Pre-Employment Plan of Training

Insulator

April 2021

Newfoundland & Labrador

PLAN OF TRAINING

Pre-Employment

Insulator

April, 2021

Government of Newfoundland and Labrador
Department of Immigration, Population Growth and Skills
Apprenticeship and Trades Certification Division

Approved by:

Chairperson, Provincial Apprenticeship and Certification Board

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Preface

This curriculum standard is aligned with the 2020 Level 1 Atlantic Apprenticeship Curriculum Standard (AACS) and the 2018 edition of the Red Seal Occupational Standard (RSOS) for the Insulator (Heat and Frost) trade. It describes the curriculum content for the Insulator (Heat and Frost) Pre-employment training program.

Acknowledgements

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We offer a sincere thank you.

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Document Status	Date Approved	Mandatory Implementation Dates	Comments
New	March 2019	September 2019 - Pre-Employment	Aligns with 2018 RSOS and National Harmonization sequencing
		January 2020 - Level 2	
		September 2021 - Level 3	
		September 2022 - Level 4	
Updated	March 2021	September 2021 - Pre-Employment	Addition of INS-180 Hot Work course to align with the AACS

Table of Contents

A. RSOS Comparison Chart

A Red Seal Occupational Standard (RSOS) comparison chart is located in the Atlantic Apprenticeship Curriculum Standard (AACS).

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 as documented on an official transcript.

The order of course delivery within each block can be determined by the training institution, as long as pre-requisite conditions are satisfied.

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

A Pre-employment student who becomes an apprentice will also be required to complete Levels 2, 3 & 4 in the AACS.

Pre-Employment			
Course No.	**Course Name**	**Hours**	**Pre-Requisite(s)**
TS1510	Occupational Health and Safety	6	None
TS1520	WHIMIS	6	None
TS1530	Standard First Aid	14	None
HF1121	Safety	12	None
HF1103	Tools and Equipment	12	HF1121
HF1130	Work Scheduling and Materials	18	HF1121
HF1140	Trade Practices	18	HF1121 AM1101 AM1201
HF1160	Industrial Applications (Preparation)	18	HF1121
HF1222	Piping and Fitting Insulation I	12	HF1121
HF1170	Commercial Applications (Preparation)	24	HF1121 AM1101 AM1201
HF1180	Plumbing and Mechanical Piping System Insulation I	90	HF1121 AM1101 AM1201
HF1190	Fire Stop System Installation I	24	HF1121
HF1430	Fireproofing Installation I	18	HF1121

Pre-Employment			
Course No.	**Course Name**	**Hours**	**Pre-Requisite(s)**
HF1256	Asbestos Abatement (Preparation)	12	HF1121
HF1440	Asbestos Removal	12	HF1121
HF1450	Asbestos Maintenance and Repair	12	HF1121
HF1460	Lead Abatement and Mould Remediation	18	HF1121
INS-180	Hot Work	18	None
HF1271	Blueprints I	24	HF1103 AM1201
AM1000	Introduction to Essential Skills	9	None
AP1102	Introduction to Apprenticeship	12	None
AM1101	Math Essentials	42	None
AM1201	Insulator Math Fundamentals	42	AM1101
CM2161	Communication Essentials	36	None
SD1761	Workplace Essentials	24	None
MC1062	Computer Essentials	15	None
	Total Pre-Employment Hours	**548**	

*A student who can meet the mathematics requirement through an ACUPLACER® test may be exempted from AM1101 - Math Essentials. Please check with your training institution.

Required Work Experience

TS1510 Occupational Health and Safety

Learning Outcomes:

- Demonstrate knowledge of interpreting the Occupational Health and Safety Act, laws and regulations.
- Demonstrate knowledge of understanding the designated responsibilities within the laws and regulations such as the right to refuse dangerous work; and the importance of reporting accidents.
- Demonstrate knowledge of how to prevent accidents and illnesses.
- Demonstrate knowledge of how to improve health and safety conditions in the workplace.

Duration: 6 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Interpret the Occupational Health and Safety Act laws and regulations.
   - i. explain the scope of the act
     - application of the Act
     - Federal/Provincial jurisdictions
     - Canada Labour Code
     - rules and regulations
     - private home application
     - conformity of the Crown by the Act

2. Explain responsibilities under the Act and Regulations.
   - i. duties of employer, owner, contractors, sub-contractors, employees, and suppliers

3. Explain the purpose of joint health and safety committees.
   - i. formation of committee
   - ii. functions of committee
   - iii. legislated rights
     health and safety representation
   - iv. reporting endangerment to health
   - v. appropriate remedial action
   - vi. investigation of endangerment
   - vii. committee recommendation
   - viii. employer’s responsibility in taking remedial action

4. Examine right to refuse dangerous work.
   i. reasonable grounds for refusal
   ii. reporting endangerment to health
   iii. appropriate remedial action
   iv. investigation of endangerment
   v. committee recommendation
   vi. employer's responsibility to take appropriate remedial action
   vii. action taken when employee does not have reasonable grounds for refusing dangerous work
   viii. employee's rights
   ix. assigning another employee to perform duties
   x. temporary reassignment of employee to perform other duties
   xi. collective agreement influences
   xii. wages and benefits

5. State examples of work situations where one might refuse work.

6. Describe discriminatory action.
   i. definition
   ii. filing a complaint procedure
   iii. allocated period of time a complaint can be filed with the Commission
   iv. duties of an arbitrator under the Labour Relations Act
   v. order in writing inclusion
   vi. report to commission allocated period of time to request arbitrator to deal with the matter of the request
   vii. notice of application
   viii. failure to comply with the terms of an order
   ix. order filed in as the court

7. Explain duties of commission officers.
   i. powers and duties of officers
   ii. procedure for examinations and inspections
   iii. orders given by officers orally or in writing
   iv. specifications of an order given by an officer to owner of the place of employment, employer, contractor, sub-contractor, employee, or supplier
   v. service of an order
   vi. prohibition of persons towards an officer in the exercise of his/her power or duties
   vii. rescinding of an order
   viii. posting a copy of the order
   ix. illegal removal of an order

8. Interpret appeals of others.
   i. allocated period of time for appeal of an order
   ii. person who may appeal order
   iii. action taken by commission when person involved does not comply with the order
   iv. enforcement of the order
   v. notice of application
   vi. rules of court

9. Explain the process for reporting of accidents.
   i. application of act
   ii. report procedure
   iii. reporting notification of injury
   iv. reporting accidental explosion or exposure
   v. posting of act and regulations

Practical Requirements:

1. Conduct an interview with someone in your occupation on two or more aspects of the act and report results.

2. Conduct a safety inspection of shop area.

TS1520 Workplace Hazardous Materials Information System (WHMIS)

Learning Outcomes:

- Demonstrate knowledge of interpreting and applying the Workplace Hazardous Materials Information System (WHMIS) regulation under the Occupational Health and Safety Act.

