Plan of Training

Motor Vehicle Body Repairer

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

December 2011

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Approved by:

Chairperson, Provincial Apprenticeship and Certification Board

Date: Dec 13/11

Preface

This Apprenticeship Standard is based on the 2010 edition of the National Occupational Analysis for the Motor Vehicle Body Repairer trade.

This document describes the curriculum content for the Motor Vehicle Body Repairer apprenticeship training program and outlines each of the technical training units necessary for the completion of apprenticeship.

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We offer you a sincere thank you.

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A. Profile Chart

OCCUPATIONAL SKILLS			
AB1610 Safety	AB1600 Trade Related Documents	AB1620 Tools and Equipment	AB1630 Fasteners and Adhesives
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AB1690 Resistance Spot Welding (RSW)	AB1780 Cleaning and Detailing	AB1790 Upholstery, Trim and Hardware	AB2940 Damage Analysis and Estimating Costs
AB2720 Position Arc Welding			
BODY AND STRUCTURAL COMPONENT REPAIR			
AB1660 Metallurgy	AB1701 Metal Working 1 (Mild Steel)	AB1711 Body Fillers and Abrasives	AB1732 Surface Preparation (Cleaning, Stripping and Masking)
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AB2920 Unitized Body Repairs	AB2930 Conventional Frame Repair	AB2700 Metal Working 2 (Aluminum)	
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MECHANICAL AND ELECTRICAL COMPONENTS			
AB2730 Restraint Systems	AB2711 Electrical Fundamentals	AB1811 Batteries	AB2821 Electrical and Electronic Repairs
AB2901 Mechanical Systems and Components	AB2910 Steering, Suspension and Braking Systems		
GLASS			
AB1750 Stationary Glass	AB1760 Moveable Glass and Hardware		

B. NOA Comparison Table

NOA 2010 Tasks		2011 POT	
Task 1 – Uses documentation.			
1.01	Uses manufacturer's specifications and repair procedures.	AB1620	Tools and Equipment
		AB2711	Electrical Fundamentals
		AB2830	Damage Analysis of Frames and Unitized Bodies
1.02	Interprets estimates.	AB1600	Trade Related Documents
1.03	Uses work orders.	AB1600	Trade Related Documents
1.04	Interprets safety and environmental regulations.	AB1610	Safety
Task 2 – Uses and maintains tools and equipment.			
2.01	Maintains hand tools.	AB1620	Tools and Equipment
2.02	Maintains power tools.	AB1620	Tools and Equipment
2.03	Maintains welding equipment.	AB1620	Tools and Equipment
		AB1671	Cutting and Heating
		AB1680	Gas Metal Arc Welding (GMAW) - MIG
		AB2720	Position Arc Welding (GMAW)
		AB1690	Resistance Spot Welding (RSW)
		AB1741	Non-Metal Repair
2.04	Maintains frame and unibody repair equipment.	AB1620	Tools and Equipment
		AB2930	Conventional Frame Repair
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2.06	Maintains measuring equipment.	AB1620	Tools and Equipment
		AB2830	Damage Analysis of Frames and Unitized Bodies
2.07	Maintains refinishing tools and equipment.	AB1620	Tools and Equipment
		AB1820	Primers, Surfacers and Sealers
		AB1801	Refinishing 1
2.08	Uses personal protective equipment (PPE).	AB1610	Safety
Task 3 – Organizes work.			
3.01	Follows safety procedures for alternate-fuel vehicles.	AB1610	Safety
		AB2740	Structural Components
		AB2811	Non-Structural Components
		AB2711	Electrical Fundamentals
		AB1811	Batteries
		AB2821	Electrical and Electronic Repairs

NOA 2010 Tasks		2011 POT	
		AB2800	Refinishing 2
3.02	Prepares damage estimate.	AB1600	Trade Related Documents
		AB2940	Damage Analysis and Estimating Costs
3.03	Organizes replacement parts and materials.	AB1600	Trade Related Documents
3.04	Communicates with others.	CM2160	Communication Essentials
		AB2940	Damage Analysis and Estimating Costs
3.05	Prepares work area.	AB1610	Safety
3.06	Maintains safe work environment.	AB1610	Safety
Task 4 – Applies corrosion protection material.			
4.01	Applies weld through primer.	AB1721	Corrosion Protection
		AB1820	Primers, Surfacers and Sealers
4.02	Applies corrosion protection for electrical components.	AB1721	Corrosion Protection
4.03	Applies corrosion inhibitors and sealers.	AB1721	Corrosion Protection
		AB2920	Unitized Body Repairs
Task 5 – Repairs and replaces trim, body seals and gaskets.			
5.01	Removes trim, body seals and gaskets.	AB1630	Fasteners and Adhesives
		AB1790	Upholstery, Trim and Hardware
5.02	Repairs trim.	AB1790	Upholstery, Trim and Hardware
5.03	Installs trim, body seals and gaskets.	AB1630	Fasteners and Adhesives
Task 6 – Performs final check.			
6.01	Inspects vehicle visually.	AB2830	Damage Analysis of Frames and Unitized Bodies
		AB1651	Pre/Post-Repair Vehicle Inspection
6.02	Performs final operational check.	AB1651	Pre/Post-Repair Vehicle Inspection
Task 7 – Prepares for repairs and replacement of structural components.			
7.01	Performs vehicle setup.	AB2920	Unitized Body Repairs
		AB2930	Conventional Frame Repair
7.02	Removes components for access.	AB1630	Fasteners and Adhesives
		AB2920	Unitized Body Repairs
		AB2930	Conventional Frame Repair
7.03	Identifies extent of damage.	AB2830	Damage Analysis of Frames and Unitized Bodies

NOA 2010 Tasks		2011 POT	
		AB2920	Unitized Body Repairs
		AB2930	Conventional Frame Repair
		AB1651	Pre/Post-Repair Vehicle Inspection
Task 8 – Repairs and replaces structural components.			
8.01	Straightens structural components.	AB1660	Metallurgy
		AB2920	Unitized Body Repairs
		AB2930	Conventional Frame Repair
8.02	Removes structural components.	AB2920	Unitized Body Repairs
		AB2930	Conventional Frame Repair
8.03	Installs structural components.	AB1630	Fasteners and Adhesives
		AB2920	Unitized Body Repairs
		AB2930	Conventional Frame Repair
Task 9 – Repairs panels.			
9.01	Prepares panels for repair.	AB1701	Metal Working 1 (Mild Steel)
		AB2700	Metal Working 2 (Aluminum)
		AB2740	Structural Components
		AB2811	Non-structural Components
		AB1741	Non-Metal Repair
		AB1680	Gas Metal Arc Welding (GMAW) - MIG
9.02	Reshapes panels.	AB1701	Metal Working 1 (Mild Steel)
		AB2700	Metal Working 2 (Aluminum)
		AB1741	Non-Metal Repair
		AB2740	Structural Components
		AB2811	Non-Structural Components
9.03	Aligns panels.	AB2740	Structural Components
		AB2811	Non-Structural Components
9.04	Applies repair materials.	AB1701	Metal Working 1 (Mild Steel)
		AB2700	Metal Working 2 (Aluminum)
		AB1711	Body Filler and Abrasives
		AB1741	Non-Metal Repair
9.05	Shapes repair materials.	AB1701	Metal Working 1 (Mild Steel)
		AB2700	Metal Working 2 (Aluminum)
		AB1711	Body Filler and Abrasives
		AB1741	Non-Metal Repair

