrate knowledge of safety training, certification and regulatory requirements related to placing and tying reinforcing materials and components.

**Duration:** 42 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices and selection of PPE pertaining to placing, tying and splicing reinforcing materials and components.

2. Identify codes, standards and regulations pertaining to placing, tying and splicing reinforcing materials and components.

3. Interpret information pertaining to reinforcing materials and splices found on drawings and engineering specifications.

4. Identify safety training, certification and regulatory requirements related to placing, tying and splicing reinforcing materials and components.

5. Identify reinforcing materials and describe their characteristics and applications.
   i. stainless steel rebar
   ii. mild steel rebar
   iii. galvanized rebar
   iv. epoxy-coated rebar

6. Identify tools and equipment used to place, tie and splice reinforcing materials, and describe their procedures for use.

7. Identify types of ties, wire, gauges and splices and describe their characteristics and applications.

8. Describe splicing techniques, and their applications.
   i. welding

ii. lap splicing
iii. mechanical splicing
iv. coupling
v. non-contact splicing

9. Describe specialty splicing systems and their installation.

10. Describe sequence and procedures to place, tie and splice reinforcing materials.

11. Describe procedures to inspect tied reinforcing materials.

**Practical Requirements:**

None

## IR1170 Pre-Stressing and Post-Tensioning

**Learning Outcomes:**

- Demonstrate knowledge of pre-stressed/post-tensioning systems, their materials, characteristics, applications and operation.
- Demonstrate knowledge of bursting steel and anchorages, their components, characteristics and applications.
- Demonstrate knowledge of training, certification and regulatory requirements to lay out profiles, install bursting steel and anchorages, and place, connect and protect tendons and accessories.

**Duration:** 42 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to pre-stressing and post-tensioning.

2. Identify codes, standards and regulations.
   i. laying out profiles
   ii. place tendons and accessories
   iii. install bursting steel and anchorages
   iv. connect tendons to anchorages
   v. protect tendons

3. Identify industry training and certification requirements.
   i. lay out profiles
   ii. place tendons and accessories
   iii. install bursting steel and anchorages
   iv. connect tendons to anchorages
   v. protect tendons

4. Interpret information found on placing drawings and engineering.
   i. pre-stressed/post-tensioning systems
   ii. pre-stressed/post-tensioning materials
   iii. tendons and accessories
   iv. tendon protection materials
   v. bursting steel
   vi. anchorages

5. Identify tools and equipment used in pre-stressing and post-tensioning and describe their procedures for use.

i. lay out profile
ii. place tendons and accessories
iii. install bursting steel, anchorages and components
iv. connect tendons to anchorages
v. protect tendons

6. Identify pre-stressed/post-tensioning systems and materials, and describe their characteristics, applications and operation.

7. Identify tendons, tendon protection material, anchors and their related accessories and describe their characteristics and applications.

8. Identify placement tolerances of tendons, anchors and supports.

9. Identify types of bursting steel and anchorages and describe their characteristics and applications.

10. Describe benchmarks and elevations.

11. Describe procedures to lay out and inspect a profile.

12. Describe procedures to position, secure, cut, install and protect tendons and accessories.

13. Describe pre-stressed/post-tensioning installation sequences.

14. Describe procedures to place, modify~~,~~ and tie bursting steel.

15. Describe procedures to install anchorages.

16. Describe procedures to connect tendons to anchorages.
    i. fastening techniques

17. Describe procedures to inspect pre-stressing and post-tensioning systems.
    i. ducts
    ii. tendons
    iii. protected tendons
    iv. installed bursting steel
    v. anchorages
    vi. related components.

18. Describe procedures to store, dispose of and recycle tendons and accessories, bursting steel, anchorages, tendon protection materials and related components.

**Practical Requirements:**

None

# IR1180 Ironworker Math Essentials

**Learning Outcomes:**

- Demonstrate knowledge of essential numeracy skills.
- Demonstrate knowledge of mathematics as a critical element of the trade environment.
- Demonstrate knowledge of mathematical principles in trade problem solving situations.
- Demonstrate the ability to solve simple mathematical word problems.

**Duration:** 36 Hours

**Pre-Requisite(s):** None

**Objectives and Content:**

Wherever possible, the instructor is expected to use trade specific examples to reinforce the unit objectives.