Duration: 6 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Define WHMIS safety.
   - i. rational and key elements
   - ii. history and development of WHIMIS
   - iii. WHMIS legislation
   - iv. WHMIS implementation program
   - v. definitions of legal and technical terms

2. Examine hazard identification and ingredient disclosure.
   - i. prohibited, restricted and controlled products
   - ii. classification and the application of WHMIS information requirements
   - iii. responsibilities for classification
     - the supplier
     - the employer
     - the worker - Classification: rules and criteria
     - information on classification
     - classes, divisions and subdivision in WHMIS
     - general rules for classification
     - class A - compressed gases
     - class B - flammable and combustible materials
     - class C - oxidizing material
     - class D - poisonous and infectious material
     - class E - corrosive material
     - class F - dangerously reactive material
   - iv. products excluded from the application of WHMIS legislation
     - consumer products
     - explosives
     - cosmetics, drugs, foods and devices
     - pest control products
     - radioactive prescribed substances
     - wood or products made of wood

- manufactured articles
- tobacco or products of tobacco
- hazardous wastes
- products handled or transported pursuant to the Transportation of Dangerous Goods (TDG) Act

v. comparison of classification systems – WHMIS and TDG
vi. general comparison of classification categories
vii. detailed comparison of classified criteria

3. Explain labeling and other forms of warning.
   i. definition of a WHMIS label
      - supplier label
      - workplace label
      - other means of identification
   ii. responsibility for labels
      - supplier responsibility
      - employer responsibility
      - worker responsibility
   iii. introduce label content, design and location
      - supplier labels
      - workplace labels
      - other means of identification
4. Introduce material safety data sheets (MSDS).
   i. definition of a material safety data sheet
   ii. purpose of the data sheet
   iii. responsibility for the production and availability of data sheets
      - supplier responsibility
      - employer responsibility
      - workers responsibility

Practical Requirements:

1. Locate WHMIS label and interpret the information displayed.

2. Locate a MSDS sheet for a product used in the workplace and determine what personal protective equipment and other precautions are required when handling this product.

TS1530 Standard First Aid

Learning Outcomes:

- Demonstrate knowledge of recognizing situations requiring emergency action
- Demonstrate knowledge of making appropriate decisions concerning first aid

Duration: 14 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Complete a **St. John Ambulance or Canadian Red Cross** Standard First Aid Certificate course.

HF1121 Safety

Learning Outcomes:

- Demonstrate knowledge of PPE and safety equipment, their applications, and procedures for use.
- Demonstrate knowledge of safe work practices.
- Demonstrate knowledge of regulations pertaining to PPE and safety equipment.
- Demonstrate knowledge of regulations pertaining to safety.

Duration: 12 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Identify types of personal protective equipment (PPE) and describe their applications, and procedures for use.
   i. eye protection
   ii. gloves
   iii. boots
   iv. respirators
   v. hearing protection
   vi. fall protection equipment
   vii. hard hats
   viii. wristlets
   ix. coveralls

2. Identify types of safety equipment and describe their applications and procedures for use.
   i. warning tapes
   ii. first aid kits
   iii. eye wash stations
   iv. fire extinguishers

3. Identify the procedures used to inspect, maintain and store PPE and safety equipment.

4. Identify jurisdictional health and safety acts and regulations pertaining to PPE and safety equipment.

5. Identify hazards and describe safe work practices.
   i. pinch points
   ii. tripping hazards
   iii. chemical hazards
   iv. electric shock hazards
   v. burn hazards
   vi. noise hazards
   vii. height hazards
   viii. respiratory hazards
   ix. environmental hazards

6. Identify company policies and procedures pertaining to safe work practices.
   i. evacuation routes
   ii. muster stations
   iii. warning signals
   iv. incident procedures
   v. emergency phone numbers
   vi. location of safety equipment
   vii. lock-out procedures

7. Describe safety watch requirements.
   i. fire watch
   ii. man watch
   iii. bottle watch

8. Identify company or site-specific safety training requirements.
   i. fall protection
   ii. confined space entry
   iii. asbestos awareness
   iv. Workplace Hazardous Materials Information System (WHMIS)
   v. H2S awareness
   vi. rigging and hoisting
   vii. lift training
   viii. lock-out procedures

9. Describe housekeeping practices related to safe work practices.

10. Identify required work permits.
   i. confined space
   ii. hot work
   iii. safe work
   iv. cold work
   v. blanket (general access)

11. Identify and implement jurisdictional health and safety acts and regulations pertaining to safe work practices.

Practical Requirements:

1. Tie a knot using basic rigging applications to lift materials safely.

HF1103 Tools and Equipment

Learning Outcomes:

- Demonstrate knowledge of tools and equipment, their applications, maintenance and procedures for use.
- Demonstrate knowledge of access equipment, their applications, maintenance and procedures for use.

