Pre-Employment Plan of Training

Power Sport Technician

March 2020

Newfoundland & Labrador

PLAN OF TRAINING

Power Sport Technician

March, 2020

Government of Newfoundland and Labrador
Department of Advanced Education, Skills and Labour
Apprenticeship and Trades Certification Division

Approved by:

Dave H

Chairperson, Provincial Apprenticeship and Certification Board

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Preface

This curriculum standard describes the curriculum content for the Power Sport Technician apprenticeship 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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Document Status	Date Approved	Mandatory Implementation Date	Comments
New	April 2020	Pre-employment September 2020	- review and update course content
		Level II September 2021	
		Level III September 2022	
		Level IV September 2023	
Final	April 2020	September 2024	-New trade name, new department name, updated essential skills courses

Table of Contents

A. 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 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.

A pre-employment student who becomes an apprentice will also be required to complete Levels 2, 3 & 4 in the PS-Tec NLCS.

Level 1				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
TS1510	-	OH&S	6	None
TS1520	-	WHMIS	6	None
TS1530	-	Standard First Aid	14	None
TS1191	-	Shop Fundamentals	120	None
TS1220	-	Precision Measurement	30	None
WD1250	-	Oxy-fuel Cutting and Heating	30	TS1191
WD1320	-	Gas Metal Arc Welding	30	TS1191
MP1440	-	Electrical and Electronic Basic Principles	90	TS1191 SR1120
SR1120	-	Service Information Systems	30	None
SR1131	-	Engine Operations	30	TS1191 SR1120
SR1140	-	Lubrication Systems	45	TS1191 SR1120
SR1221	-	Small Equipment Engines	60	SR1131

Level 1				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
SR1230	-	Small Equipment Starting and Charging Systems	75	MP1440
SR1240	-	Ignition Systems	60	MP1440
SR1320	-	Gasoline Engine Air and fuel delivery systems	30	TS1191 SR1120
SR1330	-	Gas Injection Systems	60	SR1320 MP1440
SR1340	-	Carburetted Fuel Systems	60	SR1320
SR1420	-	Small Equipment Cooling Systems	45	TS1191 SR1120
SR1145	-	Introduction to Heating and Air Conditioning Systems	30	TS1191
SR1431	-	Emission Control Systems	30	SR1330 SR1340 SR1240
AM1001	-	Introduction to Skills for Success	9	None
*****AM1101	-	Math Essentials	42	None
AM1361	-	Powersport Math Fundamentals	42	AM1101
CM2161	-	Communication Essentials	36	None
SD1761	-	Workplace Essentials	24	None
MC1062	-	Computer Essentials	15	None
AP1102	-	Introduction to Apprenticeship	12	None
Total Hours			1061	

***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

Level 2				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
SR2100	-	Lawn & Garden Equipment Servicing Fundamentals	45	Level 1
SR2200	-	Snowmobile Servicing Fundamentals	60	Level 1
SR2301	-	Motorcycle Servicing Fundamentals	30	Level 1
SR2302	-	ATV Servicing Fundamentals	30	Level 1
SR2401	-	Marine Equipment Servicing Fundamentals	75	Level 1
Total Hours			240	

REQUIRED
WORK EXPERIENCE

Level 3				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
SR1500	-	Small Equipment Transmissions	120	Level 2
SR2310	-	Motorcycle & ATV Troubleshooting & Repair	120	Level 2
Total Hours			240	

REQUIRED
WORK EXPERIENCE

Level 4				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
SR2111	-	Lawn & Garden Equipment, Troubleshooting & Repair	70	Level 3
SR2210	-	Snowmobile Troubleshooting & Repair	80	Level 3
SR2411	-	Marine Equipment Troubleshooting & Repair	90	Level 3
Total Hours			240	

Total Course Credit Hours	1781

Level 1

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
   iv. health and safety representation
   v. reporting endangerment to health
   vi. appropriate remedial action
   vii. investigation of endangerment
   viii. committee recommendation
   ix. 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 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 WHMIS
   - 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

Practical Requirements:

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

TS1191 Shop Fundamentals

Learning Outcomes:

- Demonstrate a knowledge of the need for safety regulations in the operation and maintenance of shop tools, equipment and facilities.
- Demonstrate an appreciation for environmental protection.

