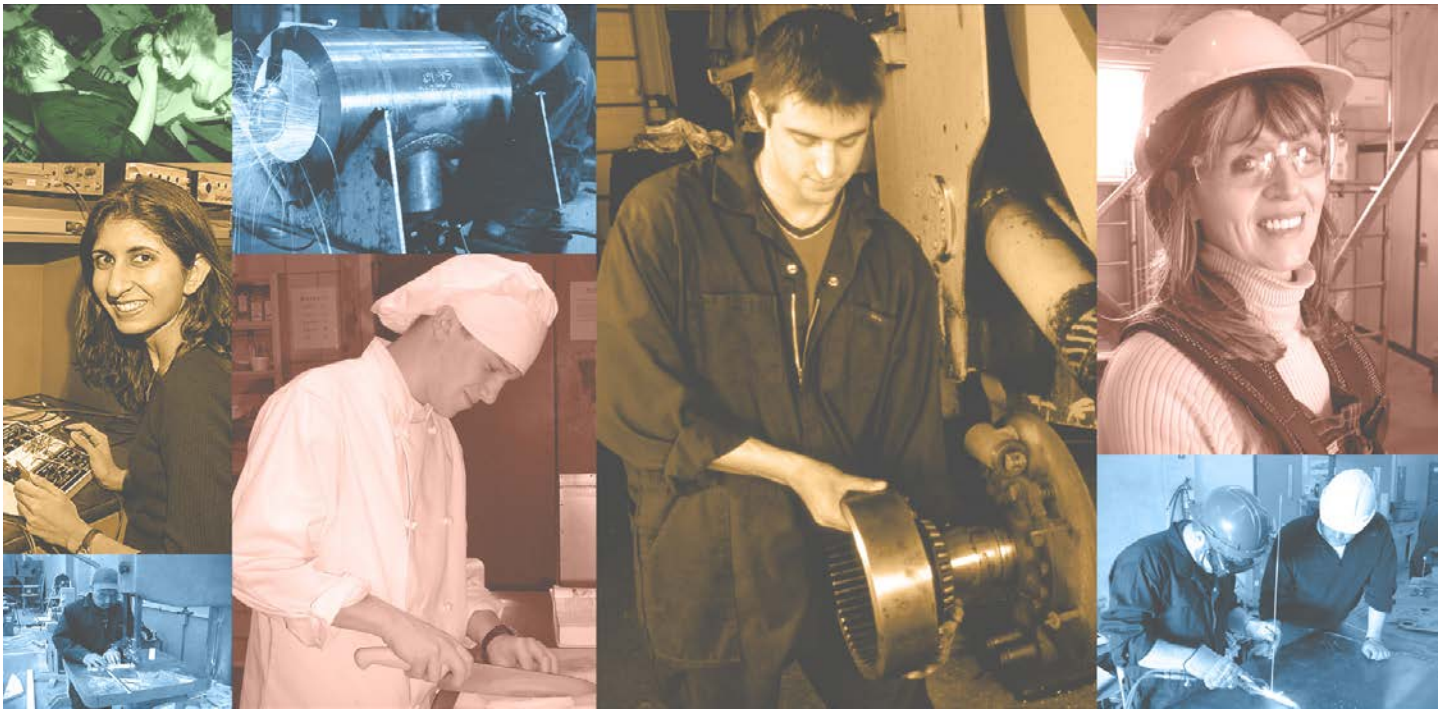
Pre-Employment
Plan of Training
TRUCK TRANSPORT MECHANIC



Newfoundland Labrador

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

March 2017

PLAN OF TRAINING

Truck Transport Mechanic

March 2017

Newfoundland Labrador

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

Approved by:

Chairperson, Provincial Apprenticeship and Certification Board

Date: March 30, 2017

Preface

This curriculum standard is based on the 2015 edition of the National Occupational Analysis for the Truck and Transport Mechanic trade. It describes the curriculum content for the Truck and Transport Mechanic pre-employment training program.

Acknowledgements

Advisory committees, industry representatives, instructors and apprenticeship staff provided valuable input to the development of this pre-employment curriculum standard. Without their dedication to quality apprenticeship training, this document could not have been produced.

We offer a sincere thank you.

Contact Information

Department of Advanced Education, Skills and Labour
Apprenticeship and Trades Certification Division
Tel: 709-729-2729
Toll Free: 1-877-771-3737
Email: app@gov.nl.ca
Web: www.gov.nl.ca/app

Document Status	Date Distributed	Mandatory Implementation Date	Comments
Approved	March 2017	September 2017	Pre-employment version, National Harmonization Compliant

Table of Contents

A. Transfer Matrix

2017 PROGRAM STRUCTURE			2009 PROGRAM STRUCTURE			Course Matrix	
2017 COURSE NUMBER	2017 COURSE TITLE	2017 COURSE HOURS	2009 COURSE NUMBER	2009 COURSE TITLE	2009 COURSE HOURS	MATRIXED (Y/N)	NOTES
SV1191	Fasteners, Tubing, Hoses and Fittings	30	SV1181	Fasteners, Tubings, Hoses, and Fittings	30	Y	Content of both courses has been combined. Both are necessary for transfer. SV2381 Removed.
			SV2381	Hydraulic Fittings, Piping, Tubing and Hoses	25	Y	
SV1452	Gears	12	-	-	-	-	New course
SV1379	Introduction to Starting and Charging Systems	18	-	-	-	-	New course
WD2290	Shielded Metal Arc Welding (SMAW)	15	WD2320	SMAW Welding	30	Y	Moved from Level IV to Pre-employment.
SV1249	Introduction to Suspension Systems	15	-	-	-	-	New course
SV2299	Introduction to Track Type Undercarriages	15	-	-	-	-	New course
SV2491	Pneumatic Systems	20	SV2491	Pneumatic Systems	20	Y	Moved from Level VI to Pre-employment.
SV2689	Introduction to Frames and Chassis	6	-	-	-	-	New course
SV2779	Introduction to Hitches and Couplers	6	-	-	-	-	New course
SV2731	Cab Components	9	SV2727	Cab Components	20	Y	Moved from Level VI to Pre-employment. Hours reduced.
SV2669	Introduction to Heating, Ventilation and Air Conditioning	15	-	-	-	-	New Course

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 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.

Pre-Employment				
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
SV1101	-	Safety	30	None
SV1166	-	Tools and Equipment	30	SV1101
SV1810	-	Preventive Maintenance	5	None
SV1201	-	Start, Move and Park Vehicle	5	None
SV1800	-	Hoisting and Lifting	15	SV1101
SV1151	-	Service Information Systems	25	MC1060
SV1131	-	Electrical and Electronic Principles	55	AM1100
SV1370	-	Batteries	15	TS1530 TS1520 SV1166
SV1491	-	Conventional Lighting Circuits	15	SV1131 SV1370

Pre-Employment				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
				SV1151
SV1501	-	Wiring Harnesses and Accessories	15	SV1131 SV1370 SV1151
SV1379	-	Introduction to Starting and Charging Systems	18	SV1501
SV2661	-	Electronic Ignition Systems	30	SV1501
SV1830	-	Metallurgy	5	None
SV1301	-	Cutting, Heating and Welding	30	SV1101 SV1830
WD2330	-	MIG Welding	30	TS1520 SV1166 SV1830
WD2290	-	Shielded Metal Arc Welding (SMAW)	15	TS1520 SV1166 SV1830
SV1820	-	Bearings	6	SV1166 TS1520
SV1452	-	Gears	12	SV1166 SV1190
SV1121	-	Gaskets and Seals	5	SV1166 TS1520
SV1211	-	Tires, Rims and Wheels	25	SV1166
SV1191	-	Fasteners, Tubing, Hoses, and Fittings	30	SV1166
SV1190	-	Lubrication and Fluids Servicing	30	SV1166 TS1520
SV1141	-	Introduction to Hydraulics	30	None
SV1401	-	Gauges	11	SV1501
SV2391	-	Reservoirs, Coolers and Filters	15	SV2381

Pre-Employment				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
SV1261	-	Vehicle Hydraulic Brake Systems	60	SV1190 SV1181
SV1451	-	Steering Systems	30	SV1190 SV1452
SV1249	-	Introduction to Suspension Systems	15	SV1166 SV1800
SV2491	-	Pneumatic Systems	20	SV1166
SV1271	-	Basic Air Brake Systems	60	SV1261
SV1281	-	Drive Lines	25	SV1190 SV1151
SV2731	-	Cab Components	9	SV1166
SV2689	-	Introduction to Frames and Chassis	6	SV1166 SV1800
SV2779	-	Introduction to Hitches and Couplers	6	SV1166 SV1800
SV2299	-	Introduction to Track Type Undercarriages	15	SV1166 SV1800
SV1303	-	Engine Principles	45	SV1151
SV1310	-	Cooling Systems	30	SV1121
SV1331	-	Intake and Exhaust Systems	25	SV1166 SV1303
SV1361	-	Diesel Fuel Supply Systems	25	SV1166 TS1520
SV2669	-	Introduction to Heating, Ventilation and Air Conditioning (HVAC) Systems	15	SV1131 SV1166
AP1101	-	Introduction to Apprenticeship	15	None
*AM1100	-	Math Essentials	30	None
AM1220	-	Mechanical Math Fundamentals	30	AM1100

Pre-Employment				
Course No.	**AACS No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
CM2160	-	Communication Essentials	45	None
SD1760	-	Workplace Essentials	45	None
MC1060	-	Computer Essentials	15	None
Total			1094	

***A student who can meet the mathematics requirement through an ACUPLACER® test may be exempted from AM1100 - Math Essentials. Please check with your training institution**.