NOA 2010 Tasks		2011 POT	
Task 10 – Replaces panels.			
10.01	Removes panels.	AB2740	Structural Components
		AB2811	Non-Structural Components
10.02	Installs panels.	AB1630	Fasteners and Adhesives
		AB2740	Structural Components
		AB2811	Non-Structural Components
Task 11 – Replaces structural glass.			
11.01	Removes structural glass.	AB1750	Stationary Glass
11.02	Installs structural glass.	AB1750	Stationary Glass
Task 12 – Replaces non-structural glass.			
12.01	Removes non-structural glass.	AB1630	Fasteners and Adhesives
		AB1760	Moveable Glass and Hardware
12.02	Installs non-structural glass.	AB1630	Fasteners and Adhesives
		AB1760	Moveable Glass and Hardware
Task 13 – Repairs and replaces mechanical components.			
13.01	Removes mechanical components.	AB1630	Fasteners and Adhesives
		AB2901	Mechanical Systems and Components
		AB2910	Steering, Suspension and Braking Systems
13.02	Cleans mechanical components.	AB2901	Mechanical Systems and Components
13.03	Straightens mechanical components.	AB2901	Mechanical Systems and Components
13.04	Installs mechanical components.	AB1630	Fasteners and Adhesives
		AB2901	Mechanical Systems and Components
		AB2910	Steering, Suspension and Braking Systems
Task 14 – Repairs and replaces electrical components.			
14.01	Repairs damaged wires and exterior coverings.	AB2711	Electrical Fundamentals
		AB2821	Electrical and Electronic Repairs
14.02	Cleans corroded components and connections.	AB1811	Batteries
		AB2821	Electrical and Electronic Repairs
14.03	Removes damaged electrical components.	AB1811	Batteries
		AB2821	Electrical and Electronic Repairs
14.04	Installs electrical components.	AB1811	Batteries
		AB2711	Electrical Fundamentals
		AB2821	Electrical and Electronic Repairs

NOA 2010 Tasks		2011 POT	
Task 15 – Repairs and replaces interior components.			
15.01	Removes interior components.	AB1630	Fasteners and Adhesives
		AB1790	Upholstery, Trim and Hardware
15.02	Repairs interior components.	AB1790	Upholstery, Trim and Hardware
15.03	Installs interior components.	AB1630	Fasteners and Adhesives
		AB1790	Upholstery, Trim and Hardware
Task 16 – Replaces seat belt restraint systems.			
16.01	Removes seat belt restraint systems.	AB2730	Restraint Systems
16.02	Installs seat belt restraint systems.	AB2730	Restraint Systems
Task 17 – Replaces air bag systems.			
17.01	Removes air bags and related components.	AB2730	Restraint Systems
17.02	Installs air bags and related components.	AB2730	Restraint Systems
Task 18 – Prepares surfaces.			
18.01	Decontaminates area.	AB1721	Corrosion Protection
		AB1732	Surface Preparation (Cleaning, Stripping and Masking)
		AB1741	Non-Metal Repair
		AB1820	Primers, Surfacers and Sealers
18.02	Sands surfaces.	AB1711	Body Filler and Abrasives
		AB1732	Surface Preparation (Cleaning, Stripping and Masking)
		AB1820	Primers, Surfacers and Sealers
18.03	Masks off surrounding area.	AB1820	Primers, Surfacers and Sealers
Task 19 – Prepares and applies refinishing materials.			
19.01	Mixes refinishing materials.	AB1820	Primers, Surfacers and Sealers
		AB2800	Refinishing 2
19.02	Performs final wash and tack.	AB1820	Primers, Surfacers and Sealers
		AB1801	Refinishing 1
19.03	Applies material to surface.	AB1820	Primers, Surfacers and Sealers
		AB2800	Refinishing 2
19.04	Removes masking.	AB1820	Primers, Surfacers and Sealers

NOA 2010 Tasks		2011 POT	
		AB1732	Surface Preparation (Cleaning, Stripping and Masking)
Task 20 – Details exterior.			
20.01	Removes overspray.	AB1801	Refinishing 1
20.02	Polishes vehicle.	AB1801	Refinishing 1
		AB1780	Cleaning and Detailing
20.03	Washes vehicle.	AB1801	Refinishing 1
		AB1780	Cleaning and Detailing
Task 21 – Details interior.			
21.01	Cleans soft surfaces.	AB1780	Cleaning and Detailing
21.02	Cleans hard surfaces.	AB1780	Cleaning and Detailing

C. Program Structure

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

The order of course delivery within each 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.

Block I				
Course No.	**IPG No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
TS1510	-	Occupational Health and Safety	6	None
TS1520	-	WHMIS	6	None
TS1530	-	Standard First Aid	14	None
AB1610	ABR-100	Safety	12	None
AB1600	ABR-105	Trade Related Documents	12	None
AB1620	ABR-115	Tools and Equipment	45	AB1610
AB1630	ABR-120	Fasteners and Adhesives	12	AB1610 AB1620
AB1641	ABR-125	Vehicle Construction	16	AB1610
AB1651	ABR-130	Pre/Post-Repair Vehicle Inspection	12	None
AB1660	ABR-135	Metallurgy	30	AB1641
AB1671	ABR-140	Cutting and Heating	30	AB1620
AB1680	ABR-145	Gas Metal Arc Welding (GMAW)-MIG	45	AB1620 AB1671
AB1690	ABR-155	Resistance Spot Welding (RSW)	15	AB1620 AB1671
AB1701	ABR-160	Metal Working 1 (Mild Steel)	55	AB1660
AB1711	ABR-165	Body Fillers and Abrasives	40	AB1701

Block I				
Course No.	**IPG No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
AB1721	ABR-170	Corrosion Protection	40	AB1701
AB1732	ABR-175	Surface Preparation (Cleaning, Stripping and Masking)	85	AB1721
AB1750	ABR-185	Stationary Glass	30	AB1760
AB1760	ABR-190	Moveable Glass and Hardware	30	AB1790
AB1820	ABR-195	Primers, Surfacers and Sealers	40	AB1721
AB1801	ABR-200	Refinishing 1	75	AB1820
AB1780	ABR-205	Cleaning and Detailing	30	AB1801
AB1790	ABR-210	Upholstery, Trim and Hardware	30	AB1620
AB1811	ABR-235	Batteries	10	AB1610
AB2811	ABR-225	Non-Structural Components	60	AB1641 AB1660
AP1101	-	Introduction to Apprenticeship	15	None
*AM1100	-	Math Essentials	30	None
AM1240	-	MV Body Repair Math Fundamentals	30	AM1100
CM2160	-	Communication Essentials	45	None
MC1060	-	Computer Essentials	15	None
SD1760	-	Workplace Essentials	45	None
OT1220	-	Workplace Exposure	60	None

Total Hours	**1020**

***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

Block II				
Course No.	**IPG No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
AB2711	ABR-230	Electrical Fundamentals	75	AB1811
AB2700	ABR-280	Metal Working 2 (Aluminum)	45	AB1660
AB2720	ABR-145	Position Arc Welding (GMAW)	30	AB1620 AB1671
AB2730	ABR-215	Restraint Systems	30	AB2711 AB1811
AB2740	ABR-220	Structural Components	60	AB1641 AB1660

Total Hours	**240**

Required Work Experience

Block III				
Course No.	**IPG No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
AB1741	ABR-180	Non-Metal Repair	60	AB1711
AB2821	ABR-240	Electrical and Electronic Repairs	60	AB2711
AB2800	ABR-275	Refinishing 2	75	AB2711
AB2830	ABR-255	Damage Analysis of Conventional Frames and Unitized Bodies	45	AB2740

Total Hours	**240**

Required Work Experience

Block IV				
Course No.	**IPG No.**	**Course Name**	**Hours**	**Pre-Requisite(s)**
AB2901	ABR-245	Mechanical Systems and Components	68	Block I
SV1110	-	Ozone Depletion	7	None
AB2910	ABR-250	Steering, Suspension and Braking Systems	75	AB2901
AB2920	ABR-260	Unitized Body Repairs	30	AB2830
AB2930	ABR-265	Conventional Frame Repair	30	AB2830
AB2940	ABR-270	Damage Analysis and Estimating Costs	30	Block I

Total Hours	**240**

Total Course Credit Hours	**1740**

BLOCK I

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.

AB1610 Safety

Learning Outcomes:

- Demonstrate knowledge of types of safety equipment.
- Demonstrate knowledge of the applications and procedures for use of safety equipment.
- Demonstrate knowledge of safe work practices.
- Demonstrate knowledge of regulations pertaining to safety.