Duration: 12 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify types of tools and equipment, and describe their application and procedures for use.
   - i. specialty hand tools
     - band tensioners
     - band crimpers
   - ii. standard power tools
     - electric shears
     - drills
     - electric saws
   - iii. specialty power tools
     - High Efficiency Particulate Air Filter (HEPA) vacuums
     - sewing machines
     - stud guns
     - pin welders
     - negative air machines
   - iv. layout tools
     - dividers
     - squares
     - straight edges
     - tape measures
     - circumference rulers
     - scratch awls
   - v. fabrication tools
     - lockformers
     - brakes
     - combination machines (beaders/crimpers)
     - tin snips

2. Identify hazards and describe safe work practices pertaining to the use of tools and equipment.

3. Identify types of access equipment, and describe their application and procedures for use.
   i. step ladders
   ii. extension ladders
   iii. aerial platforms
   iv. scissor lifts
   v. crane baskets
   vi. scaffolding
   vii. rope access equipment

4. Identify hazards and describe safe work practices pertaining to the use of access equipment.

5. Identify and interpret codes and regulations pertaining to the use of access equipment.

6. Describe the procedures used to inspect and maintain access equipment.

7. Identify jurisdictional regulations, limitations and training requirements for access equipment.

8. Describe the procedures used to erect, level and dismantle scaffolding.

9. Describe the procedures used to store and secure access equipment.

Practical Requirements:

1. Use and maintain various types of hand and power tools.

HF1130 Work Scheduling and Materials

Learning Outcomes:

- Demonstrate knowledge of the procedures to plan and schedule tasks.
- Demonstrate knowledge of procedures used to organize materials on site.

Duration: 18 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify factors to consider when planning and scheduling daily tasks.
   i. project requirements
   ii. safety considerations
   iii. field-level risk assessments
   iv. contractors' requirements
   v. environmental conditions
   vi. work in progress (WIP) log

2. Identify sequence of task activities.

3. Describe procedures for coordinating work tasks with other trades.

4. Identify work order, work release and safe work permit procedures.

5. Identify types, sizes and amounts of materials required for each project.

6. Identify designated areas for storage of materials.

7. Identify designated areas for disposal of waste materials.

8. Identify factors to consider for storing materials and describe storage procedures.
   i. requirements of daily tasks
   ii. environmental factors
   iii. sequence of retrieval
   iv. weight

9. Describe procedures used to secure materials.

10. Describe procedures used to dispose of waste materials.

Practical Requirements:

None.

HF1140 Trade Practices

Learning Outcomes:

- Demonstrate knowledge of measurements and calculations.
- Demonstrate knowledge of substrates and the procedures used to prepare them for installation of insulation.

Duration: 18 Hours

Pre-Requisite(s): HF1121, AM1101, AM1201

Objectives and Content:

1. Identify mathematical formulas (surface area, volume, circumference, diameter, radius) for calculating dimensions of components.
   i. insulation
   ii. protective finishes
   iii. cladding/jacketing
   iv. removable covers
   v. insulation blankets

2. Identify imperial and metric systems and the conversion from one to the other.

3. Identify types of substrate material, and the methods used to prepare them.
   i. steel
   ii. copper
   iii. galvanized metal
   iv. iron
   v. stainless steel
   vi. glass
   vii. plastic
   viii. fiberglass
   ix. aluminum

4. Identify compatibility of insulating material and substrate based on factors.
   i. temperature ranges
   ii. age
   iii. environment
   iv. oxidization
   v. chemical corrosion

5. Identify types of protrusions, penetrations and irregularities in the substrate.

6. Describe substrate preparation techniques for installation of insulation.

Practical Requirements:

None.

HF1160 Industrial Applications (Preparation)

Learning Outcomes:

- Demonstrate knowledge of material selection for industrial applications.
- Demonstrate knowledge of layout procedures for industrial applications.

Duration: 18 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify types of materials, their application and procedures for use.

2. Locate information pertaining to materials in drawings or specifications.

3. Identify the factors to consider for selecting cladding.
   i. reaction to the environment and other materials that are in contact with the cladding
   ii. finished size of insulation
   iii. specifications

4. Identify layout tools and their procedures for use.
   i. dividers
   ii. squares
   iii. tape measures
   iv. calculators
   v. scratch awls
   vi. markers
   vii. trammel points

5. Explain calculation used to develop a layout.
   i. gores
   ii. head segments
   iii. transitions
   iv. tees
   v. flashing
   vi. end caps

6. Describe procedures used to perform a layout for industrial applications.

Practical Requirements:

1. Fabricate miters, equal tees and end caps/bevels.

HF1222 Piping and Fitting Insulation I

Learning Outcomes:

- Demonstrate knowledge of procedures used to install insulation on piping, fittings and hangers.
- Demonstrate knowledge of vapour barriers, their application and the procedures used for installation.

Duration: 12 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify types of piping, fitting and hangers and application of pipe insulation.
   - i. piping
     - stainless
     - copper
     - iron
     - plastic
     - fiberglass
   - ii. fittings
     - valves
     - tees
     - transitions
     - elbows
   - iii. hangers
     - shoes
     - sleeves
     - clevises
   - iv. application of pipe insulation
     - fiberglass
     - calcium silicate
     - cellular glass
     - urethane
     - mineral fibre
     - elastomeric foam

2. Identify specifications and describe their application to the installation of insulation.
   i. scope of work
   ii. operating temperature
   iii. insulation thickness
   iv. requirements

3. Describe the results of poor fitting pipe insulation.
   i. energy loss
   ii. frost build up
   iii. personal injury (burns from excess heat or frost)

4. Describe insulation application techniques.

5. Identify fastening devices and techniques.

6. Describe expansion and contraction joint fabrication.

7. Describe the procedures used to install insulation on piping, fittings and hangers.

8. Identify types of vapour barriers and describe their characteristics and applications.

9. Describe the importance of vapour barriers on piping and fittings.

10. Identify types of adhesives and their applications.

11. Describe the procedures used to install vapour barriers on piping and fittings.

12. Identify the hazards and the use of aerogels, pyrogels and cryogels.

Practical Requirements:

None.

HF1170 Commercial Applications (Preparation)

Learning Outcomes:

- Demonstrate knowledge of material selection for commercial applications.
- Demonstrate knowledge of procedures used to lay out materials for commercial applications.