Duration: 120 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Identify safe working habits.
   - i. purpose and maintenance of personal safety equipment
   - ii. respect noise level regulations
   - iii. identify potential hazards to personal safety
   - iv. check for unsafe conditions
   - v. reporting of accidents

2. Identify fire hazards.
   - i. fire hazards
     - classifications of fire types
     - purpose and use of fire extinguishers
   - ii. explosions
     - spontaneous combustion
     - storage and handling of fuels
   - iii. ventilation and hazardous gases
     - carbon monoxide
     - storage batteries

3. Describe procedures to select and use hand tools.
   - i. pliers
   - ii. screwdrivers
   - iii. wrenches
   - iv. hammers and mallets
   - v. gripping tools
   - vi. ratcheting tools

4. Describe the procedures to select and use tubing, fittings and flaring tools.
   - i. single and double flaring
   - ii. ISO flaring
   - iii. measure and cut tubing
   - iv. double flare union

5. Describe the procedures to select and use cutting tools.
   i. punches
   ii. chisels
   iii. files
   iv. saws
   v. sharpen chisels
   vi. sharpen drill bits
   vii. maintain and store cutting tools

6. Describe the procedures to select and use threading devices.
   i. taps
   ii. dye
   iii. thread restorers
   iv. thread inserts
   v. extractors
   vi. tap and drill chart

7. Describe the procedures to select and use fasteners.
   i. rivets
   ii. sheet metal screws
   iii. bolts
   iv. nuts
   v. washers
   vi. torque procedures
   vii. bolt grades
   viii. keys and pins
   ix. c-clips and snap rings
   x. plastic fastening devices

8. Describe the procedures to select, use and maintain shop equipment.
   i. pullers
   ii. drivers
   iii. presses
   iv. portable power tools
   v. power cleaning equipment
   vi. portable crane
   vii. jacks
   viii. chain hoist
   ix. solvent cleaning tanks
   x. winches

9. Describe the procedures to drill materials.
   i. operation of power drilling equipment
   ii. selection and use cutting fluids
   iii. identify and selection of clamping devices
   iv. maintenance of drilling equipment

10. Describe the procedures to grind and finish metals.
   i. installation of grinding wheel disc and brush
   ii. adjustment of tool rest
   iii. dressing a grinding wheel
   iv. operation of stationary and portable grinders
   v. maintenance of equipment
   vi. identification and use of abrasives

11. Describe the procedures to use and maintain compressed air systems.

Practical Requirements:

1. Locate fire exits, fire alarms.

2. Locate shop ventilation system.

3. Prepare a floor plan showing fire exit routes.

4. Use hand and shop tools for power sport equipment while working on bench projects.

5. Identify and use common fasteners.

TS1220 Precision Measurement

Learning Outcomes:

- To demonstrate an understanding of the skills and knowledge required for making precision measurements.

Duration: 30 Hours

Pre-Requisite(s): None

Objectives and Contents:

1. Describe the procedures to select and use semi-precision measuring tools.
   - i. combination set
   - ii. steel rule
   - iii. dividers
   - iv. measuring tape
   - v. angle gauge
   - vi. straight edges

2. Describe the procedures to select and use precision measuring tools.
   - i. micrometers (all types)
   - ii. Vernier calipers (all types)
   - iii. surface plates (all types)
   - iv. telescopic gauges
   - v. small hole gauges
   - vi. depth gauges
   - vii. dial indicators (all types)
   - viii. v-blocks
   - ix. cylinder bore gauge
   - x. torque wrench
   - xi. feeler gauges

3. Solve problems on Imperial/Metric conversions.

Practical Requirements:

1. Measure outside and inside diameters of a given object.
2. Measure projection and depth of a given object.
3. Measure runout, endplay and backlash on given object.
4. Maintain measuring tools as required by the manufacture.

WD1250 Oxy-Fuel Cutting And Heating

Learning Outcomes:

- Demonstrate an understanding of the procedures for the safe and effective set up and operation of oxy-fuel equipment for heating and cutting.