Required Work Experience

PRE-EMPLOYMENT

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.

SV1101 Safety

Learning Outcomes:

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

Duration: 30 Hours

Pre-Requisites: None

Objectives and Content:

1. Identify types of personal protective clothing and equipment and describe their applications.

2. Describe the care and maintenance of personal protective equipment (PPE).

3. Identify workplace hazards and describe safe work practices.
   - i. personal
   - ii. shop/facility
     - fire
     - explosion
     - gases
     - electrical
     - housekeeping
     - awareness of surroundings
   - iii. environmental awareness
   - iv. vehicle/equipment
     - restraint systems
     - high voltage systems
     - high pressure systems
     - hydraulic
     - fuel
     - air

- fire suppression systems

4. Identify and explain workplace safety and health regulations.
   i. federal
      - material safety data sheets (MSDS)
      - workplace hazardous material information system (WHMIS)
   ii. provincial/territorial
      - occupational health and safety (OHS)

Practical Requirements:

1. Locate fire alarms, fire extinguishers, exits.

2. Locate and operate shop ventilation systems.

3. Prepare a floor plan showing fire exit routes.

SV1166 Tools and Equipment

Learning Outcomes:

- Demonstrate knowledge of hand and power tools, their applications, maintenance and procedures for use.
- Demonstrate knowledge of measuring tools, their applications, maintenance and procedures for use.
- Demonstrate knowledge of diagnostic tools, their applications and maintenance.
- Demonstrate knowledge of shop equipment, their applications, maintenance and procedures for use.

Duration: 30 Hours

Pre-Requisites: SV1101 Safety

Objectives and Content:

1. Identify types of hand tools and describe their applications and procedures for use.

2. Describe the procedures used to store and maintain hand tools.

3. Identify types of power tools and describe their applications and procedures for use.
   i. electric
   ii. pneumatic
   iii. hydraulic

4. Describe the procedures used to store and maintain power tools.

5. Identify types of measuring tools and describe their applications and procedures for use.
   i. imperial
   ii. metric

6. Identify types of diagnostic tools and describe their applications.

7. Describe the procedures used to store and maintain measuring and diagnostic tools.

8. Identify types of shop equipment and describe their applications and procedures for use.

9. Describe the procedures used to store and maintain shop equipment.

Practical Requirements:

1. Use hand tools.

2. Store and maintain hand tools.

3. Use power tools.
   i. electric
   ii. pneumatic
   iii. hydraulic

4. Store and maintain power tools.

5. Bench work projects to include the use of common hand tools for;
   i. metal cutting,
   ii. filing,
   iii. measuring,
   iv. drilling,
   v. tapping,
   vi. threading
   vii. broken stud removal.
   viii. Sharpen a twist drill.

6. Wash components with pressure washer equipment.

SV1810 Preventive Maintenance

Learning Outcomes:

- Demonstrate knowledge of preventive maintenance and its purpose.
- Demonstrate knowledge of the procedures used to perform preventive maintenance.

Duration: 5 Hours

Pre-Requisites: None

Objectives and Content:

1. Define terminology associated with preventive maintenance.

2. Describe preventive maintenance programs.
   i. scheduled lubrication
   ii. scheduled servicing
   iii. scheduled cleaning
   iv. inspections
   v. completing documentation
   vi. legal responsibilities

3. Describe the procedures used to perform preventive maintenance.

SV1201 Start, Move and Park Vehicle

Learning Outcomes:

- Demonstrate knowledge of the procedures used to start-up, operate and shut-down equipment/vehicle.
- Demonstrate knowledge of the procedures used to prepare equipment/vehicle to be towed or pushed.
- Demonstrate knowledge of equipment/vehicle lock-out procedures.

Duration: 5 Hours

Pre-Requisites: None

Objectives and Content:

1. Identify hazards and describe safe work practices pertaining to starting, moving and parking vehicles.

2. Describe the procedures used to start-up and shut down equipment/vehicles.

3. Describe the procedures used to operate equipment/vehicles.

4. Describe the procedures used to prepare equipment/vehicles to be towed or pushed.

5. Describe the procedures used to lock-out equipment/vehicles prior to servicing.

Practical Requirements:

1. Start, move and park various types of vehicles.

SV1800 Hoisting and Lifting

Learning Outcomes:

- Demonstrate knowledge of hoisting and lifting equipment, their applications and procedures for use.

Duration: 15 Hours

Pre-Requisites: SV1101 Safety

Objectives and Content:

1. Define terminology associated with hoisting and lifting.

2. Identify hazards and describe safe work practices pertaining to hoisting and lifting.

3. Identify and interpret codes and regulations pertaining to hoisting and lifting.

4. Identify types of hoisting and lifting equipment and describe their applications, limitations and procedures for use.
   i. vehicle/heavy equipment
   ii. component

5. Identify types of hoisting and lifting equipment accessories and describe their applications and procedures for use.

6. Describe the procedures used to inspect, store and maintain hoisting and lifting equipment and accessories.

7. Describe the procedures used to determine lift points and perform lifts.

8. Identify hand signals used to perform hoisting and lifting operations.

Practical Requirements:

1. Raise a vehicle, blocking it using safety stands and cross blocking.

2. Perform a lift using applicable lifting equipment accessories.

SV1151 Service Information Systems

Learning Outcomes:

- Demonstrate the ability to select and use different types of service manuals for heavy equipment and truck and transport.

Duration: 25 Hours

Pre-Requisites: MC1060 Computer Essentials

Objectives and Content:

1. Use operator's manual.
   i. methods of using
   ii. interpretation of sections

2. Use maintenance and lubrication manual.
   i. methods of using
   ii. interpretation of sections

3. Use service manual.
   i. methods of using
   ii. interpretation of sections

4. Use parts manual.
   i. methods of using
   ii. interpretation of sections

5. Use special bulletins.
   i. methods of using
   ii. purpose
   iii. interpretation
   iv. introduction to computers
      - computerized parts information
      - computerized service and repair information

6. Use computerized information systems.
    i. work order
    ii. warranty claims
    iii. time ticket
    iv. tracking procedures
    v. computerized Info System
    vi. electronic service

Practical Requirements:

1. Find serial number of a vehicle on the following items:
    i. chassis
    ii. motor
    iii. transmission

2. With the appropriate manual, find the type and amount of hydraulic oil recommended on a vehicle.
    i. with the appropriate manual find the step by step removal procedure of the engine and transmission of a vehicle
    ii. with the appropriate manual, make a parts list of a cylinder head

SV1131 Electrical and Electronic Principles

Learning Outcomes:

- Demonstrate knowledge of electrical and electronic principles.
- Demonstrate knowledge of the principles of magnetism.
- Demonstrate knowledge of electrical and electronic testing devices and their procedures for use.

Duration: 55 Hours

Pre-Requisite: AM1100 Math Essentials

Objectives and Content:

1. Define terminology associated with electricity, electronics and magnetism.

2. Identify hazards and describe safe work practices pertaining to electricity, electronics and magnetism.

3. Identify the principles of electricity and electronics.

4. Identify the principles of magnetism.

5. Describe Ohm's law and its applications.

6. Describe the procedures used to perform electrical-related calculations using Ohm's law.

7. Identify types of circuits and describe their characteristics and applications.
   i. electrical
   ii. electronic
      - programmable logic controls (PLCs)
      - non-programmable logic controls

8. Identify electrical components and describe their purpose and operation.

9. Identify electronic components and describe their purpose and operation.
   i. diodes
   ii. transistors
   iii. capacitors
   iv. resistors

10. Identify testing devices used to test circuits and describe their application and procedures for use.

11. Identify and interpret information found on schematics.

12. Describe electrical malfunctions and their causes.

13. Describe the procedures used to test circuits.

Practical Requirements:

1. Apply electrical principles using Ohms Law to calculate volts, ohms and amperes.

2. Use testing devices to test circuits/components of series, parallel and series parallel circuits.

3. Read schematics and wiring diagrams.

SV1370 Batteries

Learning Outcomes:

- Demonstrate knowledge of batteries and their operating principles.
- Demonstrate knowledge of the procedures used to service and test batteries.