Duration: 24 Hours

Pre-Requisite(s): HF1121, AM1101, AM1201

Objectives and Content:

1. Identify types of insulation, their commercial applications and procedures for use.
   - i. preformed pipe covering
   - ii. fiberglass
     - rigid board
     - flexible blankets / batts
   - iii. mineral fibre
   - iv. elastomeric foam
   - v. insulation cement

2. Identify types of cladding, jacketing and finishes, their commercial applications and procedures for use.
   - i. PVC
   - ii. stainless steel
   - iii. aluminum
   - iv. canvas
   - v. weatherproof membranes

3. Identify types of vapour barriers, their commercial applications and describe their importance and procedures for use.
   - i. RFFRK
   - ii. FSK facing
   - iii. Mastics
   - iv. ASJ
   - v. membrane barriers
   - vi. films

4. Identify hazards of materials and locations as they pertain to selecting materials for commercial applications.
   i. insulation
   ii. cladding, jacketing and finishes
   iii. fittings
   iv. vapour barriers
   v. soundproofing materials
   vi. fasteners
   vii. sealants

5. Apply basic geometry related to material selection for commercial applications.

6. Identify materials to be laid out for commercial applications.

7. Apply basic geometry related to layout of materials for commercial applications.

8. Describe procedures used to develop patterns for components.
   i. tees
   ii. valves
   iii. elbows
   iv. laterals
   v. square to round
   vi. gores
   vii. reducers

9. Describe procedures used to lay out materials for commercial applications.

Practical Requirements:

1. Apply various types of insulation, mastic and finishings for commercial application.

HF1180 Plumbing and Mechanical Piping System Insulation I

Learning Outcomes:

- Demonstrate knowledge of procedures used to install insulation on plumbing and mechanical piping systems.
- Demonstrate knowledge of vapour barriers, their characteristics and applications and the procedures used for installation.

Duration: 90 Hours

Pre-Requisite(s): HF1121, AM1101, AM1201

Objectives and Content:

1. Identify plumbing systems, their characteristics and insulation requirements.
   i. hot
   ii. cold
   iii. recirculation water
   iv. rainwater leaders
   v. vent piping
   vi. sanitary drains

2. Identify mechanical piping systems, their characteristics and insulation requirements.
   i. heating
   ii. chilled water
   iii. refrigeration
   iv. glycol

3. Identify pre-formed products, their application and procedures for use.

4. Identify fastening devices and techniques.

5. Describe the procedures used to install insulation on plumbing and mechanical piping.

6. Identify types of vapour barriers and describe their characteristics and applications.
   i. ASJ
   ii. RFFRK
   iii. MLV
   iv. mastics

7. Describe the importance of vapour barriers on plumbing and mechanical piping systems.

8. Describe the procedures used to install vapour barriers on plumbing and mechanical piping systems.

9. Identify types of adhesives and their applications.

Practical Requirements:

1. Insulate pipe and various fittings using fibreglass insulation.

2. Insulate pipe and various fittings using mineral wool.

HF1190 Fire Stop System Installation I

Learning Outcomes:

- Demonstrate knowledge of fire stop systems for architectural, structural, mechanical and electrical components (introduction).
- Demonstrate knowledge of applying fire stop materials to architectural, structural, mechanical, and electrical components (introduction).

Duration: 24 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Describe purpose and reasons for different types of fire stop applications.

2. Identify regulations pertaining to fire stop system installation.

3. Identify types of fire stop materials used in fire stop systems.
   i. caulking
   ii. wrap strips
   iii. intumescent boards and collars
   iv. bricks
   v. pillows
   vi. putty
   vii. mortar
   viii. mineral fiber
   ix. foams
   x. cement

4. Calculate material requirements for fire stop systems.

5. Describe fire stop installation material application techniques.

6. Identify types of cutting tools used to cut materials in fire stop installation.
   i. saws
   ii. snips
   iii. knives

7. Identify types of tools used to fasten materials for fire stop system installation.
   i. band tensioners
   ii. powder-actuated tools
   iii. drills
   iv. pin welders
   v. caulking guns
   vi. trowels

Practical Requirements:

1. Apply firestopping materials to penetrations.
   i. piping
   ii. floor and ceiling

HF1430 Fireproofing Installation I

Learning Outcomes:

- Demonstrate knowledge of applying fireproofing to architectural, structural, mechanical and electrical components.

Duration: 18 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify types of materials used in fireproof systems.

2. Describe material application techniques for fireproofing installation.

3. Identify types of cutting tools used to cut materials for fireproofing installation.
   i. saws
   ii. snips
   iii. knives

4. Identify types of tools used to fasten materials for fireproofing installation.
   i. band tensioners
   ii. powder-actuated tools
   iii. drills
   iv. pin welders

Practical Requirements:

None.

HF1256 Asbestos Abatement (Preparation)

Learning Outcomes:

- Demonstrate knowledge of PPE used for asbestos abatement, their applications and procedures for use.
- Demonstrate knowledge of regulations pertaining to asbestos abatement.
- Demonstrate knowledge of retrieving sample of asbestos.
- Demonstrate knowledge of determining scope of work required for asbestos abatement.
- Demonstrate knowledge of preparing site for removal and containment of asbestos.
- Demonstrate knowledge of regulations pertaining to the removal and containment of asbestos.

Duration: 12 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify classifications of asbestos abatement.
   i. type I
   ii. type II
   iii. type III
   iv. low
   v. moderate
   vi. high

2. Identify types of PPE used for asbestos abatement.
   i. respirators
   ii. disposable coveralls
   iii. gloves
   iv. disposable booties
   v. eye protection

3. Describe applications and limitations of PPE used for asbestos abatement.

4. Identify decontamination requirements for PPE used with asbestos abatement.

5. Identify storage, cleaning and maintenance for PPE.

6. Identify and interpret the health and safety regulations and responsibilities with respect to asbestos abatement.
   i. Occupational Health and Safety (OH&S)
   ii. WHIMIS
   iii. jurisdictional

7. Identify and interpret the health and safety regulations and responsibilities with respect to the use of PPE for asbestos abatement.

8. Identify materials used for temporary enclosures.
   i. studs and polyethylene
   ii. control cubes

9. Identify types of temporary enclosures.

10. Identify types of containment devices for asbestos samples.

11. Identify sampling information required to document sample.
   i. date and time taken
   ii. line number
   iii. who took the sample
   iv. location
   v. chain of evidence

12. Identify procedures used for collection of samples.

13. Identify the types of asbestos and their characteristics.

14. Describe personal health and medical issues relating to asbestos.

15. Identify materials required for abatement.
   i. polyethylene
   ii. studs
   iii. tape
   iv. adhesive
   v. fasteners

16. Identify tools and safety equipment required for abatement.
   i. manometer
   ii. aviation snips
   iii. negative air machines
   iv. glove bags
   v. High Efficiency Particulate Air (HEPA) vacuum
   vi. fall protection equipment
   vii. PPE

17. Identify and interpret the health and safety regulations and responsibilities with respect to the disposal of asbestos and other products.
    i. disposable coveralls
    ii. filters
    iii. gloves
    iv. rags

18. Identify regulations pertaining to the requirements for decontamination.

19. Describe the procedures used to secure work area.

20. Identify and interpret the regulations and responsibilities with respect to the removal and containment of asbestos.

21. Identify materials used to construct containment area.

22. Identify types of temporary enclosures.

23. Identify equipment used in asbestos abatement.

24. Determine required number of negative air machines and their locations.

25. Identify electrical safety risks.

26. Identify and interpret regulations and responsibilities with respect to the containment of asbestos.

Practical Requirements:

None.