1. Describe whole number operations.
   i. read, write, count, round off, add, subtract, multiply and divide whole numbers

2. Describe the application of the order of operations in math problems.

3. Describe fraction and mixed number operations.
   i. read, write, add, subtract, multiply and divide fractions

4. Describe decimal operations.
   i. read, write, round off, add, subtract, multiply and divide decimals

5. Describe percent/decimal/fraction conversion and comparison.
   i. convert between fractions, decimals and percents

6. Identify percentage operations.
   i. read and write percentages
   ii. calculate base, rates and percentages

7. Identify ratio and proportion operations.
   i. use a ratio comparing two quantities with the same units
   ii. use a proportion comparing two ratios

8. Describe the use of the imperial measurement system in math problems.
   i. identify units of measurement
      - length
      - mass
      - area
      - volume
      - capacity

9. Describe the use of the metric measurement system in math problems.
   i. identify units of measurement
      - length
      - mass
      - area
      - volume
      - capacity

10. Identify angles, lines and geometric shapes.
   i. determine whether an angle is right, acute or obtuse
   ii. identify parallel, perpendicular, horizontal and vertical lines
   iii. identify types of triangles, quadrilaterals~~,~~ and 3-dimensional shapes

11. Describe estimation strategies.
   i. estimate a linear measure using a referent
   ii. estimate length, area and volume of objects in metric and imperial systems

12. Describe problem solving that involves linear measurement using instruments such as rulers or tape measures, in the metric and imperial systems.

**Practical Requirements:**

1. To emphasize or further develop specific knowledge objectives, students will be required to complete practical demonstrations which confirm proper application of mathematical theory to job skills.

## MENT700 Mentoring I

**Learning Outcomes:**

- Demonstrate knowledge of effective communication practices as a learner.
- Demonstrate knowledge of strategies for learning skills in the workplace.

**Duration:** 6 Hours

**Pre-Requisite(s):** None

**Learning Objectives:**

1. Describe the importance of one's own individual experiences.

2. Identify behaviours that demonstrate positive learning experiences.

3. Identify the benefits of workplace mentoring for the apprentice, mentor and employer.

4. Identify the partners involved in apprenticeship training.

5. Describe the shared responsibilities for workplace learning in apprenticeship.

6. Identify different learning needs and strategies to address challenges or barriers in the workplace.
   i. learning disabilities
   ii. language
   iii. underrepresentation

7. Identify the components that create a positive and inclusive workplace culture.
   i. workplace characteristics
   ii. individual behaviours

8. Identify various learning styles and determine one’s own learning preferences.

9. Explain how learning preferences impact learning new skills.

10. Identify different learning strategies to meet individual learning needs.

11. Describe the importance of adapting to a variety of teaching and learning methods in the workplace.

12. Identify techniques for effective communication as a learner.

i. verbal and non-verbal
ii. active listening

13. Identify and describe personal responsibilities and attitudes that contribute to on-the-job success.
    i. self advocating
    ii. asking questions
    iii. accepting constructive feedback
    iv. working safely
    v. employing time management techniques and being punctual

**Practical Objectives:**

None

## Level 2

## IR2000 Bending

**Learning Outcomes:**

- Demonstrate knowledge of bending tools and equipment, their characteristics, applications and operation.
- Demonstrate knowledge of procedures to use and maintain bending tools and equipment.
- Demonstrate knowledge of regulations pertaining to using and maintaining bending tools and equipment.

**Duration:** 18 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to using and maintaining bending tools and equipment.

2. Identify standards and regulations pertaining to using and maintaining bending tools and equipment.

3. Interpret information pertaining to bending tools and equipment uses and limitations found in manufacturers' specifications.

4. Identify types of bending tools and equipment and describe their characteristics and applications.

5. Describe operating principles of bending tools and equipment.

6. Describe procedures to inspect, identify and repair or remove damaged, worn or unsafe bending tools and equipment from service.

7. Describe procedures to clean, maintain, calibrate and store bending tools and equipment.

8. Describe procedures to dispose of damaged bending tools and equipment.

**Practical Requirements:**

None

## IR2010 Surveying

**Learning Outcomes:**

- Demonstrate knowledge of surveying equipment, their characteristics, applications and operation.
- Demonstrate knowledge of procedures to use surveying equipment.
- Demonstrate knowledge of training requirements to use surveying equipment.