Duration: 15 Hours

Pre-Requisites:

TS1530	Standard First Aid
TS1520	WHMIS
SV1131	Electrical and Electronic Principles
SV1166	Tools and Equipment

Objectives and Content:

1. Define terminology associated with batteries.

2. Identify hazards and describe safe work practices pertaining to batteries.
   i. personal
   ii. shop/facility
   iii. vehicle

3. Identify equipment used to test and recharge batteries and describe their applications and procedures for use.

4. Identify types of batteries and describe their applications, construction and operating principles.

5. Describe the procedures used to remove and install batteries.
   i. 12 volt systems
   ii. 24 volt systems

6. Describe the procedures used to activate, maintain and store batteries.
   i. maintenance free
   ii. dry charge
   iii. gel

7. Describe the procedures used to start engines with a battery booster.

8. Identify battery problems and describe the procedures used to diagnose and correct them.

Practical Requirements:

1. Remove and install a battery.

2. Service and test a battery.

3. Charge batteries.

4. Connect booster cables at the battery to jump start an engine for a 12 and 24 volt system.

SV1491 Conventional Lighting Circuits

Learning Outcomes:

- Demonstrate knowledge of conventional lighting circuits, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair conventional lighting circuits.

Duration: 15 Hours

Pre-Requisites:

SV1131	Electrical and Electronic Principles
SV1370	Batteries
SV1151	Service Information Systems

Objectives and Content

1. Define terminology associated with conventional lighting circuits.

2. Identify hazards and describe safe work practices pertaining to conventional lighting circuits.

3. Identify specialty tools and equipment used to service and repair conventional lighting circuits and describe their applications and procedures for use.

4. Identify types of conventional lighting circuits and describe their components, purpose and operation.
   i. high voltage
   ii. low voltage

5. Interpret electrical symbols and wiring diagrams relating to conventional lighting circuits.

6. Describe the procedures used to inspect and maintain conventional lighting circuits and their components.

7. Identify conventional lighting circuit problems and their causes.

8. Describe the procedures used to diagnose conventional lighting circuits.

9. Describe the procedures used to remove and install conventional lighting circuit components.

10. Describe the procedures to repair conventional lighting circuits and components.

Practical Requirements:

1. Use specialty tools and equipment to service and repair conventional lighting circuits.

2. Remove, check and reinstall lighting system components.

3. Remove, check and reinstall a gauge and a sending unit.

SV1501 Wiring Harnesses and Accessories

Learning Outcomes:

- Demonstrate knowledge of wiring harnesses and accessories, their purpose and operation.
- Demonstrate knowledge of the procedures used to service and repair wiring harnesses and accessories.

Duration: 15 Hours

Pre-Requisites:

SV1131	Electrical and Electronic Principles
SV1370	Batteries
SV1151	Service Information Systems

Objectives and Content:

1. Define terminology associated with wiring harnesses and accessories.

2. Identify hazards and describe safe work practices pertaining to wiring harnesses and accessories.

3. Identify specialty tools and equipment used to service and repair wiring harnesses and accessories and describe their applications and procedures for use.

4. Identify types of wiring harnesses and their components and describe their purpose and operation.

5. Identify types of wiring accessories and their components and describe their purpose and operation.

6. Identify electrical symbols and wiring diagrams relating to wiring harnesses and accessories.

7. Describe the procedures used to inspect and maintain wiring harnesses and accessories and their components.

8. Identify wiring harness and accessory component problems and their causes.

9. Describe the procedures used to diagnose wiring harnesses and accessories.

10. Describe the procedures used to remove and install wiring harnesses and accessories and their components.

11. Describe the procedures used to repair wiring harnesses and accessories and their components.

Practical Requirements:

1. Use specialty tools and equipment to service and repair wiring harnesses and accessories.

2. Diagnose problems relating to wiring harness and accessories.

3. Replace or repair wiring harness.

SV1379 Introduction to Starting and Charging Systems

Learning Outcomes:

- Demonstrate knowledge of starting and charging systems, their components and operation.

Duration: 18 Hours

Pre-Requisite: SV1501 Wiring Harnesses and Accessories

Objectives and Content:

1. Define terminology associated with starting and charging systems.

2. Identify hazards and describe safe work practices pertaining to starting and charging systems.

3. Identify specialty tools and equipment used to service and repair starting and charging systems and describe their applications and procedures for use.

4. Identify types of starting systems and describe their applications and operation.
   i. electrical
   ii. hydraulic
   iii. pneumatic

5. Identify starting and charging system components and describe their applications and operation.
   i. Cables
   ii. Starting motor
   iii. Starting motor solenoid
   iv. Ignition switch
   v. Alternator
   vi. Belt

Practical Requirements:

1. Inspect electrical starting and charging system components.

SV2661 Electronic Ignition Systems

Learning Outcomes:

- Demonstrate knowledge of electronic ignition systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair electronic ignition systems.

Duration: 30 Hours

Pre-Requisite: SV1501 Wiring Harnesses and Accessories

Objectives and Content:

1. Define terminology associated with electronic ignition systems.

2. Identify hazards and describe safe work practices pertaining to electronic ignition systems.

3. Identify specialty tools and equipment used to service and repair electronic ignition systems and describe their applications and procedures for use.

4. Identify types of electronic ignition systems and describe their operating principles.

5. Identify electronic ignition system components and describe their purpose and operation.

6. Describe the procedures used to inspect and maintain electronic ignition systems and components.

7. Identify electronic ignition system problems and their causes.

8. Describe the procedures used to diagnose electronic ignition systems and components.

9. Describe the procedures used to remove and install electronic ignition system components.

10. Describe the procedures used to repair and adjust electronic ignition systems and components.

Practical Requirements:

1. Use specialty tools and equipment used to service and repair electronic ignition systems.

2. Inspect and maintain electronic ignition systems and components.

3. Check and test high tension leads.

4. Perform a complete tune-up on a gasoline engine.

SV1830 Metallurgy

Learning Outcomes:

- Demonstrate knowledge of metals and their characteristics.
- Demonstrate knowledge of material testing procedures.

Duration: 5 Hours

Pre-Requisites: None

Objectives and Content:

1. Define terminology associated with metallurgy.

2. Identify types of metals and describe their properties.
   i. ferrous
   ii. non-ferrous

3. Identify common metal tests and describe their associated procedures.

SV1301 Cutting, Heating and Welding

Learning Outcomes:

- Demonstrate knowledge of cutting and heating equipment and accessories.
- Demonstrate knowledge of the procedures used to cut and heat using oxy-fuel equipment.
- Demonstrate knowledge of the procedures used to solder, braze and fuse using oxy-fuel equipment.

Duration: 30 Hours

Pre-Requisites: SV1101 Safety
SV1830 Metallurgy

Objectives and Content:

1. Define terminology associated with oxy-fuel cutting and heating.

2. Identify hazards and describe safe work practices pertaining to oxy-fuel cutting and heating.
   i. personal
   ii. shop/facility
      - awareness of surroundings
   iii. equipment/vehicle
   iv. ventilation
   v. cutting and heating equipment

3. Identify and interpret codes and regulations pertaining to oxy-fuel cutting and heating.

4. Identify cutting and heating equipment and accessories and describe their applications.
   i. oxy-fuel
   ii. plasma-arc

5. Describe the procedures used to set-up, adjust and shut-down oxy-fuel equipment.

6. Describe the procedures used to inspect and maintain oxy-fuel equipment.

7. Describe the procedures used to transport and store oxy-fuel equipment.

8. Describe the procedures used to cut and heat material using oxy-fuel equipment.

9. Describe the procedures used to solder, braze and fuse using oxy-fuel equipment.

Practical Requirements:

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

2. Perform flame cutting with oxy-fuel equipment.

3. Perform solder, braze and fuse welding using oxy-fuel equipment.

WD2330 Metal Inert Gas (MIG) Welding

Learning Outcomes:

- Demonstrate knowledge of MIG welding equipment and accessories.
- Demonstrate knowledge of the procedures used to weld using MIG welding equipment.