HF1440 Asbestos Removal

Learning Outcomes:

- Demonstrate knowledge of procedures used for removing asbestos.
- Demonstrate knowledge of regulations pertaining to the removal and containment of asbestos.
- Demonstrate knowledge of procedures used for disposal of asbestos.
- Demonstrate knowledge of regulations pertaining to the disposal of asbestos.
- Demonstrate knowledge of procedures used for decontamination area and equipment.
- Demonstrate knowledge of regulations pertaining to the decontamination of area and equipment.

Duration: 12 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Describe methods used for asbestos removal.

2. Identify types of tools and equipment used for asbestos removal.
   i. HEPA vacuum
   ii. hoses
   iii. wire brushes
   iv. scrapers
   v. knives
   vi. snips
   vii. airless spray machines
   viii. shovels
   ix. brooms

3. Describe procedures used for hot and cold removal.

4. Identify and interpret the regulations and responsibilities with respect to the removal of asbestos.

5. Describe methods used for disposal of asbestos.

6. Identify precautions required for removal of asbestos.

7. Identify and interpret the regulations and responsibilities with respect to the disposal of asbestos.

8. Describe procedures used to decontaminate area, equipment and personnel.

9. Describe method used to take an air sample.

10. Identify and interpret the regulations and responsibilities with respect to the decontamination of area and equipment.

11. Identify and interpret the regulations and responsibilities with respect to health and safety requirements and responsibilities

12. Identify and interpret the regulations and responsibilities with respect to containment of area and equipment

Practical Requirements:

None.

HF1450 Asbestos Maintenance and Repair

Learning Outcomes:

- Demonstrate knowledge of procedures used to encapsulate asbestos.
- Demonstrate knowledge of regulations pertaining to the encapsulation of asbestos.
- Demonstrate knowledge of procedures used to enclose asbestos.
- Demonstrate knowledge of regulations pertaining to the enclosure of asbestos.

Duration: 12 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify situations that require encapsulating asbestos.

2. Identify types of encapsulant materials.
   i. mastic
   ii. jacketing
   iii. sealants
   iv. coatings

3. Identify types of tools and equipment used to apply encapsulant materials.
   i. airless sprayer
   ii. brush
   iii. cutting tools
   iv. trowels

4. Describe procedures used to apply encapsulant materials.

5. Identify and interpret the regulations and responsibilities with respect to the encapsulation of asbestos.

6. Explain the purpose of labelling encapsulated area with asbestos warning.

7. Identify situations that require enclosing asbestos.

8. Describe factors to consider when determining method of repair.
   i. type of asbestos
   ii. abatement classification
   iii. size of project

9. Identify types of materials used to build enclosure around asbestos.

10. Identify and interpret the regulations and responsibilities with respect to the enclosure of asbestos.

11. Explain the purpose of labelling enclosure with asbestos warning.

12. Identify and interpret the regulations and responsibilities with respect to health and safety related to asbestos.

13. Identify method of repair when enclosing asbestos.
    i. coxing
    ii. covering
    iii. taping

Practical Requirements:

None.

HF1460 Lead Abatement and Mould Remediation

Learning Outcomes:

- Demonstrate knowledge of lead, its health risks and abatement procedures.
- Demonstrate knowledge of mould remediation, its health risks and procedures for remediation.

Duration: 18 Hours

Pre-Requisite(s): HF1121

Objectives and Content:

1. Identify lead and its health risks.
2. Identify health and safety exposure limits.
3. Identify jurisdictional guidelines.
4. Identify lead abatement procedures.
5. Identify mould remediation and its health risks.
6. Identify mould remediation procedures.
7. Identify environment and substrates that support mould growth.

Practical Requirements:

None.

INS-180 Hot Work

Learning Outcomes:

- Demonstrate knowledge of hot work environments.
- Demonstrate knowledge of procedures to work safely in hot work environments.

Duration: 18 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Define hot work and its relation to the insulator occupation.

2. Describe the potential health effects of working in hot work environments.
   - i. body's ability to cool itself
     - blood circulation
     - sweating
   - ii. effect of hot work on the body's cooling system
     - metabolic heat
   - iii. heat disorders
     - symptoms
     - treatments

3. Describe the procedures used to prevent heat disorders when working in hot work environments.
   - i. workplace prevention
     - hot work supervisor
     - schedules
     - worker's records
   - ii. monitoring hot work areas
     - wet bulb globe thermometer
     - determine stay times
     - acclimatization
   - iii. personal prevention
     - knowledge of personal medical/work history
     - knowledge of personal limits

4. Describe site setup and procedures used in hot work environments.
   i. hot work conditions
      - setting up a workplace
      - steps
        - posting signs
        - shutting off ventilation system
        - shutting off electricity
      - procedures
        - use of extension cords
        - use of scaffolds
        - use of large equipment
        - building a decontamination unit
        - hooking up negative air machines

5. Identify special personal protective clothing used in hot work environments.
   i. cooling suits
   ii. ice vests
   iii. fireproof suits

6. Describe fire protection and safe work practices used in hot work environments.
   i. proper prevention measures
   ii. dangers of high temperatures
   iii. flammable materials
   iv. fire extinguishers
   v. logbook
   vi. emergency exits
   vii. emergency phone numbers
   viii. pre-planned escape plan

Practical Requirements:

None.

HF1271 Blueprints I

Learning Outcomes:

- Demonstrate knowledge of the ability to read basic information from blueprints or drawings.
- Demonstrate knowledge of the interpretation of basic information from blueprints or drawings.
- Demonstrate knowledge of preparing basic drawings and diagrams.