Duration: 12 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Identify types of personal protective equipment (PPE) and describe their applications.
    i. clothing
    ii. equipment

2. Describe the procedures used to care for and maintain personal protective equipment.

3. Identify workplace hazards and describe safe work practices.
    i. personal
    ii. workplace
        - ventilation/fumes
        - electrical/grounding
        - fire
        - chemical/gas
    iii. environmental
        - discharge/spills
4. Identify and describe workplace safety and health regulations.
    i. federal
    ii. provincial/territorial
    iii. municipal (awareness of)

5. Identify PPE and describe safe work practices for hybrid/alternate-fuel vehicles.

Practical Requirements:

1. Conduct a safety inspection of the shop; including fire exits, identifying location and expiry dates of fire extinguishers, MSDS sheets, eye wash stations.

2. Demonstrate proper care of personal protective equipment.

3. Demonstrate knowledge of signage used in the shop.

AB1600 Trade Related Documents

Learning Outcomes:

- Demonstrate knowledge of trade documents.
- Demonstrate knowledge of preparing and interpreting trade documents.
- Demonstrate knowledge of ordering and organizing parts and materials.

Duration: 12 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Identify sources of related information.

2. Identify and interpret information found on the vehicle.
    i. VIN
    ii. paint code
    iii. production date
    iv. make and model

3. Identify types of documents and describe the procedures used to interpret them.
    i. manufacturers' specifications
    ii. codes and standards
    iii. equipment maintenance schedules
    iv. equipment maintenance records
    v. manuals and bulletins
    vi. work orders

4. Identify types of written reporting and describe their purpose and applications.
    i. time and material records
    ii. apprentice training logs
    iii. estimates

5. Describe procedures for organizing/storing parts and materials.

Practical Requirements:

1. Retrieve vehicle identification number and all other necessary information as specified by the Instructor for a specific job.

AB1620 Tools and Equipment

Learning Outcomes:

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

Duration: 45 Hours

Pre-Requisite(s): AB1610

Objectives and Content:

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

2. Identify types of basic measuring equipment and describe their applications and procedures for use.
    i. basic
    ii. trade specific

3. Identify types of specialized measuring equipment and describe their applications.

4. Identify types of testing/diagnostic equipment and describe their applications.

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

6. Identify types of shop equipment and describe their applications.
    i. cleaning
    ii. lifting

7. Identify types of welding and cutting equipment and describe their applications.
    i. electric
    ii. gas

8. Identify types of straightening equipment and describe their applications.

8. Identify types of refinishing and detailing tools and equipment and describe their applications.

9. Identify and describe care and maintenance procedures relating to tools and equipment.

Practical Requirements:

1. Demonstrate the use of various hand tools.

2. Demonstrate the use of various measuring equipment.

3. Demonstrate the use of various testing/diagnostic equipment.

4. Demonstrate the use of various power tools.
   i. electric
   ii. pneumatic
   iii. hydraulic

5. Demonstrate the use of shop equipment used for cleaning and lifting.

6. Demonstrate care and maintenance of tools and equipment.

AB1630 Fasteners and Adhesives

Learning Outcomes:

- Demonstrate knowledge of fasteners and adhesives, their applications and safety considerations.

Duration: 12 Hours

Pre-Requisite(s): AB1610, AB1620

Objectives and Content:

1. Define terminology associated with fasteners and adhesives.

2. Identify and describe safety considerations and procedures relating to fasteners and adhesives.
    i. personal
    ii. vehicle

3. Identify types of fasteners and describe their applications.

4. Describe the procedures to remove and install fasteners.

5. Identify types of adhesives used in fastening applications and describe their characteristics.

6. Identify the considerations when applying and removing adhesives.

Practical Requirements:

None.

AB1641 Vehicle Construction

Learning Outcomes:

- Demonstrate knowledge of vehicle construction.
- Demonstrate knowledge of vehicle components.

Course Duration: 16 Hours

Pre-Requisite(s): AB1610

Objectives and Content:

1. Define terminology associated with vehicle construction.

2. Identify types of vehicle construction and describe their characteristics.
    i. conventional frames
    ii. unitized bodies
    iii. space frames

3. Identify body sections and describe their components.

4. Identify and describe structural and non-structural components.
    i. hinges and panel alignment
    ii. latches and striker plates

5. Identify and describe the types of materials used in vehicle construction.

Practical Requirements:

None.

AB1651 Pre/Post-Repair Vehicle Inspection

Learning Outcomes:

- Demonstrate knowledge to perform a visual inspection.
- Demonstrate knowledge of vehicle component operation.

Duration: 12 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Define terminology associated with pre-repair and post-repair vehicle inspection.

2. Identify hazards and describe safe work practices pertaining to pre-repair and post-repair vehicle inspection.

3. Identify and describe the procedures used to perform a visual inspection of the vehicle before and after repairs.

4. Identify and record any damage on the vehicle that is unrelated to the required repair.

5. Identify and record associated damage in the repair area.

6. Identify vehicle components requiring operational checks.

7. Describe the procedures used to perform vehicle component operational checks.

8. Identify the purpose and procedures for conducting a vehicle road test.

Practical Requirements:

1. Complete a pre and post-repair vehicle inspection checklist.

AB1660 Metallurgy

Learning Outcomes:

- Demonstrate knowledge of various metals and their characteristics.
- Demonstrate knowledge of metallurgic principles and their applications to control, expansion, contraction and distortion.

Duration: 30 Hours

Pre-Requisite(s): AB1641

Objectives and Content:

1. Define and explain terms associated with metallurgy.

2. Identify hazards and describe safe work practices pertaining to working metals.

3. Identify types of metals and describe their characteristics.

4. Identify and describe procedures associated with working metals.
    i. forming
    ii. shearing
    iii. punching
    iv. drilling
    v. cutting
    vi. welding
    vii. heating
    viii. shrinking

5. Describe the effects metal working has on metallurgic properties.
    i. stress
    ii. contraction
    iii. expansion
    iv. distortion
    v. work hardening
    vi. shrinking

6. Describe the procedures to prevent or correct problems that occur when working metals.

Practical Requirements:

1. Measure, cut, and form panels.

AB1671 Cutting and Heating

Learning Outcomes:

- Demonstrate knowledge of cutting and heating equipment, their applications, maintenance and procedures for use.

Duration: 30 Hours

Pre-Requisite(s): AB1620

Objectives and Content:

1. Define terminology associated with cutting and heating.

2. Identify and describe cutting and heating equipment and components.
   i. oxy-fuel
   ii. plasma arc

3. Identify the applications for oxy-fuel cutting and heating.

4. Identify the application for plasma arc cutting and heating.

5. Describe safety considerations when using cutting and heating equipment.
   i. personal
   ii. shop/facility
   iii. equipment
   iv. vehicle

6. Describe the procedures to set-up, maintain, and shut-down oxy-fuel equipment.

7. Describe the procedures to set-up, maintain, and shut-down plasma arc cutting equipment.

8. Describe the procedures used to cut with oxy-fuel equipment.

9. Describe the procedures used to cut with plasma arc cutting equipment.

10. Describe the procedures used to heat with oxy-fuel equipment.

Practical Requirements:

1. Set-up oxy-fuel equipment.

2. Perform heating using oxy-fuel equipment.

3. Cut mild steel using oxy-fuel equipment.

4. Use plasma arc equipment to cut metal.

AB1680 Gas Metal Arc Welding – GMAW (MIG)

Learning Outcomes:

- Demonstrate knowledge of gas metal arc welding equipment, its applications, maintenance and procedures for use.
- Demonstrate knowledge of weld defects, their causes and the procedures to Prevent and correct them.