Duration: 30 Hours

Pre-Requisites:

TS1520	WHMIS
SV1166	Tools and Equipment
SV1830	Metallurgy

Objectives and Content:

1. Define terminology associated with MIG welding.

2. Identify hazards and describe safe work practices pertaining to MIG welding.
   i. personal
   ii. shop/facility
      - awareness of surroundings
   iii. equipment/vehicle
   iv. ventilation
   v. MIG equipment

3. Describe MIG welding processes and their applications.
   i. Gas Metal Arc Welding (GMAW)
   ii. Flux-Cored Arc Welding (FCAW)

4. Identify MIG welding equipment, consumables and accessories and describe their applications.

5. Describe the procedures used to set-up, adjust and shut-down MIG welding equipment.

6. Describe the procedures used to inspect and maintain MIG welding equipment.

7. Identify the types of welds performed using MIG welding equipment.
   i. joints
   ii. positions

8. Describe the procedures used to weld using MIG welding equipment.

9. Describe weld defects, their causes and prevention.

Practical Requirements:

1. Set up and shut down MIG welding equipment.

2. Weld using MIG welding equipment.

SV2290 Shielded Metal Arc Welding (SMAW)

Learning Outcomes:

- Demonstrate knowledge of SMAW equipment and accessories.
- Demonstrate knowledge of the procedures used to weld using SMAW equipment.

Duration: 15 Hours

Pre-Requisite:

TS1520	WHMIS
SV1166	Tools and Equipment
SV1830	Metallurgy

Objectives and Content:

1. Define terminology associated with SMAW.

2. Identify hazards and describe safe work practices pertaining to SMAW.
   i. personal
   ii. shop/facility
   iii. awareness of surroundings
   iv. equipment/vehicle
   v. ventilation
   vi. SMAW equipment

3. Identify and interpret codes and regulations pertaining to SMAW.

4. Describe the SMAW process and its application.

5. Identify SMAW equipment, consumables and accessories and describe their applications and storage requirements.

6. Describe the procedures used to set-up, adjust and shut-down SMAW equipment.

7. Describe the procedures used to inspect and maintain SMAW equipment.

8. Identify the types of welds performed using SMAW equipment.
   i. joints
   ii. positions

9. Describe the procedures used to weld using SMAW equipment.

10. Describe weld defects, their causes and prevention.

Practical Requirements:

1. Strike and maintain an arc.

2. Fillet weld flat position.

SV1820 Bearings

Learning Outcomes:

- Demonstrate knowledge of bearings and their applications.
- Demonstrate knowledge of the procedures to remove and install bearings.

Duration: 6 Hours

Pre-Requisites: SV1166 Tools and Equipment
TS1520 WHMIS

Objectives and Content:

1. Define terminology associated with bearings.

2. Identify hazards and describe safe work practices pertaining to bearings.

3. Identify specialty tools and equipment used to remove and install bearings and describe their applications and procedures for use.

4. Identify types of bearings and describe their applications.
   i. friction
   ii. anti-friction

5. Describe bearing failure and its causes.

6. Describe the procedures used to remove and install bearings.

7. Describe the procedures used to lubricate and adjust bearings.

SV1452 Gears

Learning Outcomes:

- Demonstrate knowledge of gears and their applications.
- Demonstrate knowledge of the procedures to remove and install gears.

Duration: 12 Hours

Pre-Requisites: SV1166 Tools and Equipment
SV1190 Lubrication and Fluids Servicing

Objectives and Content:

1. Define terminology associated with gears.

2. Identify hazards and describe safe work practices pertaining to gears.

3. Identify specialty tools and equipment used to remove and install gears and describe their applications and procedures for use.

4. Identify types of gears and describe their applications.
   i. Straight cut spur
   ii. External
   iii. Internal
   iv. Helical
   v. Rack and pinion
   vi. Bevel
   vii. Spiral
   viii. Worm
   ix. Planetary

5. Describe gear failure and its causes.

6. Describe the procedures used to remove and install gears.

7. Describe the procedures used to lubricate and adjust gears.

SV1121 Gaskets and Seals

Learning Outcomes:

- Demonstrate knowledge of gaskets and seals, their applications and procedures for use.

Duration: 5 Hours

Pre-Requisites: SV1166 Tools and Equipment
TS1520 WHMIS

Objectives and Content:

1. Define terminology associated with gaskets and seals.

2. Identify hazards and describe safe work practices pertaining to gaskets and seals.

3. Identify specialty tools and equipment used to remove and install gaskets and seals and describe their applications and procedures for use.

4. Identify types of gaskets and seals and describe their applications.

5. Describe the procedures used to remove, fabricate and install gaskets.

6. Describe the procedures used to remove and install seals.

7. Identify types of sealing compounds.
   i. room temperature vulcanizing (RTV)
   ii. anaerobic

SV1211 Tires, Rims and Wheels

Learning Outcomes:

- Demonstrate knowledge of tires, rims and wheels, their characteristics and applications.
- Demonstrate knowledge of the procedures used to service and repair tires, rims and wheels.

Duration: 25 Hours

Pre-Requisite: SV1166 Tools and Equipment

Objectives and Content:

1. Define terminology associated with tires, rims and wheels.

2. Identify hazards and describe safe work practices pertaining to tires, rims and wheels.

3. Identify codes and regulations pertaining to tires, rims and wheels.
   i. jurisdictional requirements

4. Identify specialty tools and equipment used to service and repair tires, rims and wheels and describe their applications and procedures for use.

5. Identify types of tires and describe their characteristics and applications.
   i. on-road
      - radial
      - bias-ply
      - tube
      - tubeless
   ii. off-road
      - loaded
      - non-loaded

6. Identify types of rims and wheels and describe their characteristics and applications.

7. Identify tire, rim and wheel components and accessories and describe their purpose.

8. Describe the procedures used to inspect and maintain tires, rims and wheels.

9. Describe the procedures used to remove and install tires, rims and wheels.

10. Describe the procedures used to repair tires, rims and wheels.

11. Describe the procedures used to balance wheels.

Practical Requirements:

1. Use specialty tools and equipment used to service and repair tires, rims and wheels.

2. Inspect and maintain tires, rims and wheels.

3. Remove and install tires, rims and wheels.

SV1191 Fasteners, Tubing, Hoses and Fittings

Learning Outcomes:

- Demonstrate knowledge of fasteners, tubings, hoses and fittings, their applications and procedures for use.
- Demonstrate knowledge of specialty tools and equipment.

Duration: 30 Hours

Pre-Requisite: SV1166 Tools and Equipment

Objectives and Content:

1. Identify hazards and describe safe work practices pertaining to fasteners, tubings, hoses and fittings.

2. Identify specialty tools and equipment used to remove and install fasteners, tubings, hoses and fittings and describe their applications and procedures for use.

3. Identify types of fasteners and describe their applications and procedures for use.

4. Identify types of tubings and hoses and describe their applications and procedures for use.
   i. Hydraulic
   ii. Pneumatic
   iii. Fuel

5. Identify types of fittings and describe their applications and procedures for use.
   i. Hydraulic
   ii. Pneumatic

Practical Requirements:

1. Select and use specialty tools and equipment.

2. Cut, bend and connect copper and steel tubing.

3. Flare copper and steel tubing.
   - International Standards Organization (ISO)
   - inverted flare

4. Remove and install hydraulic hoses.

5. Install a crimped type fitting to a hydraulic hose.

6. Install a reusable type fitting to a hydraulic hose.

SV1190 Lubrication and Fluids Servicing

Learning Outcomes:

- Demonstrate knowledge of lubricants and fluids, their characteristics and applications.
- Demonstrate knowledge of the procedures to lubricate vehicle/equipment components.
- Demonstrate knowledge of the procedures for lubrication and fluid servicing.

Duration: 30 Hours

Pre-Requisites: SV1166 Tools and Equipment
TS1520 WHMIS

Objectives and Content:

1. Define terminology associated with lubrication and fluids servicing.

2. Identify hazards and describe safe work practices pertaining to lubrication and fluid servicing.
   i. personal
   ii. equipment
   iii. environmental

3. Identify specialty tools and equipment used for lubrication and fluid servicing and describe their applications and procedures for use.

4. Identify types of lubricants and fluids and describe their applications.

5. Identify the properties and characteristics of lubricants and fluids.

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

7. Describe the procedures used to check lubricant and fluid levels and condition.

8. Describe the procedures used to take samples and analyze fluids.

9. Describe the procedures used to change fluids and filters.

10. Describe the procedures used to lubricate vehicle/equipment components.

11. Identify types of automatic lubrication systems and describe their purpose and operation.

12. Describe the procedures used to service and maintain automatic lubrication systems.

13. Describe the procedures used to handle, store and dispose of lubricants and fluids.

Practical Requirements:

1. Check fluid level on vehicles/equipment components.

2. Change engine oil and filter on a vehicle/equipment.

3. Perform a complete lubrication service on a vehicle/equipment.

SV1141 Introduction to Hydraulics

Learning Outcomes:

- Demonstrate knowledge of the principles of hydraulics.
- Demonstrate knowledge of hydraulic components, their purpose and operation.