**Duration:** 12 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to using surveying equipment.

2. Interpret information pertaining to measurements found on drawings and specifications.

3. Identify training requirements to use surveying equipment.

4. Identify types of surveying equipment and describe their characteristics and applications.

5. Describe operating principles of surveying equipment.

6. Describe measurement and marking techniques and use of offsets.

7. Describe procedures to interpret and layout drawing information.

8. Describe procedures to set up and check calibration of surveying equipment.

9. Describe procedures and methods to plumb and align structures.

10. Describe procedures to maintain surveying equipment.

**Practical Requirements:**

None

## IR2100 Layout - Columns and Beams

**Learning Outcomes:**

- Demonstrate knowledge of procedures to perform layout.
- Demonstrate knowledge ofregulatory requirements pertaining to performing layout.

**Duration:** 36 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify codes, standards and regulations pertaining to performing layout.

2. Interpret information to perform layout found on drawings and specifications.
   i. columns
   ii. beams

3. Identify measuring devices and layout tools used to perform layout and describe their procedures for use.

4. Identify hazards and describe safe work practices pertaining to performing layout.

5. Describe procedures to perform layout.

**Practical Requirements:**

None

## IR2110 Drawings and Documents II

**Learning Outcomes:**

- Demonstrate knowledge of drawings and drafting techniques, their characteristics and applications.
- Demonstrate knowledge of reference material and documentation, their purpose, application and use.
- Demonstrate knowledge of procedures to complete and interpret documentation and written and electronic documents.

**Duration:** 30 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify codes, standards and regulations pertaining to trade.

2. Describe drafting techniques.

3. Identify types and sources of reference material and documentation and describe their purpose and applications.

4. Describe procedures to access, interpret and apply information found in reference material and documentation.

5. Describe procedures to complete documentation and written and electronic documents.

**Practical Requirements:**

None

## IR2120 Lift Planning II

**Learning Outcomes:**

- Demonstrate knowledge of load requirements.
- Demonstrate knowledge of calculations and related factors to determine properties of load.
- Demonstrate knowledge ofregulatory requirements pertaining to rigging, hoisting and positioning.

**Duration:** 18 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to securing lift areas, rigging, hoisting and positioning.

2. Identify and interpret codes, standards and regulations pertaining to rigging, hoisting and positioning.

3. Interpret information pertaining to rigging, hoisting and positioning found on drawings and engineering specifications.

4. Identify types of rigging, hoisting and positioning equipment.
   i. factors for selection
   ii. characteristics
   iii. tag information
   iv. applications
   v. procedures for use

5. Identify ropes, knots and splices and describe their characteristics, construction, grades, applications. formulas, factors and reductions.
   i. wire
   ii. natural fibre
   iii. synthetic

6. Identify properties requiring consideration when a load is to be lifted.

7. Identify formulas, calculations and related factors to determine load weight and centre of gravity.

8. Identify types of lifts and describe their characteristics and applications.

9. Describe effects of sling angle when preparing for rigging, hoisting and positioning operations.

10. Identify elements of crane, sling and attachment charts and tables.

11. Describe procedures to secure lift area.

**Practical Requirements:**

None

## IR2130 Rigging, Hoisting and Positioning II

**Learning Outcomes:**

- Demonstrate knowledge of rigging, hoisting and positioning equipment, their applications, characteristics and procedures for use.
- Demonstrate knowledge of procedures to assemble, attach, use and remove rigging, hoisting and positioning equipment and components.

**Duration:** 24 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards, and describe safe work practices pertaining to assembling, attaching, using, removing and disassembling rigging, hoisting and positioning equipment and components.

2. Identify codes, standards and regulations pertaining to rigging, hoisting and positioning.

3. Identify various slings, sling arrangements and hitches, and describe their characteristics and applications.

4. Describe requirements and specifications involved in rigging operations.

5. Describe function, advantages and limitations of various hitches and configurations.

6. Describe procedures for placement, assembly, installation, removal and disassembly of rigging, hoisting and positioning equipment and components.