Duration: 45 Hours

Pre-requisite(s): AB1620, AB1671

Objectives and Content:

1. Define and explain terminology associated with gas metal arc welding.

2. Describe gas metal arc welding and its applications.

3. Identify safety precautions relating to gas metal arc welding.
    i. personal
    ii. equipment
    iii. vehicle
    iv. shop/facility

4. Identify and describe gas metal arc welding equipment and accessories.

5. Describe the procedures to set-up, operate and shut-down gas metal arc welding equipment.

6. Describe the procedures used to maintain and troubleshoot gas metal arc welding equipment.

7. Identify the types of welds performed using gas metal arc welding equipment.
    i. plug
    ii. continuous fillet

iii. stitch
iv. tack

8. Describe the procedures used to weld various substrates using the gas metal arc welding process.
   i. steel
   ii. aluminum

9. Describe the weld defects, their causes and the procedure to prevent and
   i. correct them

Practical Requirements:

1. Disassemble and reassemble GMAW welding system.

2. Fillet weld flat (GMAW): "t" joint and lap joint in steel and aluminum.

3. Fillet weld horizontal (GMAW): "t" joint and lap joint in steel and aluminum.

4. Butt weld flat (GMAW): square butt joint and single vee butt joint in steel and aluminum.

AB1690 Resistance Spot Welding (RSW)

Learning Outcomes:

- Demonstrate knowledge of resistance spot welding and its applications.
- Demonstrate knowledge of resistance spot welding procedures.

Duration: 15 Hours

Pre-requisite(s): AB1620, AB1671

Objectives and Content:

1. Define terminology associated with resistance spot welding (RSW) and squeeze type resistance spot welding (STRSW)

2. Describe Resistance Spot Welding (RSW) and Squeeze Type Resistance Spot Welding (STRSW) and their applications.

3. Identify safety precautions relating to resistance spot welding and squeeze type resistance spot welding.
    i. personal
    ii. equipment
    iii. vehicle
    iv. shop/facility

Practical Requirements:

1. Perform welds using STRSW equipment.

AB1701 Metal Working 1 (Mild Steel)

Learning Outcomes:

- Demonstrate knowledge of metal working procedures for sheet metal repair.

Duration: 55 Hours

Pre-Requisite(s): AB1660

Objectives and Content:

1. Define terminology associated with working with mild steel sheet metal.

2. Identify hazards and describe safe work practices pertaining to working mild steel sheet metal.
    i. personal
    ii. equipment
    iii. vehicle
    iv. shop/facility

3. Identify the types of automotive sheet metal.
    i. steel
    ii. aluminum

4. Identify and describe types of damage to mild steel sheet metal.
    i. direct
    ii. indirect

5. Identify considerations when performing metal work on mild steel sheet metal.
    i. tool selection
    ii. repair sequence
    iii. protection of adjacent panels
    iv. panel preparation
    v. corrosion protection

6. Identify the types of panels and their associated repair procedures.
    i. accessible
        - hammer and dolly
        - shrinking (hot or cold)
    ii. limited access
        - prybar
        - pick
        - dent puller
        - uni-spotter

6. Describe the methods used to detect surface irregularities.

7. Describe the procedures used to rough out and align damaged mild steel sheet metal.

8. Describe the procedures used to prepare mild steel sheet metal for finishing.

Practical Requirements:

1. Retrieve information on different types of metals used, where they are located on a vehicle and identify any special procedures to be followed.

2. Unlock and shape metal to contour.

3. Shrink metal.

4. Pick and file metal.

AB1711 Body Fillers and Abrasives

Learning Outcomes:

- Demonstrate knowledge of abrasives, their applications, safety considerations and procedures for use.
- Demonstrates knowledge of types of body fillers, their applications, safety considerations and procedures for use.

Duration: 40 Hours

Pre-Requisite(s): AB1701

Objectives and Content:

1. Define terminology associated with body fillers and abrasives.

2. Identify the types of abrasives and describe their characteristics and applications.

3. Describe the procedures and techniques for using abrasives.

4. Identify the types of body fillers and describe their characteristics and applications.

5. Identify safety considerations when working with body fillers and abrasives.

6. Describe the procedures to apply body fillers.
    i. tools
    ii. surface preparation
    iii. mixing
    iv. application techniques

7. Describe the procedures for shaping and finishing body fillers.
    i. grit selection
    ii. tool selection
    iii. sanding techniques

iv. detect surface irregularities
- visual
- guide coat
- tactile (touch)

Practical Requirements:

1. Demonstrate techniques for using abrasives.

2. Demonstrate body filler application.

3. Demonstrate the procedures for shaping and finishing body fillers.

AB1721 Corrosion Protection

Learning Outcomes:

- Demonstrate understanding of corrosion and its causes.
- Demonstrate knowledge of the effects of corrosion on metal.
- Demonstrate knowledge of types of corrosion protection, their characteristics and application procedures.

Duration: 40 Hours

Pre-Requisite(s): AB1701

Objectives and Content:

1. Define terminology associated with corrosion.

2. Interpret documentation pertaining to corrosion protection.
    i. OEM specifications

3. Identify hazards and describe safe work practices pertaining to corrosion and corrosion protection.

4. Identify the types of corrosion and describe their causes.
    i. oxidation
    ii. galvanic action

5. Identify environmental and atmospheric conditions that influence the rate of corrosion.

6. Identify and describe the types of corrosion protection.
    i. OEM application
    ii. undercoats and topcoats
    iii. anti-corrosion compounds

7. Describe the procedures used to inspect for corrosion related damage.

8. Identify corrosion protection materials used during repair procedures.
    i. undercoats (primers)
    ii. seam sealers
    iii. anti-corrosion compounds

9. Identify the methods and tools used to restore corrosion protection.

10. Describe the procedures to restore corrosion protection to Original Equipment Manufacturer (OEM) specifications.
    i. documentation

11. Describe the procedures to restore corrosion protection to electrical components.

Practical Requirements:

1. Use various types of corrosion protection.

2. Inspect for corrosion related damage.

3. Demonstrate the procedure used to restore corrosion protection to original equipment manufacturers specifications.

4. Demonstrate the procedure used to restore corrosion protection to electrical components.

AB1732 Surface Preparation (Cleaning, Stripping and Masking)

Learning Outcomes:

- Demonstrate knowledge of surface cleaning procedures.
- Demonstrate knowledge of surface preparation using abrasives.
- Demonstrate knowledge of stripping equipment and products, their applications, safety precautions and procedures for use.
- Demonstrate knowledge of masking techniques.

Duration: 85 Hours

Pre-Requisite(s): AB1721

Objectives and Content:

1. Define terminology associated with surface preparation.

2. Identify hazards and describe safe work practices for surface preparation.
    i. personal
    ii. shop/facility
    iii. equipment
    iv. environmental

3. Identify products used to clean surfaces, their applications and procedures for use.

4. Identify substrate types and describe the procedures and considerations for evaluating their condition.

5. Identify topcoats and undercoats and describe the procedures and considerations for evaluating their condition.

6. Identify preparation procedures for non-metal panel substrates.
    i. sanding
    ii. adhesion promoters
    iii. fillers
    iv. mould release agents

7. Identify the methods used to strip topcoats and undercoats, their applications and safety or environmental considerations.
    i. sanding
    ii. chemical strippers
    iii. media blasting
    iv. mechanical

8. Describe the procedures used to strip paint.

9. Describe the procedures used to prepare surfaces using abrasives.

10. Identify the materials used in masking.

11. Describe the procedures and techniques used to mask surfaces.

12. Describe the procedures and techniques to remove masking from surfaces.

Practical Requirements:

1. Mark off areas using masking technique.

2. Strip paint using chemicals and blasting equipment.

3. Remove grease and dirt from surfaces to be painted.

4. Prepare paint booth (clean and drain air line system).

5. Sand surfaces using hand and power techniques.

AB1750 Stationary Glass

Learning Outcomes:

- Demonstrate knowledge of the types of stationary glass, its characteristics and importance to vehicle structure.
- Demonstrate knowledge of the procedures to replace stationary glass to industry standards.