Duration: 30 Hours

Pre-Requisite(s): TS1191

Objectives and Content:

1. Describe the procedures to operate oxy-fuel heating and cutting equipment to industrial safety standards for the removal and/or installation of parts.
   - i. safety precautions
     - safety apparel
     - storage and handling of welding gases
     - pre-operational inspection
   - ii. setting up equipment
     - cylinders
     - gauges
     - regulators
     - valves-flame arrestor
     - torches and tips
     - hoses
     - testing for leaks
   - iii. operating the torch
     - lighting procedures
     - types of flame
     - shutting down procedures

2. Describe the procedures to perform flame cutting with oxy-acetylene equipment.
   - i. flame cutting
   - ii. cutting torch and tips
   - iii. use of cutting torch

Practical Requirements:

1. Assemble, test, light and adjust oxy-fuel welding and cutting equipment.

2. Perform flame cutting with oxy-fuel equipment.

3. Perform proper shut down procedures.

WD1320 Gas Metal Arc Welding

Learning Outcomes:

- Demonstrate an understanding of the basic MIG (GMAW) welding process and of the skills and knowledge needed to use MIG Welding equipment.

Duration: 30 Hours

Pre Requisite(s): TS1191

Objectives and Content:

1. Describe the procedures to operate MIG welding equipment to industrial safety standards as needed for various motorized equipment.
   - i. equipment
   - ii. advantages
   - iii. shielding gases
   - iv. filler wire
   - v. welding process
   - vi. types
   - vii. weld penetration
   - viii. electrical system cautions
     - location of ground cables
     - possible bearing damage from welding
     - possible computer and electrical accessory damage from welding
     - procedures to prevent electrical and bearing damage
   - ix. set up and shut down procedures

Practical Requirements:

1. Weld using MIG equipment.

2. Perform set up and shut down procedures.

3. Perform routine maintenance activities.

MP1440 Electrical & Electronic Basic Principles

Learning Outcomes:

- Demonstrate the ability to apply basic electrical and electronic principles.

Duration: 90 Hours

Pre-requisite(s): TS1191, SR1120

Objectives and content:

1. Describe basic electrical principles.
   - i. safety practices and procedures working with electrical equipment
   - ii. terminology - abbreviations and glossary of electrical terms
   - iii. sources of electricity
     - generation of electricity
     - use of chemical, magnetism, heat, light and DC power supply
     - theory and laws of electricity
     - theory and laws of magnetism and inductance
   - iv. ohms law - volts, ohms and amperes
   - v. symbols and schematics - common electrical symbols
     - read schematics/wiring diagrams

2. Describe the application of electrical principles using ohms law to calculate volts, ohms, watts and amperes.
   - i. application of Ohms Law to electrical circuits
     - series circuit
     - parallel circuit
     - series and parallel circuit

3. Use instruments to test components of series, parallel and series parallel circuits to determine cause of malfunctions in an electrical circuit.
   - i. circuit testing devices
     - applications of volt, ohm and ammeters
     - meter ranges
     - correct hookup of meters
     - test lights, circuit breakers
   - ii. circuit problems and testing problems
     - short, open and grounds
     - diagnostic trouble shooting procedures
     - testing procedures and equipment

4. Describe the procedures for wire repair.
   i. soldering
   ii. crimping
   iii. terminal removal tools
   iv. heat shrink
   v. neoprene sealers

5. Identify electronic components, their purpose and uses.
   i. wires and terminals
      - types and sizes
      - terminals and connectors
      - conductors, semi-conductors and insulators
   ii. electronic control modules
      - identification
      - purpose
      - uses
   iii. voltage regulators

6. Describe fly-by-wire control systems.
   i. steering
   ii. throttle
   iii. shifting

Practical Requirements:

1. Read schematics and wiring diagrams.

2. Use circuit testing devices.
   i. ammeter
   ii. ohmmeter
   iii. voltmeter
   iv. test lights
   v. peak voltage meter

3. Apply Ohms Law to electrical circuit.

4. Identify wires and terminals.
   i. demonstrate back probing
   ii. complete a wire repair

5. Test electronic circuit.

SR1120 Service Information Systems

Learning Outcomes:

- Demonstrate the ability to select and use different types of service manuals found in the Power Sport Equipment Repair industry.