7. Interpret load charts, lift radius and boom length.

8. Describe procedures and sequence of inspection of rigging, hoisting and positioning equipment.

9. Identify types of knots, bends and hitches, and describe their characteristics and applications.

10. Describe procedures to splice wire, natural fibre and synthetic fibre ropes.
    i. back splice
    ii. side splice
    iii. short splice

11. Identify rolling and positioning equipment, and describe their characteristics, applications and procedures for use.

12. Identify attachment points and describe procedures to perform hoisting and positioning operations.

13. Describe procedures to determine load orientation.

**Practical Requirements:**

None

## IR2140 Crane Operations - Tower

**Learning Outcomes:**

- Demonstrate knowledge of tower cranes and equipment, their components, characteristics, applications and operation.
- Demonstrate knowledge of procedures to set up, rig and demobilize tower cranes and equipment and installation of their components.
- Demonstrate knowledge of regulatory requirements pertaining to setting up tower cranes and equipment and installation of their components.

**Duration:** 18 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify codes, standards and regulations pertaining to setting up, rigging and demobilizing tower cranes, equipment and components.

2. Identify hazards and describe safe work practices pertaining to setting up, rigging and demobilizing tower cranes, equipment and components.

3. Interpret information pertaining to tower cranes, equipment and components found in manufacturers' specifications, equipment manuals, load charts, range diagrams and engineered drawings.

4. Identify tools and equipment used to set up, rig and demobilize tower cranes, equipment and components and describe their procedures for use.

5. Identify tower cranes, equipment and components and describe their characteristics and applications.

6. Describe operating principles of tower cranes, equipment and components.

7. Describe procedures to set up, inspect and demobilize tower cranes, equipment and components.

**Practical Requirements:**

None

## IR2150 Onsite Fabrication

**Learning Outcomes:**

- Demonstrate knowledge of reinforcing materials, their characteristics and applications.
- Demonstrate knowledge of procedures to cut and bend reinforcing materials.
- Demonstrate knowledge of regulatory requirements pertaining to cutting reinforcing materials.

**Duration:** 30 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards and describe safe work practices and selection of PPE pertaining to cutting and bending reinforcing materials.

2. Identify codes, standards and regulations pertaining to cutting and bending reinforcing materials.

3. Interpret information pertaining to reinforcing materials found on drawings and engineering specifications.

4. Identify reinforcing materials and describe their characteristics and applications.
   i. stainless steel rebar
   ii. mild steel rebar
   iii. galvanized rebar
   iv. epoxy-coated rebar

5. Identify tools and equipment used to cut reinforcing materials and describe their procedures for use.

6. Describe procedures and calculations performed to measure and mark reinforcing materials.

7. Describe techniques to cut and bend reinforcing materials.

8. Describe procedures to dispose of and recycle reinforcing materials.

**Practical Requirements:**

None

## IR2160 Reinforcing Material Installation – Columns and Beams

**Learning Outcomes:**

- Demonstrate knowledge of reinforcing materials, their characteristics and applications.
- Demonstrate knowledge of procedures to place, tie and splice reinforcing materials and components.
- Demonstrate knowledge of regulatory requirements pertaining to placing reinforcing materials and components.
- Demonstrate knowledge of safety training, certification and regulatory requirements related to placing and tying reinforcing materials and components.

**Duration:** 42 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards, and describe safe work practices and selection of PPE pertaining to placing, tying and splicing reinforcing materials and components.

2. Identify codes, standards and regulations pertaining to placing, tying and splicing reinforcing materials and components.

3. Identify safety training, certification and regulatory requirements related to placing, tying and splicing reinforcing materials and components.

4. Describe splicing techniques, and their applications.
   i. welding
   ii. lap splicing
   iii. mechanical splicing
   iv. coupling
   v. non-contact splicing

5. Describe specialty splicing systems and their installation.

6. Describe sequence and procedures to place, tie and splice reinforcing materials.

7. Describe procedures to inspect tied reinforcing materials.

**Practical Requirements:**

1. Assemble and place a column.

## IR2180 Stressing

**Learning Outcomes:**

- Demonstrate knowledge of stressing equipment and components, their characteristics and applications.
- Demonstrate knowledge of regulatory requirements pertaining to setting up stressing equipment, cutting and capping tendons.
- Demonstrate knowledge of pre-stressed/post-tensioning systems, their materials, characteristics, applications and operation.
- Demonstrate knowledge of tendons, caps, their components, characteristics and applications.
- Demonstrate knowledge of procedures to set up stressing equipment, cut and cap tendons and remove stressing equipment.
- Demonstrate knowledge of industry training related to setting up stressing equipment, cutting and capping tendons and removing stressing equipment.