Duration: 30 Hours

Pre-Requisite(s): AB1760

Objectives and Content:

1. Define terminology associated with stationary glass.

2. Identify hazards and describe safe work practices pertaining to stationary glass.

3. Identify the types of stationary glass and describe their characteristics.

4. Describe stationary glass and its importance to the vehicle structure/integrity.

5. Describe the procedures to determine if stationary glass can be repaired or if replacement is necessary.

6. Identify the fastening methods for stationary glass and describe the associated components.
    i. mechanical
    ii. gasket mounted
    iii. bonded

7. Identify components and accessories associated with stationary glass.

8. Identify tools and equipment used in stationary glass replacement and their procedures for use.

9. Describe materials used for stationary glass replacement, their characteristics and procedures for use.

10. Describe the procedures and precautions for removal and installation of stationary glass and its related components.

11. Describe the procedures used to detect and repair leaks around stationary glass.

Practical Requirements:

1. Demonstrate fastening methods for stationary glass.

2. Demonstrate methods to check, detect and repair leaks around stationary glass.

AB1760 Moveable Glass and Hardware

Learning Outcomes:

- Demonstrate knowledge of types of moveable glass and their characteristics.
- Demonstrate knowledge of hardware and attachments associated with moveable glass.
- Demonstrate knowledge of procedures to replace moveable glass and repair or replace its associated hardware and attachments.

Duration: 30 Hours

Pre-Requisite(s): AB1790

Objectives and Content:

1. Define terminology associated with moveable glass and hardware.

2. Identify hazards and describe safe work practices pertaining to moveable glass and hardware.

3. Identify tools and equipment relating to moveable glass and describe their applications and procedures for use.

4. Identify the types of moveable glass and describe their characteristics.

5. Describe moveable glass related hardware.
   i. motors
   ii. regulators
   iii. channels

6. Identify the fastening methods for moveable glass and describe the associated components.
   i. mechanical
   ii. pressure
   iii. bonded

7. Describe the procedures and considerations for inspecting moveable glass and its associated hardware.

8. Describe the procedures used to remove and install moveable glass.

9. Describe the procedures used to detect and repair leaks.

10. Describe the procedures used to service and adjust moveable glass.

Practical Requirements:

1. Replace fixed glass (rubber mounted).

2. Replace fixed glass (adhesive mounted).

3. Install moveable glass.

4. Service and adjust moveable glass.

5. Perform checks for wind noise and water leaks.

AB1820 Primers, Surfacers and Sealers

Learning Outcomes:

- Demonstrate knowledge of primers, surfacers and sealers, their applications, and procedures for use.
- Demonstrate knowledge of primer, surfacer and sealer materials, their characteristics and mixing procedures.
- Demonstrate knowledge of equipment used in applying primers, surfacers and sealers, their set-up, maintenance and procedures for use.

Duration: 40 Hours

Pre-Requisite(s): AB1721

Objectives and Content:

1. Define terminology associated with primers, surfacers and sealers.

2. Identify hazards and describe safe work practices pertaining to primers, surfacers and sealers.
   i. personal
   ii. shop/facility
   iii. environment

3. Interpret codes and regulations pertaining to the use of primers, surfacers and sealers.

4. Identify types of primers, surfacers and sealers, and describe their characteristics and applications.

5. Identify tools and equipment relating to primers, surfacers and sealers and describe their applications and procedures for use.

6. Describe the procedures used to set-up, adjust, care for and maintain equipment used in applying primers, surfacers and sealers.

7. Describe the procedures used to prepare substrate prior to applying primers, surfacers and sealers.

8. Describe the procedures used for mixing primers, surfacers and sealers.

9. Identify primer, surfacer and sealer application techniques.

10. Describe the procedures used to apply primers, surfacers and sealers.

11. Identify primer, surfacer and sealer defects and describe their causes and procedures used to prevent or correct them.

12. Describe the procedures used to prepare primers, surfacers and sealers for topcoat.

Practical Requirements:

1. Set-up, adjust, and maintain equipment used in applying primers, surfacers and sealers.

2. Demonstrate the procedures used to prepare substrate prior to applying primers, surfacers and sealers.

3. Demonstrate the procedures for mixing primers, surfacers and sealers.

4. Demonstrate techniques and procedures used for applying primers, surfacers and sealers.

5. Demonstrate procedures to prevent and correct primer, surfacer and sealer defects.

6. Demonstrate how to prepare primers, surfacers and sealers for topcoat.

AB1801 Refinishing 1

Learning Outcomes:

- Demonstrate knowledge of refinishing materials and their characteristics.
- Demonstrate knowledge of refinishing equipment, its applications, maintenance and procedures for use.

Duration: 75 Hours

Pre-Requisite(s): AB1820

Objectives and Content:

1. Define terminology associated with refinishing.

2. Describe safety considerations relating to refinishing.
   i. personal
   ii. shop/facility
   iii. environment

3. Describe the surface preparation procedures for refinishing.

4. Identify refinishing equipment and its applications.

5. Describe the procedures used to set-up, operate, adjust, and maintain refinishing equipment.

6. Identify types of topcoat finishes and describe their characteristics.
   i. single-stage
   ii. multistage
      - solvent
      - water
   iii. clear

Practical Requirements:

1. Prepare surface for refinishing and blending.

2. Set-up, operate, adjust, and maintain refinishing equipment.

3. Apply single-stage finishes.

4. Apply basecoat/clearcoat finishes.

AB1780 Cleaning and Detailing

Learning Outcomes:

- Demonstrate knowledge of cleaning and detailing equipment and products.
- Demonstrate knowledge of cleaning and detailing practices and procedures.

Duration: 30 Hours

Pre-Requisite(s): AB1801

Objectives and Content:

1. Define terminology associated with cleaning and detailing.

2. Identify hazards and describe safe work practices pertaining to cleaning and detailing

3. Identify equipment used in detailing vehicle exterior.

4. Identify equipment used in detailing vehicle interior.

5. Identify products used in vehicle detailing and their related safety considerations.

6. Describe techniques for correcting topcoat defects.
    i. polishing
    ii. buffing

7. Describe the procedures to remove overspray.

8. Describe the procedures used to polish vehicle exterior.

9. Describe the procedures used to clean vehicle interior.

10. Describe the procedures used to wash vehicle exterior.

11. Describe the procedures used to clean un-painted plastic exterior components.

Practical Requirements:

1. Perform final clean-up for customer delivery:
    i. remove overspray
    ii. wash and polish vehicle exterior
    iii. clean vehicle interior

2. Perform water sanding and buffing techniques.

AB1790 Upholstery, Trim and Hardware

Learning Outcomes:

- Demonstrate knowledge of types of trim, their applications and characteristics.
- Demonstrate knowledge of procedures to repair and replace upholstery, trim and hardware.
- Demonstrate knowledge of procedures to detect and repair noises and leaks contributed to trim and hardware.

Course Duration: 30 Hours

Pre-Requisite(s): AB1620

Objectives and Content:

1. Define terminology associated with upholstery, trim and hardware.

2. Identify hazards and describe safe work practices pertaining to upholstery, trim and hardware.

3. Identify and describe exterior trim and hardware.

4. Identify and describe interior upholstery, trim and hardware.

5. Describe fasteners and adhesives used in the installation of upholstery, trim and hardware.

6. Describe the procedures used to repair or replace exterior trim.

7. Describe the procedures used to remove and apply pin stripes and decals.

8. Describe the procedures used to inspect interior upholstery, trim and hardware for collision related damage.

9. Describe the procedures used to repair or replace interior trim.

10. Describe the procedures used to repair or replace upholstery.

11. Describe the procedures used to detect leaks related to interior and exterior trim and hardware.

12. Describe the procedures used to repair leaks related to interior and exterior trim and hardware.

13. Describe the procedures used to locate noises related to interior and exterior trim and hardware.

14. Describe the procedures used to repair noises related to interior and exterior trim and hardware.

Practical Requirements:

1. Remove and re-install exterior trim.

2. Remove and install pin stripes and decals.

3. Inspect interior upholstery, trim and hardware for collision damage.

4. Remove and re-install interior trim.

5. Remove and re-install upholstery.

AB1811 Batteries

Learning Outcomes:

- Demonstrate knowledge of batteries, their operation and associated safety considerations.
- Demonstrate knowledge of procedures to test and charge batteries.
- Demonstrate knowledge of procedures to remove and replace batteries.