Duration: 24 Hours

Pre-Requisite(s): HF1103, AM1201

Objectives and Content:

1. Identify and describe the components of a blueprint or drawing.
   - i. title block
   - ii. name
   - iii. address
   - iv. date
   - v. material
   - vi. system
   - vii. view
   - viii. measurements
   - ix. orientation
   - x. north
   - xi. elevation orientation

2. Identify and describe basic architectural symbols.
   - i. earth
   - ii. concrete
   - iii. block
   - iv. metal
   - v. structural steel
   - vi. wood
   - vii. gyproc over wood
   - viii. insulation
   - ix. windows
   - x. doors

3. Identify and describe different projections and drawings.
   - i. orthographic projections
     - multi-view
   - ii. pictorial drawings
     - perspective drawings
     - oblique drawings
     - isometric drawings
   - iii. general arrangements
   - iv. plot plans

4. Identify and describe different types of elevation views and details.
   - i. elevations
   - ii. sections and details

5. Describe the procedures used to determine measurements from scaled drawings.
   - i. the alphabet of lines
     - center line
     - hidden line
     - cutting plane line
     - break line
     - dimension line
     - extension line
     - object line
     - leader line
   - ii. scaling a dimension
     - scales
     - ratios
     - imperial/metric scales
     - using a scale

Practical Requirements:

1. Interpret and sketch basic drawings and diagrams.

AM1000 Introduction to Essential Skills

Learning Outcomes:

- Demonstrate knowledge of the nine nationally recognized essential skills.
- Demonstrate knowledge of the essential skills levels of complexity.
- Demonstrate knowledge of the essential skills required for the learners chosen trade.
- Demonstrate an awareness of essential skills assessments.

Duration: 9 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Identify and describe the essential skills recognized by the Government of Canada through the Office of Literacy and Essential Skills (OLES).
   i. reading
   ii. document use
   iii. numeracy
   iv. writing
   v. oral communication
   vi. working with others
   vii. thinking
   viii. computer use
   ix. continuous learning

2. Describe the Levels of Complexity measurement assigned to essential skills.

3. Identify the essential skills, along with their complexity level, identified as necessary for the learner's trade.
   i. RSOS / NOA content[1]
   ii. OLES Essential Skills Profiles[2]
   iii. OLES tools and support for apprentices and tradespersons[3]

4. Describe the nature and purpose of essential skills assessment.
   i. self-assessment & formal assessment tools
   ii. indicators of deficiencies
   iii. suggestions for improvement

5. Describe the benefits of essential skills improvement.
   i. confidence at work
   ii. employability
   iii. success in apprenticeship
   iv. wage & job advancement

Practical Requirements:

1. Complete an essential skills self-assessment addressing numeracy, document use and reading. The online **Government of Canada Essential Skills Indicator[4]** and **Essential Skills self-assessment for the trades[5]** are to be used unless the instructor provides a similar assessment tool or tools.

2. Participate in a group discussion about the impact of gaps in essential skills that may be revealed by the self-assessments completed, and the value of improving essential skills.

Students are graded complete or incomplete on this practical work, no grade is permitted for self-assessment performance. However, completion of the practical requirements is mandatory for completion of this unit.

Resources:

All footnotes are in the companion document “Resources for Introduction to Essential Skills” which is available online from Apprenticeship and Trade Certification.

AM1101 Math Essentials

Note: It is recommended that AM1101 be delivered in the first semester of the Pre-employment program.

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: 42 Hours

Pre-Requisite(s): None

Objectives and Content:

Wherever possible, the instructor is expected to use trade specific examples to reinforce the course 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. use a protractor to measure angles
    ii. determine whether an angle is right, acute or obtuse
    iii. identify parallel, perpendicular, horizontal and vertical lines
    iv. 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:

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.

AM1201 Insulator Math Fundamentals

Learning Outcomes:

- Demonstrate knowledge of mathematical concepts in the performance of trade practices.
- Demonstrate knowledge of mathematics as a critical element of the trade environment.
- Solve mathematical word problems.
- Demonstration knowledge of mathematical principles for the purposes of problem solving, job and materials estimation, measurement, calculation, system conversion, diagram interpretation and scale conversions, formulae calculations, and geometric applications.

Duration: 42 Hours

Pre-Requisite(s): AM1101

Objectives and Content:

The instructor is required to use trade specific examples to reinforce the course objectives.

1. Describe percent/decimal/fraction conversions and comparisons in trade specific situations.

2. Describe ratios and proportions as they relate to trade specific problems.

3. Describe the use of the Imperial and Metric measurement systems in trade specific applications.

4. Describe Imperial and Metric conversions in trade specific situations.
   i. convert between imperial and metric measurements
   ii. convert to another unit within the same measurement system

5. Describe how to manipulate formulas using cross multiplication, dividing throughout, elimination, and substitution to solve trade specific problems.
   i. right angle triangles
   ii. area
   iii. volume
   iv. perimeter
   v. density

6. Identify calculations involving geometry that are relevant to the trade.
   i. angle calculations
   ii. circle calculations

7. Identify math processes used to complete administrative trade tasks.
   i. material estimation
   ii. material costing
   iii. time & labour estimates
   iv. taxes & surcharges
   v. markup & projecting revenue

Practical Requirements:

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

2. This course is **non-transferable** to other trades programs, and **not eligible for prior learning assessment**. Students completing training in this trade program are required to complete this math course. Apprentice transfers under Provincial / Territorial Mobility agreements may be exempt from this requirement.