**Duration:** 24 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to stressing, cutting, capping and de-stressing tendons.

2. Identify codes, standards and regulations pertaining to setting up, stressing, cutting, capping and de-stressing tendons.

3. Interpret information found on placing drawings and manufacturers' specifications.
   i. stressing equipment
   ii. tensioning tendons
   iii. cutting and capping

4. Identify industry training requirements for setting up, stressing, cutting, capping and de-stressing tendons.

5. Identify types of stressing equipment and describe their characteristics and applications.

6. Identify tools and equipment used during and after stressing operations and describe their procedures for use.

7. Identify types of caps and describe their characteristics and applications.

8. Describe limitations and operating principles of stressing equipment.

9. Identify potential deficiencies of tendons and their components.

10. Describe procedures to stress, cut, cap and de-stress tendons.

11. Identify gauge pressures and elongation, and their related tolerances.

12. Describe tendon and anchoring locking methods.

13. Describe procedures to inspect and test stressed, cut and capped tendons and their components.

14. Describe procedures to dispose of and recycle materials when stressing, cutting and capping tendons.

**Practical Requirements:**

None

## IR2190 Grouting

**Learning Outcomes:**

- Demonstrate knowledge of grout, grouting equipment and components, their characteristics, applications and operation.
- Demonstrate knowledge of environmental and regulatory requirements pertaining to setting up grouting equipment and installing grout.
- Demonstrate knowledge of industry training related to setting up grouting equipment and installing grout.
- Demonstrate knowledge of procedures to set up grouting equipment and their components and install grout.

**Duration:** 12 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify hazards and describe safe work practices pertaining to grouting equipment and installing grout.

2. Identify codes, standards and regulations pertaining to grouting equipment and installing grout.

3. Interpret information pertaining to grouting equipment found on placing drawings and manufacturers' specifications.

4. Identify industry training and certification requirements to set up grouting equipment and installing grout.

5. Identify tools and equipment used with grouting and describe their procedures for use.

6. Identify types of grouting equipment and components and describe their characteristics and applications.

7. Describe operating principles of grouting equipment and their components.

8. Describe procedures to set up grouting equipment and their components.

9. Describe procedures to inspect the setup of grouting equipment and their components.

10. Describe procedures to test systems and grouting equipment.

11. Describe procedures related to grouting.
    i. measure quantities and ratios
    ii. sequencing of mixing
    iii. install grout
    iv. inspect installed grout
    v. test installed grout
    vi. clean and maintain grouting tools and equipment
    vii. dispose of grout

**Practical Requirements:**

None

## IR2200 Program Review

**Learning Outcomes:**

- Demonstrate knowledge of the Red Seal Occupational Standard (RSOS) and its relationship to the Red Seal examination.
- Demonstrate knowledge of overall comprehension of the trade in preparation for the Red Seal examination.

**Duration:** 30 Hours

**Pre-Requisite(s):** Level 1

**Theoretical Objectives:**

1. Define terminology associated with an RSOS.
   i. major work activities
   ii. tasks
   iii. sub-tasks

2. Describe how an RSOS is developed and the link it has with the Red Seal examination.
   i. development
   ii. validation
   iii. level and task weighting
   iv. examination breakdown (pie-chart)

3. Identify Red Seal products and describe their use for preparing for the Red Seal eexamination.
   i. Red Seal website
   ii. examination preparation guide
   iii. sample questions
   iv. examination counselling sheets

4. Describe the relationship between the RSOS and the Plan of Training.

5. Review Common Occupational Skills as identified in the RSOS.
   i. maintaining safe and healthy workplaces
   ii. using and maintaining tools and equipment
   iii. organizing work tasks
   iv. maintaining continuous learning
   v. using communication and mentoring techniques