Duration: 30 Hours

Pre-requisite(s): None

Objectives and Content:

1. Identify the procedures to use operator's manual.
   i. methods of using
   ii. interpretation of sections

2. Identify the procedures to use service manual.
   i. methods of using
   ii. interpretation of sections

3. Identify the procedures to use parts manual.
   i. methods of using
   ii. interpretation of sections

4. Identify the procedures to use special bulletins.
   i. methods of using
   ii. purpose
   iii. interpretation

5. Introduction to computerized information systems.
   i. computerized parts information
   ii. computerized service and repair information
   iii. other online resources

6. Identify the procedures to use computerized information systems.
   i. work order
   ii. warranty claims
   iii. time ticket
   iv. tracking procedures

Practical Requirements:

1. Find serial number and decode on the following items.
   i. chassis
   ii. engine
   iii. transmission

2. With the appropriate manual, find the type and amount of engine oil recommended on an all-terrain vehicle.

3. With the appropriate manual find the step-by-step removal procedure of the engine and transmission of a motorcycle.

4. With the appropriate manual, create a parts list of a cylinder head.

SR1131 Engine Operations

Learning Outcomes:

- Demonstrate knowledge of engine construction and operation.

Duration: 30 Hours

Pre-Requisite(s): TS1191, SR1120

Objectives and content:

1. Describe the construction, operation and purpose of engine components.
   i. cylinder head
   ii. cylinder block
   iii. pistons
   iv. crankshaft
   v. camshaft
   vi. bearings
   vii. seals
   viii. valves
   ix. connecting rods
   x. rings
   xi. lubrication pump
   xii. manifolds
   xiii. valve arrangements
   xiv. cam chains

2. Describe types of engines.

3. Describe basic engine terminology.

4. Describe engine operating cycles.
   i. four cycle gasoline
   ii. four cycle diesel
   iii. two cycle gasoline

5. Describe the principles of engine operation.
   i. cylinder pressures
   ii. heat transfer
   iii. stress
   iv. torque
   v. compression
   vi. combustion
   vii. atmospheric pressure

viii. friction
ix. vacuum
x. inertia
xi. horsepower

6. Describe the metallurgy of engine blocks.
   i. aluminum
   ii. cast iron
   iii. composites

Practical Requirements:

None

SR1140 Lubrication Systems

Learning Outcomes:

- Demonstrate the skills and knowledge required for maintaining and repairing lubrication systems.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.
- Demonstrate an appreciation for environmental protection.

Duration: 45 Hours

Pre-Requisite(s): TS1191, SR1120

Objectives and content:

1. Describe the types, qualities, characteristics, and classifications of engine oils.

2. Describe the functions of engine oils.

3. Describe contaminants and explain their effects.

4. Explain the operation of lubrication systems.
   i. splash
   ii. pressure

5. Describe the types and explain the purpose of lubricating oil filters.

6. Describe the types and explain the operation of lubricating pumps.
   i. gear
   ii. vane
   iii. rotor
   iv. electric

7. Describe the types and explain the operation of valves and components.
   i. pressure relief
   ii. check

8. Describe the types and explain the operation of lubrication oil coolers.

9. Describe the procedures to identify and service lubrication systems charts for pre-mixing.
   i. oil filters and check for leaks
   ii. oil level
   iii. oil pressure

iv. dirty oil tank
v. oil for contamination
vi. engine oil
vii. maintain appropriate service records

10. Describe the procedures to service oil filters.
    i. replace oil filters
    ii. gaskets and "o" rings and filter
    iii. fill and bleed system

11. Describe the procedures to service a lubricating oil pump.
    i. identify, remove and disassemble oil pumps
    ii. inspect and identify worn components
    iii. replace, prime and test on engine
    iv. identify and adjust two-cycle oil pumps
    v. test oil pressure

12. Describe the procedures to service lubricating oil coolers.
    i. clean, inspect components
    ii. "O" rings, gaskets and seals

Practical Requirements:

1. Perform an oil pressure check on an engine.

2. Remove, clean, inspect and replace an oil filter.

3. Remove, clean, inspect and replace a pressure relief or check valve and components.

4. Remove, clean, inspect and replace oil pump.

SR1221 Small Equipment Engines

Learning Outcomes:

- Demonstrate the skills and knowledge required to perform routine servicing on light duty engines.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.