CM2161 Communication Essentials

Learning Outcomes:

- Demonstrate knowledge of the importance of well-developed writing and oral communication skills in the workplace.
- Demonstrate knowledge of the principles of effective workplace writing.
- Demonstrate knowledge of the purpose of various types of workplace documentation and workplace meetings.
- Demonstrate knowledge of the importance of effective interpersonal skills in the workplace.
- Demonstrate knowledge of effective job search techniques

Duration: 36 Hours

Pre-Requisite(s): None

Objectives and Content:

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

1. Define communications terminology used in the trade.

2. Identify the principles of effective workplace writing.
   i. grammar, punctuation, mechanics
   ii. sentence and paragraph construction
   iii. tone, language, and word choice
   iv. the writing process
      - planning
      - writing
      - editing/revising

3. Identify sources of information used to communicate in the workplace.
   i. regulations
   ii. codes
   iii. OH&S requirements
   iv. prints, drawings and specifications
   v. company and client documentation

4. Identify types and purposes of informal workplace documents.
   i. reports
      - incident
      - process
      - progress

ii. common trade specific forms
iii. primary and secondary methods of information gathering
iv. accuracy and completeness in reports and forms

5. Demonstrate an understanding of interpersonal communications in the workplace.
   i. recognize group dynamics
   ii. contribute information and expertise
   iii. individual learning styles
      - Audible
      - Visual
      - Experiential
      - Theoretical
   iv. recognize respectful and open communication
   v. accept and provide feedback
   vi. interpret non-verbal communication cues
      - body language
      - signals

6. Demonstrate an understanding of effective oral communication skills.
   i. listening
      - receiving, understanding, remembering, reflecting, evaluating, paraphrasing, and responding
   ii. speaking
      - using clear and proper words
      - tone, style, and vocabulary
      - brevity
   iii. common workplace oral communication situations
      - introducing self and others
      - telephone conversations
      - tool box/safety talks
      - face-to-face conversations
      - communicating with co-workers, supervisors, clients, and other trades people

7. Identify common practices related to workplace meetings.
   i. meeting formats
   ii. meeting preparation
   iii. agendas and minutes
   iv. roles, responsibilities, and etiquette of meeting participants

8. Identify acceptable workplace use of communication technologies
   i. cell / smart phone etiquette
   ii. voice mail
   iii. e-mail
   iv. texting / messaging through social media
   v. teleconferencing / videoconferencing for meetings and interviews
   vi. social networking
   vii. other emerging technologies

9. Demonstrate an understanding of effective job search techniques
   i. employment trends, opportunities, and sources of employment
   ii. job ads and the importance of fitting qualifications to job requirements
   iii. resumes
      - characteristics of effective resumes
      - types of resumes
      - principles of resume formatting
   iv. effective cover letters
   v. job interview process
      - pre-interview preparation
      - interview conduct
      - post-interview follow up

Practical Requirements:

1. Write a well-developed, coherent, unified paragraph.

2. Complete a trade-related form.

3. Prepare an agenda for a toolbox safety talk.

4. Participate in a simulated oral workplace communication situation.

5. Prepare a resume.

SD1761 Workplace Essentials

Note: It is recommended that SD1761 be delivered in the second half of Pre-employment training.

Learning Outcomes:

- Demonstrate a knowledge of workplace requirements in the areas of personal responsibility, unions, workers compensation, workers' rights, and human rights.
- Demonstrate a knowledge of quality customer service.

Duration: 24 Hours

Pre-Requisite(s): None

Objectives and Content:

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

1. Identify personal responsibilities and attitudes that contribute to on-the-job success.
   i. asking questions
   ii. working safely
   iii. accepting constructive feedback
   iv. time management & punctuality
   v. respect for authority
   vi. stewardship of materials, tools and properties

2. Define unions and identify their role in the workplace.
   i. purpose of unions
   ii. common union structure
   iii. unions in this trade

3. Demonstrate an understanding of the Worker's Compensation process.
   i. aims, objectives, and benefits of the Workplace Health, Safety and Compensation Commission
   ii. role of the workers advisor
   iii. internal review process

4. Demonstrate an understanding of worker's rights.
   i. labour standards
   ii. regulations, including:
      - hours of work & overtime
      - termination of employment
      - minimum wages & allowable deductions
      - statutory holidays, vacation time, and vacation pay

5. Demonstrate an understanding of human rights issues.
   i. awareness of the Human Rights Code and the role of the Human Rights Commission
   ii. categories of discrimination and strategies for prevention
      - direct
      - systemic
      - adverse effect
   iii. types of discrimination
      - race
      - ethnic origin
      - colour
      - religion
      - age
      - gender identify
      - sexual orientation
      - marital status
      - family status
      - disability
      - criminal conviction that has been pardoned
   iv. conduct that constitutes harassment and discrimination
      - objectionable conduct
      - comments or displays made either on a one-time or continuous basis that demeans, belittles, or causes personal humiliation or embarrassment to the recipient
   v. the value of diversity in the workplace
      - culture
      - gender identify
      - sexual orientation

6. Demonstrate an understanding of quality customer service.
   i. importance of quality service
   ii. barriers to quality service
      - physical and physiological
      - cultural
      - technological
   iii. customer needs & common methods for meeting them
   iv. characteristics & importance of a positive attitude
   v. interactions with challenging customers
   vi. addressing complaints and resolve conflict

Practical Requirements:

None.

MC1062 Computer Essentials

Learning Outcomes:

- Demonstrate knowledge of desktop/laptop and mobile computers and their operation.
- Demonstrate knowledge of word processing and spreadsheet software, internet browsers and their applications.
- Demonstrate knowledge of e-mail applications and procedures.
- Demonstrate an awareness of security issues related to computers.
- Demonstrate an awareness of online learning using computers.

Duration: 15 Hours

Pre-Requisite(s): None

Objectives and Content:

When possible, the instructor is expected to use trade specific examples to reinforce the course objectives.

1. Identify computer types used in the workplace, and the characteristics of each.
   i. desktop/laptop computers
   ii. tablets
   iii. smartphones

2. Identify common desktop and mobile operating systems.
   i. Windows
   ii. Mac OS
   iii. iOS
   iv. Android

3. Describe the use of Windows operating system software.
   i. start and end a program
   ii. use the help function
   iii. use the find function
   iv. maximize and minimize a window
   v. open and scroll through multiple windows
   vi. use the task bar
   vii. adjust desktop settings such as screen savers, screen resolution, and backgrounds
   viii. shut down a computer

4. Identify the skills necessary to perform file management commands.
   i. create folders
   ii. copy files and folders
   iii. move files and folders
   iv. rename files and folders
   v. delete files and folders

5. Describe the use of word processing software to create documents.
   i. enter & edit text
   ii. indent and tab text
   iii. change text attributes
      - bold
      - underline
      - font
   iv. change layout format
      - margins
      - alignment
      - line spacing
   v. spell check and proofread
   vi. save, close & reopen a document
   vii. print document