6. Review process to perform rigging, hoisting and positioning as identified in the RSOS.
   i. planning lift
   ii. rigging, hoisting and positioning load
   iii. performing post-lift activities

7. Review process to mobilize and demobilize cranes and equipment as identified in the RSOS.

8. Review process to fabricate and install reinforcing material as identified in the RSOS.

9. Review process to perform pre-stressing and post-tensioning as identified in the RSOS.
   i. placing pre-stressed/post-tensioning systems
   ii. stressing tendons
   iii. grouting tendons

**Practical Objectives:**

None

## MENT701 Mentoring II

**Learning Outcomes:**

- Demonstrate knowledge of effective communication practices as a mentor.
- Demonstrate knowledge of strategies for teaching workplace skills.

**Duration:** 6 Hours

**Pre-Requisite(s):** Level 1

**Objectives and Content:**

1. Identify the different roles played by a workplace mentor.

2. Identify strategies to create a supportive learning environment.

3. Identify techniques for effective communication as a mentor.
   i. constructive feedback
   ii. active listening
   iii. leading meetings and one-on-one sessions

4. Describe the steps in teaching a skill.
   i. identifying the point of lesson
   ii. linking the lesson
   iii. demonstrating the skill
   iv. providing practice
   v. giving feedback
   vi. assessing skill and progress

5. Identify strategies to assist in teaching a skill while meeting individual learning needs.
   i. principles of instruction
   ii. coaching skills

6. Explain how to adjust a lesson for various situations.

**Practical Requirements:**

None

# C. Conditions Governing Apprenticeship Training

## 1.0 General

The following general conditions apply to all apprenticeship training programs approved by the Provincial Apprenticeship and Certification Board (PACB) in accordance with the Apprenticeship Training and Certification Act (1999). If an occupation requires additional conditions, these will be noted in the specific Plan of Training for the occupation. In no case should there be a conflict between these conditions and the additional requirements specified in a certain Plan of Training. All references to Memorandum of Understanding will also apply to Letter of Understanding (LOU) agreements.

## 2.0 Entrance Requirements

2.1 Entry into the occupation as an apprentice requires:

Indenturing into the occupation by an employer who agrees to provide the appropriate training and work experiences as outlined in the Plan of Training.

2.2 Notwithstanding the above, each candidate must have successfully completed a high school program or equivalent, and in addition may be required to have completed certain academic subjects as specified in a particular Plan of Training. Mature students, at the discretion of the Director of Apprenticeship and Trades Certification, may be registered. A mature student is defined as one who has reached the age of 19 and who can demonstrate the ability and the interest to complete the requirements for certification.

2.3 At the discretion of the Director of Apprenticeship and Trades Certification, credit toward the apprenticeship program may be awarded to an apprentice for previous work experience and/or training as validated through prior learning assessment.

2.4 An Application for Apprenticeship form must be duly completed along with a Memorandum of Understanding as applicable to be indentured into an Apprenticeship. The Memorandum of Understanding must contain signatures of an authorized employer representative, the apprentice and an official representing the Provincial Apprenticeship and Certification Board to be valid.

2.5 A new Memorandum of Understanding must be completed for each change in an employer during the apprenticeship term.

## 3.0 Probationary Period

The probationary period for each Memorandum of Understanding will be six months or 900 employment credit hours. Within that period the memorandum may be terminated by either party upon giving the other party and the PACB one week notice in writing.

## 4.0 Termination of a Memorandum of Understanding

After the probationary period referred to in Section 3.0, the Memorandum of Understanding may be terminated by the PACB by mutual consent of the parties involved or cancelled by the PACB for proper and sufficient cause in the opinion of the PACB, such as that stated in Section 14.