Duration: 60 Hours

Pre-Requisite(s): SR1131

Objectives and Content:

1. Describe the procedures to set valve timing.
   i. replace timing belt/chain
   ii. valve timing
   iii. service and repair reed valves on two-cycle engines
   iv. rotary valve timing on two-cycle engine

2. Describe the procedures to check gasoline engine compression.
   i. remove spark plugs
   ii. test compression
   iii. compare readings to indicate engine condition
   iv. replace and torque spark plugs
   v. cylinder leak down test
   vi. bore scope inspection

Practical Requirements:

1. Set valve timing on a two cycle and a four-cycle engine.

2. Perform a compression test on a gasoline engine.

3. Perform bore scope inspection.

SR1230 Small Equipment Starting and Charging Systems

Learning Outcomes:

- Demonstrate the skills and knowledge required to maintain and repair light duty starting and charging systems.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.

Duration: 75 Hours

Pre-Requisite(s): MP1440

Objectives and Content:

1. Describe types and purposes of batteries.

2. Describe the operating principles of starting and charging systems.

3. Describe the procedures to service batteries.
   i. test
   ii. recharge
   iii. replace

4. Describe the procedures to disassemble, inspect and service starting system.
   i. rope-rewind starters
   ii. relays and switches
   iii. electrical starters
   iv. starter drives
   v. maintain starting system

5. Describe the procedures to service and replace starting motors.

6. Describe the procedures to disassemble, inspect and service charging system.
   i. AC generator
   ii. voltage regulators
   iii. rectifiers
   iv. maintain charging system

7. Describe the procedures to service and replace AC generators, voltage regulators and rectifiers.

Practical Requirements:

1. Recharge a battery.
2. Test a battery.
3. Remove, inspect, repair and/or replace rope rewind starters.
4. Remove, inspect, repair and/or replace starter drives.
5. Remove, inspect, repair and/or replace electrical starters.
6. Remove, inspect, repair and or replace AC generator.
7. Remove, inspect, repair and or replace voltage regulators and rectifiers.

SR1240 Ignition Systems

Learning Outcomes:

- Demonstrate the skills and knowledge required to maintain and repair ignition systems.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.
- Demonstrate an appreciation for environmental protection.

Duration: 60 Hours

Pre-Requisite(s): MP1440

Objectives and Content:

1. Describe types, purpose and operations of ignition systems.

2. Identify the components of a conventional/electronic ignition system.

3. Describe the purpose and operation of on-board computer.

4. Describe the operation of the distributor and timing mechanisms.

5. Describe the procedures to test and service ignition systems.
   i. electronic ignition
      - solid state
      - CDI
   ii. computers
   iii. inputs and outputs
   iv. sensors

6. Describe the procedures to check, adjust and set distributor timing.

7. Describe the procedures to clean, adjust and replace spark plugs.

8. Describe the procedures to check resistance of high voltage wires, terminals and plug caps.

Practical Requirements:

1. Scan test on-board computer systems.

2. Set static and dynamic timing.

3. Remove, clean, adjust and/or replace spark plugs.

4. Determine resistance of high voltage wires.

5. Test output of ignition system components.

6. Test sensors readings as per manufactures specifications.

SR1320 Gasoline Engine Air and Fuel Delivery Systems

Learning Outcomes:

- Demonstrate the skills and knowledge required to maintain and repair gasoline air and fuel delivery systems.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.
- Demonstrate an appreciation for environmental protection.

Duration: 30 Hours

Pre-Requisite(s): TS1191, SR1120

Objectives and Content:

1. Explain the characteristics and uses of fuels.
   - i. regular unleaded
   - ii. high test unleaded
   - iii. diesel
   - iv. Liquid Petroleum Gas

2. Describe the types, purpose and operation of fuel system components.
   - i. filters
   - ii. tanks
   - iii. fuel lines
   - iv. fittings
   - v. pumps
     - mechanical
     - electric
     - impulse
   - vi. manifolds
   - vii. shut offs

3. Describe the procedures to inspect and service fuel system components.
   - i. filters
   - ii. tanks
   - iii. fuel lines
   - iv. fittings
   - v. pumps
     - mechanical
     - electric
     - impulse
   - vi. vacuum
   - vii. pressure

viii. flow rate
ix. rebuilding

4. Describe the types, purpose and operation of air intake system components.
   i. air filters
   ii. manifolds
   iii. air boxes
   iv. gaskets

5. Describe the procedures to inspect and service air intake system components.
   i. air filters
   ii. air boxes
   iii. gaskets

6. Describe the purpose and explain the operation of turbochargers, superchargers, and intercoolers.

7. Describe the effect that temperature, atmospheric pressure and humidity have on the operation of fuel systems.

Practical Requirements:

1. Replace a fuel filter.

2. Replace an air filter.

3. Test a fuel pump for flow and / or pressure according to manufacturer specifications.

SR1330 Gas Injection Systems

Learning Outcomes:

- Demonstrate the skills and knowledge required to maintain and repair gasoline injection systems.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.
- Demonstrate an appreciation for environmental protection.