6. Describe the use of spreadsheet software to create documents.
   i. enter data in cells
   ii. format data in cells
   iii. create formulas to add, subtract, multiply and divide
   iv. save, close & reopen a spreadsheet
   v. print spreadsheet

7. Describe the use of the internet in the workplace.
   i. web browsers
   ii. search engines
   iii. security issues
   iv. personal responsibility for internet use at work

8. Describe the role of e-mail.
   i. e-mail etiquette
      - grammar and punctuation
      - privacy issues when sharing and forwarding e-mail
      - work appropriate content
      - awareness of employer policies
   ii. managing e-mail
      - using folders
      - deleting, forwarding, replying

iii. adding attachments to e-mail
iv. view e-mail attachments
v. printing e-mail

9. Describe computer use for online learning.
   i. online training
   ii. level exams
   iii. study guides
   iv. practice exams

Practical Requirements:

1. Create, save and print a document using word processing software.

2. Create, save and print a document using spreadsheet software.

3. Send and receive an e-mail with an attachment.

AP1102 Introduction to Apprenticeship

Learning Outcomes:

- Demonstrate knowledge of how to become a registered apprentice.
- Demonstrate knowledge of the steps to complete an apprenticeship program.
- Demonstrate knowledge of various stakeholders in the apprenticeship process.
- Demonstrate knowledge of the Red Seal Program.

Duration: 12 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Define terminology associated with apprenticeship.
   i. apprentice
   ii. registered apprentice
   iii. trade qualifier
   iv. journeyperson
   v. certified journeyperson
   vi. Certificate of Apprenticeship
   vii. Certificate of Qualification
   viii. dual certification
   ix. compulsory trades

2. Explain the roles and responsibilities of those involved in the apprenticeship system in Newfoundland and Labrador.
   i. registered apprentice
   ii. training institution
   iii. employer
   iv. journeyperson
   v. mentor
   vi. Department of Jobs, Immigration and Growth
      - Industrial Training section
      - Standards and Curriculum section
   vii. Provincial Trade Advisory Committees (PTAC)
   viii. Provincial Apprenticeship and Certification Board (PACB)

3. Describe the training components of an apprenticeship.
   - i. in-school
     - Pre-employment / Level 1
     - advanced levels
   - ii. workplace experience

4. Explain the steps in the registered apprenticeship process.
   - i. meet entrance requirements
     - education
     - employment
     - Recognition of Prior Learning (RPL) - if applicable
   - ii. complete the registration process
     - application
     - required documents
   - iii. complete the Memorandum of Understanding (MOU)
     - contract responsibilities
     - probation period
     - cancellation
   - iv. maintain Record of Occupational Progress (Logbook)
     - sign off skills
     - record hours
     - update Apprenticeship Program Officer (APO) on progress
   - v. class calls
     - hour requirements
     - EI eligibility
     - training schedule
   - vi. level examinations - if applicable
   - vii. progression schedule
     - apprenticeship level
     - wage rates
   - viii. certification examinations
     - Provincial
     - Red Seal
       - written
       - practical - if applicable
   - ix. certification
     - Certificate of Apprenticeship
     - Certificate of Qualification
     - Provincial journeyperson - Blue Seal
     - Interprovincial journeyperson - Red Seal endorsement (RSE)

5. Identify the Conditions Governing Apprenticeship.

6. Discuss cancellation of apprenticeship.
   i. failure to notify of address change
   ii. extended periods of unemployment
   iii. lack of contact with an APO for an extended period
   iv. failure to respond to class calls
   v. declining of multiple class calls

7. Explain the Red Seal program.
   i. designated Red Seal trades
   ii. the Red Seal Occupational Standard (RSOS)
   iii. relationship of RSOS to Red Seal examination
   iv. national qualification recognition and mobility

8. Identify the current financial incentives available to apprentices.
   i. Federal
   ii. Provincial

9. Explain the Provincial / Territorial Apprentice Mobility Guidelines.
   i. temporary mobility
   ii. permanent mobility

10. Describe Atlantic and National Harmonization initiatives.

Practical Requirements:

1. Use the Provincial Apprenticeship and Trades Certification website at www.gov.nl.ca/atcd.
   i. locate, download, and complete the Application for Apprenticeship and Memorandum of Understanding (MOU)
   ii. locate the address of the Industrial Training office closest to this campus
   iii. locate the training schedule and identify the start date of the next class call for this trade
   iv. locate and review the learning resources applicable to this trade
      - Study Guide
      - Exam Preparation Guide
      - Plan of Training

2. Use the Plan of Training applicable to this trade.
   i. locate the hours for the trade
      - total in-school
      - total required for certification
   ii. locate the number of levels
   iii. locate the courses in each level
   iv. locate the hours required for progression to a Level II apprentice and the wage percentage of that level

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 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

Insulator (Heat and Frost) - 7200 Hours			
Apprenticeship Level and Wages			
Level	Wage Rate	Requirements for Progression to Next Level	Next Level
1	60%	▪ Completion of Pre-Employment / Level 1 training ▪ Registration as an apprentice ▪ Pass Level 1 exam* ▪ Minimum 1800 hours of combined relevant work experience and training	2nd Year
2	70%	▪ Completion of Level 2 training ▪ Pass Level 2 exam* ▪ Minimum 3600 hours of combined relevant work experience and training	3rd Year
3	80%	▪ Completion of Level 3 training ▪ Pass Level 3 exam* ▪ Minimum 5400 hours of combined relevant work experience and training	4th Year
4	90%	▪ Completion of Level 4 training ▪ Pass Level 4 exam* ▪ Minimum 7200 hours of combined relevant work experience and training ▪ Sign-off of all workplace skills in apprentice logbook ▪ 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.

Insulator (Heat and Frost) - 7200 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 ▪ Prior Learning Assessment (PLA) at designated college (if applicable)	As prescribed by the AACS for the trade
Level 2	▪ Minimum of 3000 hours of relevant work experience and training	210
Level 3	▪ Minimum of 5000 hours of relevant work experience and training	180
Level 4	▪ Minimum of 7030 hours of relevant work experience and training	180
Class Calls at Minimum Hours: ▪ 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 7200 hours.

   Or

   A total of 10,800 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 level, 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