## 5.0 Apprenticeship Progression Schedule, Wage Rates and Advanced Training Criteria

## Progression Schedule

| Ironworker (Reinforcing) - 3600 Hours | | | |
|---|---|---|---|
| Apprenticeship Level and Wages | | | |
| Level | Wage Rate | Requirements for Progression to Next Level | Next Level |
| 1st | 60 % | ▪ Completion of Level 1 training<br>▪ Registration as an apprentice<br>▪ Pass Level 1 exam*<br>▪ Minimum 1800 hours of combined relevant work experience and training | 2nd Year |
| 2nd | 90% | ▪ Completion of Level 2 training<br>▪ Pass Level 2 exam*<br>▪ Minimum 3600 hours of combined relevant work experience and training<br>▪ Sign-off of all workplace skills in apprentice logbook<br>▪ Pass certification exam | Journeyperson Certification |

Wage Rates

- Rates are percentages of the prevailing journeyperson's wage rate in the place of employment of the apprentice.
- Rates must not be less than the wage rate established by the Labour Standards Act (1990), as now in force or as hereafter amended, or by other order, as amended from time to time replacing the first mentioned order.
- Rates must not be less than the wage rate established by any collective agreement which may be in force at the apprentice's workplace.
- Employers are free to pay wage rates above the minimums specified.

*Level Exams

- This program may not currently contain level exams, in which case this requirement will be waived until such time as level exams are available.

| Ironworker (Reinforcing) - 3600 Hours | | |
|---|---|---|
| Class Calls (After Apprenticeship Registration) | | |
| Call Level | Requirements for Class Call | Hours Awarded for In-School Training |
| Direct Entry Level 1 | ▪ Minimum of 1800 hours of relevant work experience<br>▪ Prior Learning Assessment (PLA) at designated college (if applicable) | 360 |
| Level 2 | ▪ Minimum of 3300 hours of relevant work experience and training | 300 |
| Class calls at Minimum Hours<br>▪ Class calls may not always occur at the minimum hours indicated. Some variation is permitted to allow for the availability of training resources and apprentices. | | |

## 6.0 Tools

Apprentices shall be required to obtain their own hand tools applicable for the designated occupation of registration or tools as specified by the PACB.

## 7.0 Periodic Examinations and Evaluation

7.1 Every apprentice shall submit to such occupational tests and examinations as the PACB shall direct. If after such occupational tests and examinations the apprentice is found to be making unsatisfactory progress, his/her apprenticeship level and rate of wage shall not be advanced as provided in Section 5 until his/her progress is satisfactory to the Director of Apprenticeship and Trades Certification and his/her date of completion shall be deferred accordingly. Persistent failure to pass required tests shall be a cause for revocation of his/her Memorandum of Understanding.

7.2 Upon receipt of reports of accelerated progress of the apprentice, the PACB may shorten the term of apprenticeship and advance the date of completion accordingly.

7.3 For each and every course, a formal assessment is required for which 70% is the pass mark. A mark of 70% must be attained in both the theory examination and the practical project assignment, where applicable as documented on an official transcript.

7.4 Course credits may be granted through the use of a PACB approved matrix which identifies course equivalencies between designated trades and between current and historical Plans of Training for the same trade.

## 8.0 Granting of Certificates of Apprenticeship

Upon the successful completion of apprenticeship, the PACB shall issue a Certificate of Apprenticeship.

## 9.0 Hours of Work

Any hours employed in the performance of duties related to the designated occupation will be credited towards the completion of the term of apprenticeship. Appropriate documentation of these hours must be provided.

## 10.0 Copies of the Registration for Apprenticeship

The Director of Apprenticeship and Trades Certification shall provide copies of the Registration for Apprenticeship form to all signatories to the document.

## 11.0 Ratio of Apprentices to Journeypersons

Under normal practice, the ratio of apprentices to journeypersons shall not exceed two apprentices to every one journeyperson employed. Other ratio arrangements would be determined and approved by the PACB.

## 12.0 Relationship to a Collective Bargaining Agreement

Where applicable in Section 5 of these conditions, Collective Agreements take precedence.

## 13.0 Amendments to a Plan of Apprenticeship Training

A Plan of Training may be amended at any time by the PACB.

## 14.0 Employment, Re-Employment and Training Requirements

14.1 The Plan of Training requires apprentices to regularly attend their place of employment.

14.2 The Plan of Training requires apprentices to attend training for that occupation as prescribed by the PACB.

14.3 Failure to comply with Sections 14.1 and/or 14.2 will result in cancellation of the Memorandum of Understanding. Apprentices may have their MOUs reinstated by the PACB but would be subject to a commitment to complete the entire program as outlined in the General Conditions of Apprenticeship. Permanent cancellation in the said occupation is the result of non-compliance.