Duration: 60 Hours

Pre-Requisite(s): SR1320, MP1440

Objectives and Content:

1. Describe types of injection systems and their operation for gasoline and diesel fuels.
   i. direct fuel injection
   ii. semi-direct fuel injection
   iii. high pressure injection

2. Describe the operation of high-pressure pumps and pressure regulators.

3. Describe the purpose of sensors, actuators and computer control modules.

4. Describe the procedure to inspect, test and service fuel system components.
   i. injectors
   ii. injection pumps
   iii. filters
   iv. fuel lines
   v. fuel rails
   vi. pressure regulators
   vii. injector cleaning

Practical Requirements:

1. Test fuel injectors.
2. Test fuel pressure regulators.
3. Remove and replace fuel injectors.
4. Test sensor outputs.
5. Perform a pressure test on a high pressure injection pump.

SR1340 Carburetted Fuel Systems

Learning Outcomes:

- Demonstrate the skills and knowledge required to maintain and repair carburetted fuel systems.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.

Duration: 60 Hours

Pre-Requisite(s): SR1320

Objectives and Content:

1. Describe carbureted fuel systems and explain the operation.

2. Describe the types of carburetors and explain their operations.
   i. circuits

3. Describe the types of governors and explain their operation.

4. Describe the procedure to recondition and synchronize carburetors.
   i. replace carburetor kits
   ii. adjust settings
   iii. synchronize multi-carburetor systems
   iv. pressure tests

5. Describe the procedures to service governors.
   i. air-vane
   ii. centrifugal
   iii. electronic assist

Practical Requirements:

1. Recondition a carburetor.

2. Synchronize a multi-carburetor system.

3. Inspect and adjust a mechanical governor.

SR1420 Small Equipment Cooling Systems

Learning Outcomes:

- Demonstrate the skills and knowledge required to maintain and repair light and medium duty cooling systems.
- Demonstrate the ability to use service information effectively.
- Demonstrate the use of safety practices in potentially harmful situations.
- Demonstrate an appreciation for environmental protection.

Duration: 45 Hours

Pre-Requisite(s): TS1191, SR1120

Objectives and Content:

1. Describe types of cooling systems and their operation.
   - i. air
   - ii. liquid
     - anti-freeze
     - oil

2. Describe the components of the cooling system and their operation.
   - i. belts
   - ii. pumps
   - iii. thermostats
   - iv. radiators
   - v. block heaters
   - vi. heat exchanger
   - vii. fans
     - mechanical
     - electric
   - viii. pulleys
   - ix. shrouds
   - x. recovery tank
   - xi. anodes

3. Describe damage caused by cooling system failure.

4. Describe types of coolant and explain the purposes.

5. Describe the effects of chemical corrosion on the cooling system.

6. Describe temperature control systems.

7. Describe the procedures to remove, service, and replace cooling system components.
   i. belts
   ii. pumps
   iii. thermostats
   iv. radiators
   v. block heaters
   vi. heat exchanger
   vii. fans
      - mechanical
      - electric
   viii. pulleys
   ix. adjustments
   x. anodes

8. Describe the procedures to test and replace coolant.
   i. cleaning and flushing
   ii. select engine coolants
   iii. test coolant condition
   iv. replace coolant as per manufactures specifications
   v. check system for leakage

9. Describe procedures to pressure test a cooling system.
   i. inspect cooling system
   ii. test cooling system temperature
   iii. check radiator cap pressure and vacuum release
   iv. check cooling system leaks using pressure
   v. refill and check system

10. Describe procedures to check thermostatic fan controls.
   i. check fan motor for power supply and ground
   ii. check thermo-switch
   iii. inspect and test wiring harness

Practical Requirements:

1. Drain and refill cooling system as per manufactures specifications.
2. Test coolant condition.
3. Test cooling system for leaks.
4. Replace a thermostat.
5. Inspect a water pump.
6. Check a cooling fan motor operation.