Duration: 10 Hours

Pre-Requisite(s): AB1610

Objectives and Content:

1. Define terminology associated with batteries.

2. Identify the types of batteries and describe their purpose, location, construction, operation and ratings.
    i. lead acid
    ii. hybrid/alternate fuel

3. Identify safety precautions relating to batteries.
    i. PPE
    ii. Conventional
        - handling
        - storage
        - disposal and recycling
    iii. hybrid/alternate fuel

4. Describe the procedures used to test batteries.

5. Describe the procedures used to charge batteries.

6. Describe the procedures used to remove and replace batteries.

Practical Requirements:

1. Remove and re-install batteries while maintaining memories.

2. Load test an automotive battery.

3. Charge an automotive battery.
    i. slow charge
    ii. fast charge

AB2811 Non-Structural Components

Learning Outcomes:

- Demonstrate knowledge of non-structural component repair and replacement procedures.
- Demonstrate knowledge of procedures to align and adjust non-structural components.

Duration: 60 Hours

Pre-Requisite(s): AB1641, AB1660

Objectives and Content:

1. Define terminology associated with non-structural components.

2. Identify hazards and describe safe work practices pertaining to repairing and replacing non-structural components.

3. Identify and describe non-structural components.

4. Identify and describe safety considerations when repairing or replacing non-structural components.

5. Describe the procedures used to inspect non-structural components.
    i. corrosion
    ii. collision

6. Identify and describe tools and equipment used to repair or replace non-structural components.

7. Describe the procedures used to repair non-structural components.
    i. original equipment manufacturer (OEM) recommendations
    ii. industry accepted standards

8. Describe the procedures used to remove and re-install non-structural components.

9. Describe the procedures used to replace non-structural components.
    i. full replacement
    ii. sectioning

10. Describe the procedures used to adjust and align non-structural components.

11. Describe the procedures and techniques used to protect electrical and electronic systems and components during repair.
    i. hybrid/alternate fuel vehicles
    ii. conventional fuel vehicles

Practical Requirements:

1. Inspect non-structural components for:
    i. corrosion
    ii. collision

2. Use tools and equipment to repair and replace non-structural components.

3. Repair non-structural components.

4. Remove and re-install non-structural components.

5. Adjust and align non-structural components such as doors, hinges, etc.

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.
   i. 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.

AM1240 MV Body Repair 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

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.

OT1220 Workplace Exposure

Learning Outcomes:

- Demonstrate knowledge of theory and practical applications of trade skills, safe work practices, appropriate workplace behaviour, and time management through exposure to the trade in an authentic work environment.

NOTE: The pre-apprentice must be supervised at the workplace. Supervision staff must be appropriately qualified to undertake that role – preferably a certified Journeyperson for the trade.

Duration: 60 Hours

Pre-Requisite(s): None

BLOCK II

AB2711 Electrical Fundamentals

Learning Outcomes:

- Demonstrate knowledge of electrical theory and its application.
- Demonstrate knowledge of equipment and procedures used to test electrical and electronic components.
- Demonstrate knowledge of safety precautions relating to electrical and electronic components.
- Demonstrate knowledge of electrical schematics, their applications and interpretation.

Duration: 75 Hours

Pre-Requisite(s): AB1811

Objectives and Content:

1. Describe the basic electrical theory.

2. Identify and define trade related terminology associated with electrical and electronic components.

3. Identify and describe safety precautions relating to electrical and electronic components.
    i. personal
    ii. vehicle
        - hybrid/alternate fuel

4. Identify and describe basic electrical and electronic components and their operation.

5. Identify instruments used to test electrical and electronic circuits and components and their procedures for use.

6. Identify and describe electrical schematics and their use in the trade.

7. Describe the procedures used to interpret electrical schematics in the repair of electrical systems and electronic components.
    i. original equipment manufacturer (OEM) recommendations

8. Describe the procedures used to test electrical and electronic circuits and components.

Practical Requirements:

1. Interpret an electrical schematic.

2. Demonstrate the use of Multi-meters.

3. Use OHMS law to calculate values in a parallel series circuit.

AB2700 Metal Working 2 (Aluminum)

Learning Outcomes:

- Demonstrate knowledge of metal working procedures for aluminum sheet metal repair.

Duration: 45 Hours

Pre-Requisite(s): AB1660

Objectives and Content:

1. Define terminology associated with aluminum panel repair.

2. Identify hazards and describe safe work practices pertaining to aluminum panel repair.
    i. personal
    ii. equipment
    iii. vehicle
    iv. shop/facility

3. Identify the series of aluminum.

4. Identify and describe types of damage to aluminum sheet metal.
    i. direct
    ii. indirect

5. Identify considerations when performing metal work on aluminum sheet metal.
    i. tool selection
    ii. repair sequence
    iii. protection of adjacent panels
    iv. panel preparation
    v. corrosion protection

6. Identify the types of panels and their associated repair procedures.

i. accessible
   - hammer and dolly
   - shrinking (hot or cold)

ii. limited access
   - prybar
   - pick
   - dent puller

7. Describe the procedures used to rough out and align damaged aluminum sheet metal.

8. Describe the procedures used to prepare aluminum sheet metal for finishing.

Practical Requirements:

1. Unlock and shape metal to contour.

2. Prepare aluminum sheet metal for finishing.

AB2720 Position Arc Welding (GMAW)

Learning Outcomes:

- Demonstrate knowledge required for welding light metal structures with respect to various codes and standards.
- Demonstrate safety practices in potentially harmful situations.

Duration: 30 Hours

Pre-Requisite(s): AB1620, AB1671

Objectives and Content:

1. Fillet weld vertical.

2. Fillet weld overhead.

3. Butt weld horizontal.

4. Butt weld vertical.

5. Butt weld overhead.

Practical Requirements:

1. Fillet weld light metals vertical (GMAW).
    i. describe the GMAW process used on the vertical position such as work and travel angle, gun manipulation, defects commonly encountered and effects of welding variables
    ii. run stringer beads in vertical position on m.s.
    iii. weld in vertical position
        - "T" joint
        - lap joint

2. Fillet weld light metals overhead (GMAW).
    i. describe the overhead position, the necessary position, the necessary safety, positioning of the joint, common defects encountered, gun manipulation, effects of welding variables on weld characteristics
    ii. run stringer beads on overhead position
    iii. weld in the overhead position
        - "T" joint
        - lap joint

3. Butt weld light metals horizontal (GMAW).
    i. describe horizontal butt welds, joint design, joint fit up, common defects, work and travel angles, gun manipulation, welding variables and characteristics
    ii. weld butt joint
        - square butt joint
        - singles "V" joint
    iii. perform guided bend test

4. Butt weld light vertical (GMAW).
    i. describe the vertical position butt weld joint design and fit up, common defects, work and travel angles, gun manipulation, effects of weld in vertical position
        - square butt
        - single vee
    ii. perform guided bend test

5. Butt weld light metals overhead (GMAW).
    i. describe the butt weld in the overhead position, joint design and fit up, common defects, work and travel angles, gun manipulation, effects of welding variables and characteristics
    ii. weld butt joint
        - square butt joint
        - single "v" joint
    iii. perform guided bend test

AB2730 Restraint Systems

Learning Outcomes:

- Demonstrate knowledge of types of restraint systems, their components and operation.
- Demonstrate knowledge of procedures to replace restraint systems.
- Demonstrate knowledge of safety considerations relating to restraint systems.