Duration: 30 Hours

Pre-Requisites: None

Objectives and Content:

1. Define terminology associated with hydraulics.

2. Identify hazards and describe safe work practices pertaining to hydraulics.

3. Describe the principles and theories of hydraulics.
   i. Pascal's law
   ii. Bernoulli's principle

4. Describe units of measure as they relate to hydraulics.

5. Identify hydraulic-related formulae and describe their applications.

6. Identify and interpret hydraulic-related symbols and abbreviations found on schematics.

7. Describe the properties of hydraulic fluids.

8. Identify hydraulic components and describe their purpose, applications and operation.
   i. pumps
      - positive displacement
      - non-positive displacement
   ii. actuators
      - linear

- rotary

iii. pressure control valves
iv. directional control valves
v. flow control valves
vi. reservoirs
vii. fittings, piping, tubing and hoses
viii. coolers
ix. filters
x. accumulators

Practical Requirements:

1. Apply hydraulic principles and theories for a simple hydraulic circuit.

SV1401 Gauges

Learning Outcomes:

- Demonstrate knowledge of gauges, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair gauges.

Duration: 11 Hours

Pre-Requisite: SV1501 Wiring Harnesses and Accessories

Objectives and Content:

1. Define terminology associated with gauges.
2. Identify hazards and describe safe work practices pertaining to gauges.
3. Identify specialty tools and equipment used to service and repair gauges and describe their applications and procedures for use.
4. Identify types of gauges and their components and describe their purpose and operation.
5. Identify electrical symbols and wiring diagrams relating to gauges.
6. Describe the procedures used to inspect and maintain gauges and their components.
7. Identify gauge problems and their causes.
8. Describe the procedures used to diagnose gauge circuits and their components.
9. Describe the procedures used to remove and install gauges and their components.
10. Describe the procedures to repair and calibrate gauge components.

Practical Requirements:

1. Use specialty tools and equipment used to service and repair gauges.

2. Remove, check and reinstall gauges and sending units.

3. Diagnose gauge circuits and their components.

SV2391 Reservoirs, Coolers and Filters

Learning Outcomes:

- Demonstrate knowledge of reservoirs, coolers and filters, their applications and operation.
- Demonstrate knowledge of the procedures used to service and repair reservoirs, coolers and filters.

Duration: 15 Hours

Pre-Requisite: SV2381 Hydraulic Fittings, Piping, Tubing and Hoses

Objectives and Content:

1. Define terminology associated with reservoirs, coolers and filters.

2. Identify hazards and describe safe work practices pertaining to reservoirs, coolers and filters.

3. Identify specialty tools and equipment used to service and repair reservoirs, coolers and filters and describe their applications and procedures for use.

4. Identify types of reservoirs and describe their characteristics and applications.
   i. vented
   ii. pressurized

5. Identify reservoir components and describe their purpose and operation.

6. Identify types of coolers and filters and describe their characteristics and applications.

7. Identify cooler and filter components and describe their purpose and operation.

8. Describe the procedures used to inspect and maintain reservoirs, coolers and filters and their components.

9. Identify reservoir, cooler and filter problems and describe their causes.

10. Describe the procedures used to diagnose reservoirs, coolers and filters and their components.

11. Describe the procedures used to remove and install reservoirs, coolers and filters and their components.

12. Describe the procedures used to repair reservoirs and coolers and their components.

Practical Requirements:

1. Drain hydraulic fluids and refill reservoir.

2. Remove, service, and install hydraulic filters.

3. Check condition and service hydraulic oil cooler.

SV1261 Vehicle Hydraulic Brake Systems

Learning Outcomes:

- Demonstrate knowledge of vehicle hydraulic brake systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair vehicle hydraulic brake systems.

Duration: 60 Hours

Pre-Requisites: SV1190 Lubrication and Fluids Servicing
SV1181 Fasteners, Tubing Hoses and Fittings

Objectives and Content:

1. Define terminology associated with vehicle hydraulic brake systems.

2. Identify hazards and describe safe work practices pertaining to vehicle hydraulic brake systems.

3. Identify specialty tools and equipment used to service and repair vehicle hydraulic brake systems and describe their applications and procedures for use.

4. Identify types of vehicle hydraulic brake systems and describe their applications and operation.
   i. drum
   ii. disc

5. Identify vehicle hydraulic brake system components and describe their purpose and operation.

6. Describe the procedures used to inspect and maintain vehicle hydraulic brake systems and their components.

7. Identify vehicle hydraulic brake system problems and their causes.

8. Describe the procedures used to diagnose vehicle hydraulic brake systems.

9. Describe the procedures used to remove and install vehicle hydraulic brake system components.

10. Describe the procedures used to repair and adjust vehicle hydraulic brake systems and their components.

Practical Requirements:

1. Disassemble, inspect, repair and assemble a master cylinder.

2. Disassemble, inspect, repair and assemble drum brakes.

3. Disassemble, inspect, repair and assemble disc brakes.

4. Machine a brake drum and brake rotor.

SV1451 Steering Systems

Learning Outcomes:

- Demonstrate knowledge of steering systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair steering systems.

Duration: 30 Hours

Pre-Requisite: SV1190 Lubrication and Fluids Servicing
SV1452 Gears

Objectives and Content:

1. Define terminology associated with steering systems.

2. Identify hazards and describe safe work practices pertaining to steering systems.

3. Identify specialty tools and equipment used to service and repair steering systems and describe their applications and procedures for use.

4. Identify types of steering systems and describe their applications and operation.

5. Identify steering components and describe their purpose and operation.
   i. steering columns
   ii. steering linkage
   iii. gear boxes

6. Describe the procedures used to inspect and maintain steering systems and their components.

7. Identify steering systems problems and their causes.

8. Describe the procedures used to diagnose steering systems.

9. Describe the procedures used to remove and install steering system components.

10. Describe the procedures used to repair and adjust steering system components.

Practical Requirements:

1. Use specialty tools and equipment used to service and repair steering systems.
2. Inspect and maintain steering systems and their components.
3. Disassemble and reassemble steering columns.
4. Disassemble and assemble steering linkage.
5. Adjust steering linkage.

SV1249 Introduction to Suspension Systems

Learning Outcomes:

- Demonstrate knowledge of steering systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair steering systems.

Duration: 15 Hours

Pre-Requisite: SV1166 Tools and Equipment
SV1800 Hoisting and Lifting

Objectives and Content:

1. Define terminology associated with front and rear suspensions.

2. Identify hazards and describe safe work practices pertaining to front and rear suspensions.

3. Identify specialty tools and equipment used to service and repair front and rear suspensions and describe their applications and procedures for use.

4. Identify the types of front and rear suspensions and describe their characteristics and applications.
   i. Leaf spring
   ii. Shock absorber

5. Identify front and rear suspension components and describe their purpose and operation.

6. Describe the procedures used to inspect and maintain front and rear suspension components.

Practical Requirements:

1. Inspect and maintain front and rear suspension components.

SV2491 Pneumatic Systems

Learning Outcomes:

- Demonstrate knowledge of pneumatic systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair pneumatic systems and components.

Duration: 20 Hours

Pre-Requisite: SV1166 Tools and Equipment

Objectives and Content:

1. Define terminology associated with pneumatic systems.

2. Identify hazards and describe safe work practices pertaining to pneumatic systems.

3. Describe the principles and theories of pneumatics.
   i. Charles' law
   ii. Boyle's law

4. Describe units of measure as they relate to pneumatics.

5. Identify pneumatic related formulae and describe their applications.

6. Identify and interpret pneumatic related symbols and abbreviations found on schematics.

7. Identify specialty tools and equipment used to service and repair pneumatic systems and describe their applications and procedures for use.

8. Identify types of pneumatic systems and describe their applications and operation.
   i. portable air compressors
      - rotary
        - single-stage
        - two-stage
      - reciprocating
        - single-stage
        - two-stage

9. Identify pneumatic system components and describe their purpose and operation.

10. Describe the procedures used to inspect and maintain pneumatic systems and components.

11. Identify pneumatic system problems and their causes.

12. Describe the procedures used to diagnose pneumatic systems.

13. Describe the procedures used to remove and install pneumatic system components.

14. Describe the procedures used to adjust and repair pneumatic systems.

Practical Requirements:

1. Use specialty tools and equipment used to service and repair pneumatic systems.

2. Inspect and maintain pneumatic systems and components.

3. Start-up, operate and shut down a portable air compressor.

4. Check and adjust air pressure on an air compressor.

5. Service and repair an air compressor unit.

SV1271 Basic Air Brake Systems

Learning Outcomes:

- Demonstrate knowledge of basic air brake systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair basic air brake systems.