SR1145 Introduction to Heating and Air Conditioning Systems

Learning Outcomes:

- Demonstrate knowledge of air conditioning and heating systems, their components and operation.
- Demonstrate knowledge of the equipment used to diagnose air conditioning control systems.

Duration: 30 Hours

Pre-Requisite(s): TS1191

Objectives and Contents:

1. Explain the principles of an air condition system.

2. Identify airflow control systems, their components and operation.

3. Identify heating systems, and describe their components and operation.

4. Identify types of diagnostic equipment, and describe their applications and procedures for use.
   i. scan tool
   ii. manifold gauge set
   iii. charging station
   iv. pyrometer

Practical Requirements:

None

SR1431 Emission Control Systems

Learning Outcomes:

- Demonstrate the ability to service and repair vehicle emission control systems.
- Demonstrate an understanding of industry and provincial standards.

Duration: 30 Hours

Pre-Requisite(s): SR1240, SR1330, SR1340

Objectives and Content:

1. Identify the components and functions of an emission control system.
   - i. crankcase ventilation systems
     - positive
     - opened and closed
   - ii. air injection systems
     - secondary
   - iii. catalytic converters
     - monolithic
     - 2 way
     - 3 way
   - iv. evaporation controls
     - tank vent
   - v. spark timing controls
     - thermal valves
     - knock sensors
   - vi. oxygen sensors

2. Describe exhaust system characteristics.
   - i. back pressure
   - ii. sound waves

Practical requirements:

None.

AM1001 Introduction to Skills for Success

Learning Outcomes:

- Demonstrate knowledge of the nine nationally recognized Skills for Success.
- Demonstrate knowledge of the Skills for Success / Essential Skills required for the learners chosen trade.
- Demonstrate an awareness of Skills for Success / Essential Skills assessments.

Duration: 9 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Describe the new Skills for Success model and its relationship to the previous Essential Skills model[1].

2. Identify and describe the Skills for Success recognized by the Government of Canada through the Office of Skills for Success (OSS).
   i. adaptability
   ii. collaboration
   iii. communication
   iv. creativity and innovation
   v. digital
   vi. numeracy
   vii. problem solving
   viii. reading
   ix. writing

3. Identify the Skills for Success / Essential Skills, along with their complexity level, identified as necessary for the learner's trade.
   i. RSOS / NOA content[2]
   ii. OSS Essential Skills Profiles[3]
   iii. OSS tools and support for apprentices and tradespersons[4]

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

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

Practical Requirements:

1. Complete a Skills for Success / Essential Skills self-assessment. The apprentice will use the online Skills and Competencies Canada Self Test[5] and Essential Skills Self-Assessment for the Trades[6] tools, or similar assessment tools as provided by the instructor.

2. Participate in a group discussion about the impact of gaps in Skills for Success / Essential Skills that may be revealed by the self-assessments completed, and the value of improving Skills for Success.

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 Skills for Success, which is available online from Apprenticeship and Trades Certification.

AM1101 Math Essentials

Note: It is recommended that AM1100 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:

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.

AM1361 Power Sport 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.

Note: 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 SD1760 be delivered in the second half of pre-employment training.

Learning Outcomes:

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

Course 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/isl/app/
   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

B. 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 and Wage Rates

Progression Schedule

Power Sport Technician - 5400 Hours			
Apprenticeship Level and Wages			
Level	Wage Rate	Requirements for Progression to Next Level	Next Level
1	60%	▪ Completion of Pre-Employment training ▪ Registration as an apprentice ▪ 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	90%	▪ Completion of Level 3 & 4 training ▪ Pass Level 3 and Level 4 exams* ▪ Minimum 5200 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.

Power Sport Technician - 5400 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)	1061
Level 2	▪ Minimum of 2300 hours of relevant work experience and training	240
Level 3	▪ Minimum of 3800 hours of relevant work experience and training	240
Level 4	▪ Minimum of 5200 hours of relevant work experience and training	

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.

C. Requirements for Provincial Certificate of Qualification

1. Evidence that 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 5400 hours.

   Or

   A total of 8100 hours of suitable work experience.

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

D. 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