Duration: 30 Hours

Pre-Requisite(s): AB2711, AB1811

Objectives and Content:

1. Define terminology associated with restraint systems.

2. Identify the types of restraint systems and their components and operation.
    i. active
    ii. passive

3. Identify and interpret documentation relating to servicing restraint systems.
    i. service manuals
    ii. original equipment manufacturer (OEM) recommendations

4. Identify safety considerations relating to restraint systems and their components.
    i. handling
    ii. storage
    iii. disposal

5. Describe the procedures used to remove seat belt restraint systems and their components.

6. Describe the procedures used to inspect seat belt restraint systems and their components.

7. Describe the procedures used to install seat belt restraint systems and their components.

8. Describe the procedures used to remove air bags and their related components.

9. Describe the procedures used to install air bags and their related components.

10. Describe the procedures used to perform operation check of restraint systems.

Practical Requirements:

1. Inspect seat belts.

2. Locate and identify Safety Restraint Systems (SRS).

3. Locate and retrieve restraint related codes.

4. Remove and re-install air bags.

AB2740 Structural Components

Learning Outcomes:

- Demonstrate knowledge of the procedures to repair and replace structural components.
- Demonstrate knowledge of procedures to adjust and align structural components.

Duration: 60 Hours

Pre-Requisite(s): AB1641, AB1660

Objectives and Content:

1. Define terminology associated with structural components.

2. Identify hazards and describe safe work practices pertaining to repairing or replacing structural components.

3. Identify and describe structural components.

4. Identify and explain safety considerations when repairing or replacing structural components.

5. Describe the procedures used to inspect structural components for:
    i. corrosion
    ii. collision

6. Identify and describe tools and measuring equipment used to repair or replace structural components.

7. Describe the procedures used to repair structural components.
    i. original equipment manufacturer (OEM) recommendations
    ii. industry accepted standards

8. Describe the procedures used to remove and re-install structural components.

9. Describe the procedures used to replace structural components.
    i. full replacement
    ii. sectioning

10. Describe the procedures used to adjust and align structural components.

11. Describe the procedures and techniques used to protect electrical and electronic systems and components during repair.
    i. hybrid/alternate fuel vehicles
    ii. conventional fuel vehicles

Practical Requirements:

1. Inspect structural components for corrosion and collision.

2. Use tools and equipment to repair and replace structural components.

3. Repair structural components.

4. Remove and re-install structural components.

5. Adjust and align structural components.

BLOCK III

AB1741 Non-Metal Repair

Learning Outcomes:

- Demonstrate knowledge of non-metal materials, their applications and associated repair procedures.

Duration: 60 Hours

Pre-Requisite(s): AB1711

Objectives and Content:

1. Define terminology associated with non-metal repair.

2. Identify hazards and describe safe work practices pertaining to non-metal repairs.

3. Identify non-metal materials and describe their characteristics and applications.
    i. plastics
    ii. composites

4. Identify products and material used in non-metal repair.
    i. ISO codes (International Organization for Standardization)
    ii. adhesives
    iii. back pads
    iv. plastic adhesion promoters

5. Describe the procedures used for non-metal repairs of:
    i. plastics
    ii. composites

6. Identify plastic welding equipment and the associated set-up and shut-down procedures.

Practical Requirements:

1. Perform plastic welding and bonding procedures.

2. Repair polyplastic compounds.

3. Fill damaged area with plastic filler.

AB2821 Electrical and Electronic Repairs

Learning Outcomes:

- Demonstrate knowledge of procedures for diagnosing and determining damage to electrical and electronic systems and components.
- Demonstrate knowledge of procedures for diagnosing electrical and electronic systems and components.
- Demonstrate knowledge of procedures to repair and replace electrical and electronic components.
- Demonstrate knowledge of safety procedures while diagnosing and repairing electrical and electronic components.

Duration: 60 Hours

Pre-Requisite(s): AB2711

Objectives and Content:

1. Identify electrical systems, electronic systems and accessories.
    i. vehicle management systems
    ii. electrical generation and distribution systems
    iii. lighting systems
    iv. personal comfort systems
    v. hybrid/electric propulsion systems

2. Identify tools and equipment used in electrical and electronic repairs and adjustments and describe their applications and procedures for use.

3. Identify and describe safety considerations associated with electrical and electronic systems during repairs.
    i. personal
    ii. vehicle

4. Describe the procedures to protect electrical and electronic systems during repairs.
    i. hybrid/alternate-fuel vehicles
    ii. conventional vehicles

5. Describe electrical and electronic damage associated with collisions.

6. Describe the procedures used to diagnose electrical or electronic systems and components.

7. Describe the procedures used to repair, adjust and replace electrical and electronic systems and components.

Practical Requirements:

1. Align headlights as per manufacturer's specifications.

2. Diagnose and repair a lighting circuit.

3. Diagnose and repair:
    i. power window circuit
    ii. power lock circuit
    iii. horn circuit
    iv. wiper/washer circuit
    v. rear defrost circuit

AB2800 Refinishing 2

Learning Outcomes:

- Demonstrate knowledge of refinishing materials, their characteristics and mixing procedures.

Duration: 75 Hours

Pre-Requisite(s): AB2711

Objectives and Content:

1. Describe colour theory.

2. Describe the procedures used for colour matching.

3. Describe the procedures for mixing and applying single stage finishes.
   i. spot
   ii. panel
   iii. complete

4. Describe the procedures for mixing and applying basecoat/clearcoat and tri-coat finishes.
   i. spot
   ii. panel
   iii. complete

5. Describe the procedures used to refinish plastic parts.
   i. interior
   ii. exterior

6. Describe the procedures used to blend top coats.
   i. single- stage
   ii. multi-stage

7. Identify topcoat defects that occur during application and describe the procedures used to prevent or correct them.

8. Identify the considerations and requirements for determining curing cycles for alternate fuel vehicles.
    i. OEM specifications

Practical Requirements:

1. Demonstrate the procedure for:
    i. colour matching
    ii. for mixing and applying single stage finishes
    iii. for mixing and applying basecoat, clearcoat, and tri-coats.
    iv. refinishing plastic parts
    v. to correct and prevent topcoat defects

AB2830 Damage Analysis of Conventional Frames and Unitized Bodies

Learning Outcomes:

- Demonstrate knowledge of tools and equipment used to analyze damage to conventional frames and unitized bodies.
- Demonstrate knowledge of procedures to analyze damage to conventional frames and unitized bodies.

Duration: 45 Hours

Pre-Requisite(s): AB2740

Objectives and Content:

1. Define terminology associated with the damage analysis of conventional frames and unitized bodies.

2. Identify hazards and describe safe work practices pertaining to the damage analysis of conventional frames and unitized bodies.

3. Identify energy management zones in conventional frames and unitized bodies as per manufacturing specifications.

4. Identify and describe measuring tools and equipment used to analyze damage to conventional frames and unitized bodies, their applications and procedures for use.

5. Identify and describe the procedures and considerations for analyzing damage to unitized bodies.

6. Identify and describe the procedures and considerations for analyzing damage to conventional frames.

Practical Requirements:

1. Identify and locate energy management zones in conventional frames and unitized bodies.

2. Perform damage analyses on both a conventional frame and a unitized body vehicle.

BLOCK IV

AB2901 Mechanical Systems and Components

Learning Outcomes:

- Demonstrate knowledge of procedures for inspecting and determining damage to mechanical systems and components.
- Demonstrate knowledge of procedures to repair and replace mechanical systems and components.

Duration: 68 Hours

Pre-Requisite(s): Block I

Objectives and Content:

1. Describe terminology associated with mechanical systems and components.

2. Identify mechanical components.
    i. drive train
    ii. exhaust system
    iii. fuel system
    iv. heating/cooling system
    v. accessories
    vi. window regulators
    vii. door latches

3. Identify and describe safety considerations relating to servicing mechanical systems and components.
    i. personal
    ii. shop/facility
    iii. equipment
    iv. environment

4. Identify and describe safety regulations and documentation relating to servicing mechanical systems.
    i. jurisdictional regulations
    ii. federal regulations

5. Identify tools and equipment used to service mechanical systems and components.

6. Describe the procedures to inspect mechanical systems for collision related damage.

7. Describe the procedures used to remove and re-install mechanical components in order to perform collision repairs.

8. Describe the procedures used to clean, repair and replace mechanical systems components.

9. Describe the procedures used to perform operational check of mechanical system and components.

Practical Requirements:

1. Perform an inspection of the mechanical systems on a vehicle for collision damage.

2. Remove, clean, repair, and re-install mechanical components of a vehicle.

SV1110 Ozone Depletion

Learning Outcomes:

- Upon successful completion of this unit, the apprentice will be able to write an exam covering the regulation ozone-depleting substances with a pass of 75%.