Duration: 60 Hours

Pre-Requisite: SV1261 Vehicle Hydraulic Brake Systems

Objectives and Content:

1. Define terminology associated with basic air brake systems.

2. Identify hazards and describe safe work practices pertaining to basic air brake systems.

3. Identify specialty tools and equipment used to service and repair basic air brake systems and describe their applications and procedures for use.

4. Identify types of basic air brake systems and describe their applications and operation.
   i. air
   ii. air over hydraulic

5. Identify basic air brake system components and describe their purpose and operation.
   i. compressors
   ii. reservoirs
   iii. governors
   iv. hoses, lines and fittings
   v. air dryers
   vi. foundation brakes
   vii. brake chambers

viii. valves
ix. indicators and warning devices

6. Describe the procedures used to inspect and maintain basic air brake systems and components.

7. Identify basic air brake system problems and their causes.

8. Describe the procedures used to diagnose basic air brake systems.

9. Describe the procedures used to remove and install basic air brake system components.

10. Describe the procedures used to repair and adjust basic air brake system components.

Practical Requirements:

1. Remove and install basic air brake system components.

2. Use specialty tools and equipment to service and repair basic air brake systems.

3. Disassemble, inspect, repair and assemble air compressors.

4. Disassemble inspect, repair and assemble air valves.

5. Disassemble, inspect, repair and assemble drum and disc air brakes.

SV1281 Drive Lines

Learning Outcomes:

- Demonstrate knowledge of drive lines, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair drive lines.

Duration: 25 Hours

Pre-Requisites: SV1190 Lubrication and Fluids Servicing
SV1151 Service Information Systems

Objectives and Content:

1. Define terminology associated with drive lines.
2. Identify hazards and describe safe work practices pertaining to drive lines.
3. Identify specialty tools and equipment used to service and repair drive lines and describe their applications and procedures for use.
4. Identify drive line configurations and describe their characteristics and operation.
5. Identify drive line components and describe their purpose and operation.
6. Describe the procedures used to inspect and maintain drive line components.
7. Identify drive line problems and their causes.
8. Describe the procedures used to diagnose drive lines.
9. Describe the procedures used to remove and install drive line components.
10. Describe the procedures used to repair and adjust drive line components.

Practical Requirements:

1. Use specialty tools and equipment used to service and repair drive lines.

2. Remove and replace drive shaft, check phasing, alignment and shaft angle.

3. Remove service and install a universal joint.

4. Remove and install center support bearing.

SV2731 Cab Components

Learning Outcomes:

- Demonstrate knowledge of cab components, their purpose and operation.
- Demonstrate knowledge of the procedures used to service and repair cab components.

Duration: 9 Hours

Pre-Requisite: SV1166 Tools and Equipment

Objectives and Content:

1. Define terminology associated with cab components.

2. Identify hazards and describe safe work practices pertaining to cab components.

3. Identify cab components and describe their purpose and operation.
   i. interior
      - pedals
      - seats
      - restraints
      - side windows
   ii. exterior
      - wipers
      - windshields
      - mirrors
      - door handles
      - steps
      - latches and cables

4. Describe the procedures used to inspect and maintain cab components.

5. Describe the procedures used to remove and install cab components.

6. Describe the procedures used to repair and adjust cab components.

Practical Requirements:

1. Adjust door striker.

SV2689 Introduction to Frames and Chassis

Learning Outcomes:

- Demonstrate knowledge of frames and chassis, their components and characteristics.

Duration: 6 Hours

Pre-Requisite: SV1166 Tools and Equipment
SV1800 Hoisting and Lifting

Objectives and Content:

1. Define terminology associated with frames and chassis.

2. Identify hazards and describe safe work practices pertaining to frames and chassis.

3. Identify and interpret codes and regulations pertaining to frames and chassis.
   i. jurisdictional requirements

4. Identify specialty tools and equipment used to service and repair frames and chassis and describe their applications and procedures for use.

5. Identify types of truck frames and their components and describe their purpose and characteristics.

Practical Requirements:

None

SV2779 Introduction to Hitches and Couplers

Learning Outcomes:

- Demonstrate knowledge of trailer coupling devices, their components and operation.

Duration: 6 Hours

Pre-Requisite: SV1166 Tools and Equipment
SV1800 Hoisting and Lifting

Objectives and Content:

1. Define terminology associated with trailer coupling devices.

2. Identify hazards and describe safe work practices pertaining to trailer coupling devices.

3. Identify specialty tools and equipment used to service and repair trailer coupling devices and describe their applications and procedures for use.

4. Identify types of trailer coupling devices and describe their purpose and operation.
   i. fifth wheels
   ii. pintle hook couplers

5. Describe the procedures used to inspect and maintain trailer coupling devices.

Practical Requirements:

1. Inspect and maintain trailer coupling devices.

SV2299 Introduction to Track-Type Undercarriages

Learning Outcomes:

- Demonstrate knowledge of track-type undercarriages, their components and operation.

Duration: 15 Hours

Pre-Requisite: SV1166 Tools and Equipment
SV1800 Hoisting and Lifting

Objectives and Content:

1. Define terminology associated with track type undercarriages.

2. Identify hazards and describe safe work practices pertaining to track-type undercarriages.

3. Identify specialty tools and equipment used to service and repair track-type undercarriages and describe their applications and procedures for use.

4. Identify track-type undercarriage components and describe their purpose and operation.

5. Describe the procedures used to inspect and maintain track-type undercarriages and their components.

6. Describe the procedures used to adjust track chain tension.

Practical Requirements:

1. Inspect and maintain track-type undercarriages and their components.

2. Make track sag adjustments to the manufacturer's specifications.

SV1303 Engine Principles

Learning Outcomes:

- Demonstrate knowledge of engine operating principles.
- Demonstrate knowledge of major engine components, their purpose and operation.

Duration: 45 Hours

Pre-Requisite: SV1151 Service Information Systems

Objectives and Content:

1. Define terminology associated with engine principles.
2. Explain the principles and theories of engine operation.
3. Identify types and classifications of engines and describe their applications.
4. Identify major engine components and describe their purpose and operation.

Practical Requirements:

None

SV1310 Cooling Systems

Learning Outcomes:

- Demonstrate knowledge of engine cooling systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair cooling systems.

Duration: 30 Hours

Pre-Requisite: SV1121 Gaskets and Seals

Objectives and Content:

1. Define terminology associated with cooling systems.

2. Identify hazards and describe safe work practices pertaining to cooling systems and their components.

3. Identify specialty tools and equipment used to service and repair cooling systems and describe their applications and procedures for use.

4. Identify types of cooling systems and describe their applications and operation.
   i. liquid-cooled
   ii. air-cooled

5. Identify cooling system components and describe their purpose and operation.

6. Identify types of cooling system fluids and describe their characteristics and applications.

7. Describe the procedures used to handle and dispose of cooling system fluids.

8. Identify cooling system fluid tests and describe their associated procedures.

9. Describe the procedures used to service cooling systems.

10. Describe the procedures used to inspect and maintain cooling systems and components.

11. Identify cooling system problems and their causes.

12. Describe the procedures used to diagnose cooling systems and components.

13. Describe the procedures used to remove and install cooling system components.

14. Describe the procedures used to repair cooling systems and components.

Practical Requirements:

1. Use specialty tools and equipment used to service and repair cooling system.

2. Drain, flush, refill and pressure test a cooling system.

3. Remove, service, and install a thermostat.

4. Remove, service, and install a radiator/pressure cap.

5. Remove, repair and install a water pump.

6. Check antifreeze strength in a cooling system.

SV1331 Intake and Exhaust Systems

Learning Outcomes:

- Demonstrate knowledge of intake and exhaust systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair intake and exhaust systems.

Duration: 25 Hours

Pre-Requisites: SV1166 Tools and Equipment
SV1303 Engine Principles

Objectives and Content:

1. Define terminology associated with intake and exhaust systems.

2. Identify hazards and describe safe work practices pertaining to intake and exhaust systems.

3. Identify specialty tools and equipment used to service and repair intake and exhaust systems and describe their applications and procedures for use.