14.4 Cancellation of the Memorandum of Understanding to challenge journeyperson examinations, if unsuccessful, would require an apprentice to serve a time penalty of two (2) years before reinstatement as an apprentice or qualifying to receive a class call to training as a registered Trade Qualifier. Cancellation must be mutually agreed upon by the employer and the apprentice.

14.5 An employer shall ensure that each apprentice is under the direct supervision of an approved journeyperson supervisor who is located at the same worksite as the apprentice, and that the apprentice is able to communicate with the journeyperson with respect to the task, activity or function that is being supervised.

14.6 Under the Plan of Training the employer is required to keep each apprentice employed as long as work is available, and if the apprentice is laid off due to lack of work, to give first opportunity to be hired before another is hired.

14.7 The employer will permit each apprentice to attend training programs as prescribed by the PACB.

14.8 Apprentices who cannot acquire all the workplace skills at their place of employment will have to be evaluated in a simulated work environment at a PACB authorized training institution and have sign-off done by instructors to meet the requirements for certification.

## 15.0 Appeals to Decisions Based on Conditions Governing Apprenticeship Training

Persons wishing to appeal any decisions based on the above conditions must do so in writing to the Minister of Education and Early Childhood Development within 30 days of the decision.

## D. Requirements for Red Seal Endorsement

1. Evidence the required work experiences outlined in this Plan of Training have been obtained. This evidence must be in a format clearly outlining the experiences and must be signed by an appropriate person or persons attesting that these experiences have been obtained to the level required.

2. Successful completion of all required courses in the program.

3. A combination of training from an approved training program and suitable work experience totaling 3600 hours.

   **Or**

   A total of 5400 hours of suitable work experience.

4. Completion of a National Red Seal examination, to be set at a place and time determined by the Apprenticeship and Trades Certification Division.

## E. Roles and Responsibilities of Stakeholders in the Apprenticeship Process

The apprenticeship process involves a number of stakeholders playing significant roles in the training of apprentices. This section outlines these roles and the responsibilities resulting from them.

### The Apprentice:

- completes all required technical training courses as approved by the PACB.
- finds appropriate employment.
- completes all required work experiences in combination with the required hours.
- ensures work experiences are well documented.
- approaches apprenticeship training with an attitude and commitment that fosters the qualities necessary for a successful career as a qualified journeyperson.
- obtains the required hand tools as specified by the PACB for each period of training of the apprenticeship program.

### The Employer:

- provides high quality work experiences in an environment conducive to learning.
- remunerates apprentices as set out in the Plan of Training or Collective Agreements.
- provides feedback to training institutions, Apprenticeship and Trades Certification Division and apprentices in an effort to establish a process of continuous quality improvement.
- where appropriate, releases apprentices for the purpose of returning to a training institution to complete the necessary technical courses.
- ensures work experiences of the apprentice are documented.
- ensures a certified journeyperson is currently on staff in the same trade area as the apprentice and whose certification is recognized by the NL Department of Education and Early Childhood Development.

## The Training Institution:

- provides a high-quality learning environment.
- provides the necessary student support services that will enhance an apprentice's ability to be successful.
- participates with other stakeholders in the continual updating of programs.

## The Apprenticeship and Trades Certification Division:

- establishes and maintains program advisory committees under the direction of the PACB.
- promotes apprenticeship training as a viable career option to prospective apprentices and other appropriate persons involved, such as career guidance counsellors, teachers, parents, etc.
- establishes and maintains a protocol with training institutions, employers and other appropriate stakeholders to ensure the quality of apprenticeship training programs.
- ensures all apprentices are appropriately registered and records are maintained as required.
- schedules all necessary technical training periods for apprentices to complete requirements for certification.
- administers provincial and Red Seal examinations.

## The Provincial Apprenticeship and Certification Board:

- sets policies to ensure the provisions of the *Apprenticeship and Certification Act (1999)* are implemented.
- ensures advisory and examination committees are established and maintained.
- accredits institutions to deliver apprenticeship training programs.
- designates occupations for apprenticeship training and/or certification.

Department of Education and Early Childhood Development
Apprenticeship and Trades Certification Division

Newfoundland & Labrador