Duration: 7 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Describe procedures for handling ozone-depleting substances (refrigerants) used in motor vehicles as per regulations.

2. Identify the Act relating to ozone-depletion substances regulations.

AB2910 Steering, Suspension and Braking Systems

Learning Outcomes:

- Demonstrate knowledge of procedures for inspecting and determining damage to steering, suspension and braking systems and components.
- Demonstrate knowledge of the procedures used to determine damage to steering, suspension and braking systems and components.
- Demonstrate knowledge of procedures to repair and replace steering, suspension and braking systems and components.

Duration: 75 Hours

Pre-Requisite(s): AB2901

Objectives and Content:

1. Identify types of steering and suspension systems and their components.

2. Identify and explain terminology associated with steering, suspension and braking systems and components.

3. Define and explain terminology associated with steering, suspension and braking systems and components.

4. Identify and describe regulations and documentation relating to servicing steering, suspension and braking systems.

5. Identify and describe safety considerations relating to servicing steering, suspension and braking systems and components.
    i. personal
    ii. shop/facility
    iii. environment
    iv. liability

6. Identify tools and equipment used to service steering, suspension and braking systems components.

7. Describe the procedures to identify damaged or worn steering and suspension system components.

8. Describe the procedures used to remove and re-install steering, suspension and braking components in order to perform collision repairs.

9. Describe the procedures used to service steering and suspension components.

10. Identify the alignment process and its importance in the repair of steering and suspension system components.

11. Describe the procedures used to service and replace braking system components.

12. Describe the procedures used to perform operational check of steering, suspension and braking system and components.

Practical Requirements:

1. Inspect and repair tires.

2. Remove tires from rims.

3. Replace tires.

4. Balance wheel and tire assemblies.

5. Clean, inspect and repack serviceable wheel bearing.

6. Identify and locate different types of suspension systems.

7. Locate and identify steering linkage systems.

8. Identify and locate various braking systems (drum and disc).

9. Identify and locate ABS brake components.

10. Retrieve ABS trouble codes.

11. Remove and re-install steering, suspension and braking components.

12. Replace steering components.

13. Perform power-steering pressure tests.

AB2920 Unitized Body Repairs

Learning Outcomes:

- Demonstrate knowledge of equipment used to repair unitized bodies, their applications and procedures for use.
- Demonstrate knowledge of procedures used to repair unitized bodies.
- Demonstrate knowledge of anchoring and pulling techniques and procedures.

Duration: 30 Hours

Pre-Requisites: AB2830

Objectives and Content:

1. Define and explain terminology relating to repairing unitized bodies.

2. Identify and describe safety precautions relating to straightening and repairing unitized bodies.
    i. personal
    ii. shop/facility
    iii. vehicle
    iv. liability

3. Identify measuring equipment and describe its application and procedures for use.

4. Identify the type of damage and determine the appropriate repair procedure.

5. Identify straightening equipment and describe its applications and procedures for use.

6. Identify anchoring techniques and procedures used for unitized body repair.

7. Describe the procedures used to repair unitized bodies.
    i. original equipment manufacturer (OEM) specification

8. Explain technician liability and responsibility for proper repair.

Practical Requirements:

1. Set-up and use measuring equipment used in repairing unitized bodies.

2. Set-up and use straightening equipment used in repairing unitized bodies.

3. Demonstrate anchoring techniques and procedures used for repairing unitized bodies.

AB2930 Conventional Frame Repair

Learning Outcomes:

- Demonstrate knowledge of equipment used to repair and align frames, their applications and procedures for use.
- Demonstrate knowledge of procedures used to repair and align frames.
- Demonstrate knowledge of sectioning procedures for frames.
- Demonstrate knowledge of anchoring and pulling techniques and procedures.

Duration: 30 Hours

Pre-Requisite(s): AB2830

Objectives and Content:

1. Define and explain terminology relating to repairing conventional frames.

2. Identify and describe safety precautions relating to repairing and aligning conventional frames.
   i. personal
   ii. shop/facility
   iii. vehicle
   iv. liability

3. Identify and describe types of conventional frame construction.

4. Identify measuring equipment and describe its application and procedures for use.

5. Describe the procedures to identify the type of damage and determine the appropriate repair procedure.

6. Identify straightening equipment and describe its applications and procedures for use.

7. Identify anchoring techniques and procedures used for conventional frame repair.

8. Describe the procedures used to repair conventional frames.
    i. original equipment manufacturer (OEM) specifications

9. Describe the procedures used to section a conventional frame.
    i. original equipment manufacturer (OEM) specifications

10. Explain technician liability and responsibility for repair.

11. Identify anchoring and pulling techniques used for conventional frame repair and describe their applications and procedures for use.

Practical Requirements:

1. Set-up and use measuring equipment used for repairing conventional frames.

2. Demonstrate the use of straightening equipment.

3. Demonstrate anchoring techniques and procedures used for conventional frame repair.

AB2940 Damage Analysis and Estimating Costs

Learning Outcomes:

- Demonstrate knowledge of the procedures used to perform damage analysis.
- Demonstrate knowledge of the procedures used to prepare estimate documentation.

Course Duration: 30 Hours

Pre-Requisites: Block I

Objectives and Content:

1. Define terminology associated with damage analysis and estimate documentation.

2. Describe the importance of effective communication relating to preparing estimates.
   i. customers
   ii. co-workers
   iii. appraisers
   iv. insurance adjusters

3. Identify the sources of information used in the preparation of estimates.

4. Describe the procedures used to perform estimates.

5. Describe the procedures used to prepare estimate documentation.

Practical Requirements:

1. Locate and list all of the necessary sources of information from the vehicle and applicable databases.

2. Perform estimate and prepare estimate documentation.

D. 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, Wage Rates and Advanced Training Criteria

Progression Schedule

Motor Vehicle Body Repairer (Metal and Paint) - 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 Block 1 training ▪ Pass Block 1 exam ▪ Minimum 1800 hours of combined relevant work experience and training	2nd Year
2nd	70%	▪ Completion of Block 2 training ▪ Pass Block 2 exam ▪ Minimum 3600 hours of combined relevant work experience and training	3rd Year
3rd	80%	▪ Completion of Block 3 training ▪ Pass Block 3 exam ▪ Minimum 5400 hours of combined relevant work experience and training	4th Year
4th	90%	▪ Completion of Block 4 training ▪ 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.

Block Exams

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

Motor Vehicle Body Repairer (Metal and Paint) - 7200 Hours		
CLASS CALLS		
Call Level	Requirements for Class Call	Hours awarded for In-School Training
Direct Entry Apprentice: PLA & / or Block 1	▪ Minimum of 1000 hours of relevant work experience ▪ Prior Learning Assessment (PLA) at designated college (if applicable)	To be determined by the number of courses completed after each class call
Block 2	▪ Minimum of 3000 hours of relevant work experience and training	240
Block 3	▪ Minimum of 5000 hours of relevant work experience and training	240
Block 4	▪ Minimum of 7000 hours of relevant work experience and training	240

Direct Entry Apprentice

- Must complete Block 1 courses through PLA and / or in-school training.
- Block 1 training is to be completed via class calls; up to 16 weeks of training per calendar year.
- Must attend in-school training until Block 1 is complete before attending Blocks 2 or higher

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 and Skills within 30 days of the decision.

E. 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.

F. 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 and Skills.

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.