4. Identify types of air filtration systems and describe their applications and operation.

5. Identify intake system components and describe their purpose and operation.

6. Identify exhaust system components and describe their purpose and operation.

7. Describe the procedures used to inspect and maintain intake and exhaust systems and components.

8. Identify intake and exhaust system problems and their causes.

9. Describe the procedures used to diagnose intake and exhaust systems and components.

10. Describe the procedures used to remove and install intake and exhaust system components.

11. Describe the procedures used to repair intake and exhaust systems and components.

Practical Requirements:

1. Service air cleaner assemblies.

2. Inspect and maintain intake and exhaust systems and components.

3. Remove, inspect and replace exhaust system components.

4. Check intake restrictions using manometers.

5. Check exhaust restrictions using backpressure gauge.

SV1361 Diesel Fuel Supply Systems

Learning Outcomes:

- Demonstrate knowledge of diesel fuel supply systems, their components and operation.
- Demonstrate knowledge of the procedures used to service and repair diesel fuel supply systems.

Duration: 25 Hours

Pre-Requisites: SV1166 Tools and Equipment
TS1520 WHMIS

Objectives and Content:

1. Define terminology associated with diesel fuel supply systems.

2. Identify hazards and describe safe work practices pertaining to diesel fuel supply systems.

3. Identify the properties and characteristics of diesel fuels and describe their handling and storage procedures.

4. Identify specialty tools and equipment used to service and repair diesel fuel supply systems and describe their applications and procedures for use.

5. Identify diesel fuel supply system components and describe their purpose and operation.

6. Describe the procedures used to inspect and maintain diesel fuel supply systems and components.

7. Identify diesel fuel supply system problems and their causes.

8. Describe the procedures used to diagnose diesel fuel supply system and components.

9. Describe the procedures used to remove and install diesel fuel supply system components.

10. Describe the procedures used to disassemble and assemble diesel fuel supply system components.

11. Describe the procedures used to repair and adjust diesel fuel supply systems and component.

Practical Requirements:

1. Use specialty tools and equipment to service and repair diesel fuel supply systems.

2. Inspect and maintain diesel fuel supply systems and components.

3. Check transfer pump performance.
   i. pressure
   ii. vacuum
   iii. delivery

4. Change fuel filters, bleed system and start engine.

SV2669 Introduction to Heating, Ventilation and Air Conditioning (HVAC) Systems

Learning Outcomes:

- Demonstrate knowledge of HVAC systems, their components and operation.
- Demonstrate knowledge of the procedures used to service HVAC systems.

Duration: 15 Hours

Pre-Requisite: SV1131 Electrical and Electronic Principles
SV1166 Tools and Equipment

Objectives and Content:

1. Define terminology associated with HVAC systems.

2. Identify hazards and describe safe work practices pertaining to HVAC systems.

3. Identify types of HVAC systems and describe their applications and operation.
   i) cab
   ii) auxiliary

3. Identify codes and regulations pertaining to air conditioning systems.
   i) Certification requirements

4. Identify specialty tools and equipment used to service and repair HVAC systems and describe their applications and procedures for use.

5. Identify refrigerant types and describe their characteristics and applications.

6. Identify HVAC system components and describe their purpose and operation.

7. Describe the procedures used to inspect and maintain HVAC system and components.

8. Identify cab sealing systems and describe their purpose and operation.

Practical Requirements:

1. Test a blower motor resistor.

AP1101 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: 15 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Define the following terms:
   i. apprenticeship
   ii. apprentice vs. registered apprentice
   iii. Journeyperson vs. Certified Journeyperson
   iv. Certificate of Apprenticeship
   v. Certificate of Qualification
   vi. Recognition of Prior Learning
   vii. dual certification

2. Explain the apprenticeship system in Newfoundland and Labrador and the roles and responsibilities of those involved.
   i. registered apprentice
   ii. training institution
   iii. employer
   iv. Journeyperson
   v. Department of Advanced Education and Skills
      - Industrial Training Section
      - Standards and Curriculum Section
   vi. Provincial Trade Advisory Committees
   vii. Provincial Apprenticeship and Certification Board

3. Identify the Conditions Governing Apprenticeship.

4. Describe the training and educational requirements.
   i. pre-employment (entry level) training
   ii. block release
   iii. on-the-job

5. Explain the steps in the registered apprenticeship process.
   i. criteria for eligibility
      - entrance requirements as per Conditions of Apprenticeship
      - employment
   ii. registration process
      - application requirements
   iii. Memorandum of Understanding
      - probation period
      - cancellation
   iv. Record of Occupational Progress (Logbook)
      - signing off skills
      - recording hours
      - updating PDO on progress
   v. class calls
      - schedule
      - EI Eligibility
      - Direct Entry
      - advanced level
   vi. Block Exams
   vii. progression
      - schedule
      - wage rates
   viii. cancellation of apprenticeship
   ix. Practical Examinations
   x. Provincial and Interprovincial examinations
   xi. certification
      - Certification of Apprenticeship
      - Certification of Qualification
      - Provincial certification
      - Interprovincial Red Seal endorsement

6. Explain the Interprovincial Standards Red Seal Program.
   i. designated Red Seal trade
   ii. the National Occupational Analysis (NOA)
   iii. Interprovincial (IP) Red Seal Endorsement Examination
   iv. relationship of NOA to IP Examination
   v. qualification recognition and mobility

7. Identify the current financial incentives available to apprentices.

8. Explain the NL apprenticeship and trades certification division's out-of- province apprenticeship policy.

Practical Requirements:

1. Use the Provincial Apprenticeship and Trades Certification web site at www.gov.nl.ca/app to:
   i. locate, download, and complete the Application for Apprenticeship and Memorandum of Understanding (MOU)
   ii. locate, download, and complete the Out of Province registration forms
      - Application for Apprenticeship (out of province)
      - Letter of Understanding (LOU)
      - Acceptance of Conditions Letter
   iii. locate, download, and complete the Work Experience Credits form
   iv. identify the locations of all Industrial Training offices
   v. locate and review the following learning resources relevant to the trade:
      - Study Guide
      - Exam Preparation Guide
      - Plan of Training

2. Use a logbook for this trade to:
   i. identify the hours for the trade (in-school and on-the-job)
   ii. identify the number of blocks
   iii. identify the courses in each block
   iv. identify the workplace skills to be completed and verified

3. Use the Red Seal Web site, http://www.red-seal.ca to retrieve the National Occupational Analyses (NOA) for this trade.
   i. identify the following components of the NOA:
      - Trends
      - Scope
      - Key Competencies
      - Blocks
      - Tasks
      - Subtasks
      - Pie Charts
      - Table of Specifications

AM1100 Math Essentials

Note: It is recommended that AM1100 be delivered in the first semester of the Entry Level training program.

Learning Outcomes:

- Demonstrate knowledge of the numeracy skills required to begin the 2nd level math course.
- 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: 30 Hours

Pre-Requisite(s): None

Objectives and Content:

Wherever possible, the instructor should use trade specific examples to reinforce the course objectives

1. Use multiplication tables from memory.

2. Perform whole number operations.
   ii. read, write, count, round off, add, subtract, multiply and divide whole numbers

3. Apply the order of operations in math problems.

4. Perform fraction and mixed number operations.
   i. read, write, add, subtract, multiply and divide fractions

5. Perform decimal operations.
   i. read, write, round off, add, subtract, multiply and divide decimals

6. Perform percent/decimal/fraction conversion and comparison.
   i. convert between fractions, decimals and percents

7. Perform percentage operations.
   i. read and write percentages
   ii. calculate base, rates and percentages

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

9. Use the imperial measurement system in math problems.
   i. identify units of measurement for:
      - length
      - mass
      - area
      - volume
      - capacity

10. Use the metric measurement system in math problems.
    i. identify units of measurement for:
       - length
       - mass
       - area
       - volume
       - capacity

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.

AM1220 Mechanical 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.
- Demonstrate knowledge of solving mathematical word problems.
- Demonstrate 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: 30 Hours

Pre-Requisite(s): AM1100 Math Essentials

Objectives and Content:

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

1. Employ percent/decimal/fraction conversion and comparison in trade specific situations.

2. Apply ratios and proportions to trade specific problems.

3. Use the Imperial Measurement system in trade specific applications.

4. Use the Metric Measurement system in trade specific applications.

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

6. Manipulate formulas using cross multiplication, dividing throughout, elimination, and substitution to solve trade specific problems, such as:
   i. right angle triangles
   ii. area
   iii. volume
   iv. perimeter

7. Perform calculations involving geometry that are relevant to the trade, such as:
   i. angle calculations
   ii. circle calculations

8. Use practical math skills 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 has been designated as 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.

CM2160 Communication Essentials

Learning Outcomes:

- Demonstrate knowledge of the importance of well-developed writing skills in the workplace and in career development.
- Demonstrate knowledge of the purpose of various types of workplace correspondence.
- Demonstrate knowledge of the principles of effective workplace writing.
- Demonstrate knowledge of standard formats for letters and memos.
- Demonstrate knowledge of principles related to writing effective letters and memos.
- Demonstrate the ability to prepare and deliver an oral presentation.
- Demonstrate knowledge of the importance of effective interpersonal skills in the workplace.

Duration: 45 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 the principles for writing clear, concise, complete sentences and paragraphs which adhere to the conventions of grammar, punctuation, and mechanics.

2. Identify the principles of effective workplace writing.
   - i. describe the value of well-developed writing skills to career success
   - ii. discuss the importance of tone, and language or word choice in workplace communication, regardless of the circumstances
   - iii. demonstrate an awareness of cultural differences when preparing workplace correspondence
   - iv. describe the writing process as it applies to workplace communication
     - planning
     - writing

- editing/revising

v. identify the parts of a business letter and memo, and when each should be used in the workplace

vi. identify the standard formats for business letters and memos

vii. identify guidelines for writing sample letters and memos which convey:
- acknowledgment
- routine request
- routine response
- complaint
- refusal
- persuasive request
- letters of appeal

3. Identify types of informal workplace documents.

i. identify types & purposes of reports
- incident
- process
- progress

ii. identify common trade specific forms

iii. describe primary and secondary methods used to gather information

iv. discuss the importance of accuracy and completeness in reports and forms

4. Identify the elements of presentations used in the workplace.

i. identify presentation types
- impromptu
- informative
- demonstration
- persuasive

ii. identify the components of an effective presentation
- eye contact
- body language
- vocal qualities
- audience analysis
- multimedia tools
- keeping on topic

5. Demonstrate an understanding of interpersonal communications in the workplace.
   i. identify listening techniques
   ii. demonstrate an understanding of group dynamics
   iii. describe the importance of contributing information and expertise in the workplace
   iv. describe the importance of respectful and open communication in the workplace
   v. identify methods to accept and provide feedback in a constructive and considerate manner
   vi. explain the role of conflict in a group to reach solutions

6. Identify acceptable workplace uses of communication technologies.
   i. cell / Smart Phone etiquette
   ii. voice mail
   iii. e-mail
   iv. teleconferencing / videoconferencing for meetings and interviews
   v. social networking
   vi. other emerging technologies

Practical Requirements:

1. Write well-developed, coherent, unified paragraphs.

2. Write sample letters and memos.

3. Write one short informal report.

4. Complete a selection of at least 3 trade-related forms.

5. Deliver an effective oral presentation.

SD1760 Workplace Essentials

Note: It is recommended that SD1760 be delivered in the second half of the Entry Level training program.

Learning Outcomes:

- Demonstrate knowledge of workplace essentials in the areas of meetings, unions, workers compensation, workers' rights, and human rights.
- Demonstrate knowledge of good customer service practices.
- Demonstrate knowledge of effective job search techniques.

Duration: 45 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 common practices related to workplace meetings.
   i. identify and discuss meeting format and preparation required for a meeting
   ii. explain the purpose of an agenda
   iii. explain the expected roles, responsibilities, and etiquette of meeting participants

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

3. Demonstrate an understanding of the Worker's Compensation process.
   i. describe the aims, objectives, regulations and benefits of the Workplace Health, Safety and Compensation Commission
   ii. explain the role of the Workers Advisor
   iii. explain the internal review process

4. Demonstrate an understanding of workers' rights.
   i. define labour standards
   ii. identify 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. examine the Human Rights Code and explain the role of the Human Rights Commission
   ii. define harassment in various forms and identify strategies for prevention
      - direct
      - systemic
      - adverse effect
   iii. identify gender and stereotyping issues in the workplace
   iv. define basic concepts and terms related to workplace diversity including age, race, culture, religion, socio-economic status, and sexual orientation

6. Demonstrate an understanding of quality customer service.
   i. explain why quality service is important
   ii. identify barriers to quality customer service
   iii. identify customer needs & common methods for meeting them
   iv. identify and discuss the characteristics & importance of a positive attitude
   v. identify the importance of demonstrating good communication skills including body language, listening, questioning, and when using electronic communication devices
   vi. identify techniques for interacting with challenging customers to address complaints and resolve conflict

7. Demonstrate an understanding of effective job search techniques.
    i. identify and explain employment trends, opportunities, and sources of employment
    ii. identify and discuss essential skills for the trades as outlined by Human Resources and Skills Development Canada
    iii. review job ads and identify the importance of fitting qualifications to job requirements
    iv. identify the characteristics of effective resumes, the types of resumes, and principles of resume formatting
    v. identify the characteristics of an effective cover letter
    vi. identify the components of a portfolio, and discuss the value of establishing and maintaining a personal portfolio
    vii. identify the common characteristics of the job interview process:
        - pre-interview preparation
        - interview conduct
        - post-interview follow up

Practical Requirements:

1. Create a resume.

2. Create a cover letter.

3. Participate in a mock job interview.

MC1060 Computer Essentials

Learning Outcomes:

- Demonstrate knowledge of computer systems and their operation.
- Demonstrate knowledge of popular software packages and their applications.
- Demonstrate knowledge of security issues related to computers.

Duration: 15 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 the major external components of a microcomputer system.
   i. input devices
   ii. output devices
   iii. central control unit

2. Use operating system software.
   i. start and quit a program
   ii. use the help function
   iii. use the find function
   iv. maximize and minimize a window
   v. use the task bar
   vi. adjust desktop settings such as screen savers, screen resolution, and backgrounds
   vii. shut down a computer

3. 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

4. Use word processing software to create documents.
   i. enter text
   ii. indent and tab text
   iii. change text attributes (bold, underline, font, etc.)
   iv. change layout format (margins, alignment, line spacing)
   v. spell check and proofread
   vi. edit text
   vii. save document
   viii. print document
   ix. close document
   x. retrieve documents

5. Use spreadsheet software to create spreadsheets.
   i. enter data in cells
   ii. create formulas to add, subtract, multiply and divide
   iii. save spreadsheet
   iv. print spreadsheet
   v. close spreadsheet
   vi. retrieve spreadsheet

6. Access the Internet.
   i. access websites using the world wide web(www)
   ii. identify examples of web browsers
   iii. use search engines with common searching techniques
   iv. describe security issues

7. Use electronic mail.
    i. describe e-mail etiquette
        - grammar and punctuation
        - privacy and legal issues when sharing and forwarding e-mail
        - work appropriate content
        - awareness of employer policies
    ii. manage e-mail using the inbox, sent, and deleted folders
    iii. send an e-mail message with attachment(s)
    iv. print e-mail

Practical Requirements:

None.

C. Conditions Governing Apprenticeship Training

1.0 General

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

2.0 Entrance Requirements

2.1 Entry into the occupation as an apprentice requires:

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

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

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

2.4 An Application for Apprenticeship form must be duly completed along with a Memorandum of Understanding as applicable to be indentured into an Apprenticeship. The Memorandum of Understanding must contain signatures of

an authorized employer representative, the apprentice and an official representing the Provincial Apprenticeship and Certification Board to be valid.

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

3.0 Probationary Period

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

4.0 Termination of a Memorandum of Understanding

After the probationary period referred to in Section 3.0, the Memorandum of Understanding may be terminated by the PACB by mutual consent of the parties involved, or cancelled by the PACB for proper and sufficient cause in the opinion of the PACB, such as that stated inSection14.

5.0 Apprenticeship Progression Schedule and Wage Rates

Progression Schedule

TRUCK AND TRANSPORT MECHANIC			7200 Hours
APPRENTICESHIP LEVEL AND WAGES			
Year	Wage Rate At This Level	Requirements for progression to next level of apprenticeship	When requirements are met, the apprentice will progress to…
1st	60 %	▪ Completion of pre-employment training ▪ Registration as an apprentice ▪ Minimum 1800 hours of combined relevant work experience and training	2nd Year
2nd	70%	▪ Completion of Level 2 training ▪ Pass Level 2 exam ▪ Minimum 3600 hours of combined relevant work experience and training	3rd Year
3rd	80%	▪ Completion of Level 3 training ▪ Pass Level 3 exam ▪ Minimum 5400 hours of combined relevant work experience and training	4th Year
4th	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.

TRUCK AND TRANSPORT MECHANIC		7200 Hours
CLASS CALLS *(AFTER APPRENTICESHIP REGISTRATION)*		
Call Level	Requirements for Class Call	Hours awarded for In-School Training
Level 2	▪ Minimum of 3000 hours of relevant work experience and training	240
Level 3	▪ Minimum of 5000 hours of relevant work experience and training	240
Level 4	▪ Minimum of 7000 hours of relevant work experience and training	240
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 Advanced Education, Skills and Labour 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 9000 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 Advanced Education, Skills and Labour.

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 block, provincial and interprovincial 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.