Apprenticeship and Industry Training

Auto Body Technician
Apprenticeship Course Outline

010.1 (2017)
Auto Body Technician: apprenticeship course outline

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Auto Body Technician
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Course Outline

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Apprenticeship

Apprenticeship is post-secondary education with a difference. Apprenticeship begins with finding an employer. Employers hire apprentices, pay their wages and provide on-the-job training and work experience. Approximately 80 per cent of an apprentice's time is spent on the job under the supervision of a certified journeyperson or qualified tradesperson. The other 20 per cent involves technical training provided at, or through, a post-secondary institution — usually a college or technical institute.

To become certified journeypersons, apprentices must learn theory and skills, and they must pass examinations. Requirements for certification—including the content and delivery of technical training—are developed and updated by the Alberta Apprenticeship and Industry Training Board on the recommendation of Auto Body Technician Provincial Apprenticeship Committee.

The graduate of the Auto Body Prepper apprenticeship training is a journeyperson who will be able to:
- be proficient in all phases of auto body prepping
- use hand tools and powered equipment
- relate to the work of other tradespeople in the automotive industry
- apply primers, primer surfacers and corrosion proofing materials

The graduate of the Auto Body Refinisher apprenticeship training is a journeyperson who will be able to:
- be proficient in all phases of auto body refinishing
- use hand tools and powered equipment
- relate to the work of other tradespeople in the automotive industry
- apply primers, primer surfacers and corrosion proofing materials
- refinish motor vehicles

The graduate of the Auto Body Repairer apprenticeship training is a journeyperson who will be able to:
- be proficient in all phases of auto body repair
- use hand tools and powered equipment
- relate to the work of other tradespeople in the automotive industry
- straighten and align frames and unitized structures
- apply primers, primer surfacers and corrosion proofing materials
- repair, replace and align chassis components
- repair and replace vehicle support systems
- repair and replace structural and non-structural motor vehicle sections

The graduate of the Auto Body Technician apprenticeship training is a journeyperson who will be able to:
- be proficient in all phases of auto body refinishing and repair
- use hand tools and powered equipment
- relate to the work of other tradespeople in the automotive industry
- apply primers, primer surfacers and corrosion proofing materials
- paint motor vehicles
- straighten and align frames and unitized structures
- repair, replace and align chassis components
- repair and replace vehicle support systems
- repair and replace structural and non-structural motor vehicle sections
Apprenticeship and Industry Training System

Industry-Driven

Alberta’s apprenticeship and industry training system is an industry-driven system that ensures a highly skilled, internationally competitive workforce in more than 50 designated trades and occupations. This workforce supports the economic progress of Alberta and its competitive role in the global market. Industry (employers and employees) establishes training and certification standards and provides direction to the system through an industry committee network and the Alberta Apprenticeship and Industry Training Board. The Alberta government provides the legislative framework and administrative support for the apprenticeship and industry training system.

Alberta Apprenticeship and Industry Training Board

The Alberta Apprenticeship and Industry Training Board provides a leadership role in developing Alberta’s highly skilled and trained workforce. The board’s primary responsibility is to establish the standards and requirements for training and certification in programs under the Apprenticeship and Industry Training Act. The board also provides advice to the Minister of Advanced Education on the needs of Alberta’s labour market for skilled and trained workers, and the designation of trades and occupations.

The thirteen-member board consists of a chair, eight members representing trades and four members representing other industries. There are equal numbers of employer and employee representatives.

Industry Committee Network

Alberta’s apprenticeship and industry training system relies on a network of industry committees, including local and provincial apprenticeship committees in the designated trades, and occupational committees in the designated occupations. The network also includes other committees such as provisional committees that are established before the designation of a new trade or occupation comes into effect. All trade committees are composed of equal numbers of employer and employee representatives. The industry committee network is the foundation of Alberta’s apprenticeship and industry training system.

Local Apprenticeship Committees (LAC)

Wherever there is activity in a trade, the board can set up a local apprenticeship committee. The board appoints equal numbers of employee and employer representatives for terms of up to three years. The committee appoints a member as presiding officer. Local apprenticeship committees:

- monitor apprenticeship programs and the progress of apprentices in their trade, at the local level
- make recommendations to their trade’s provincial apprenticeship committee (PAC) about apprenticeship and certification in their trade
- promote apprenticeship programs and training and the pursuit of careers in their trade
- make recommendations to the board about the appointment of members to their trade’s PAC
- help settle certain kinds of disagreements between apprentices and their employers
- carry out functions assigned by their trade’s PAC or the board
Provincial Apprenticeship Committees (PAC)

The board establishes a provincial apprenticeship committee for each trade. It appoints an equal number of employer and employee representatives, and, on the PAC’s recommendation, a presiding officer - each for a maximum of two terms of up to three years. Most PACs have nine members but can have as many as twenty-one. Provincial apprenticeship committees:

- Make recommendations to the board about:
  - standards and requirements for training and certification in their trade
  - courses and examinations in their trade
  - apprenticeship and certification
  - designation of trades and occupations
  - regulations and orders under the Apprenticeship and Industry Training Act
- monitor the activities of local apprenticeship committees in their trade
- determine whether training of various kinds is equivalent to training provided in an apprenticeship program in their trade
- promote apprenticeship programs and training and the pursuit of careers in their trade
- consult with other committees under the Apprenticeship and Industry Training Act about apprenticeship programs, training and certification and facilitate cooperation between different trades and occupations
- consult with organizations, associations and people who have an interest in their trade and with employers and employees in their trade
- may participate in resolving certain disagreements between employers and employees
- carry out functions assigned by the board

Auto Body Technician PAC Members at the Time of Publication

Mr. M. Yeo ......................... Calgary ................ Presiding Officer
Mr. M. Demas .................... Bowden .................... Employer
Mr. P. Ouellette ........ Bownyville ............... Employer
Mr. T. Robertson .......... Edmonton ............ Employer
Mr. T. Taniguchi ............ Lethbridge ............ Employer
Mr. S. Giordano ............ Sherwood Park ........ Employee
Mr. B. Hart ..................... Airdrie ................. Employee
Mr. D. Litzenberger .......... Stony Plain ........ Employee
Mr. G. Nishiguchi .......... Coaldale ............... Employee

Alberta Government

Alberta Advanced Education works with industry, employer and employee organizations and technical training providers to:

- facilitate industry’s development and maintenance of training and certification standards
- provide registration and counselling services to apprentices and employers
- coordinate technical training in collaboration with training providers
- certify apprentices and others who meet industry standards
Apprenticeship Safety

Safe working procedures and conditions, incident/injury prevention, and the preservation of health are of primary importance in apprenticeship programs in Alberta. These responsibilities are shared and require the joint efforts of government, employers, employees, apprentices and the public. Therefore, it is imperative that all parties are aware of circumstances that may lead to injury or harm.

Safe learning experiences and healthy environments can be created by controlling the variables and behaviours that may contribute to or cause an incident or injury. By practicing a safe and healthy attitude, everyone can enjoy the benefit of an incident and injury free environment.

Alberta Apprenticeship and Industry Training Board Safety Policy

The Alberta Apprenticeship and Industry Training Board (board) fully supports safe learning and working environments and emphasizes the importance of safety awareness and education throughout apprenticeship training - in both on-the-job training and technical training. The board also recognizes that safety awareness and education begins on the first day of on-the-job training and thereby is the initial and ongoing responsibility of the employer and the apprentice as required under workplace health and safety training. However the board encourages that safe workplace behaviour is modeled not only during on-the-job training but also during all aspects of technical training, in particular, shop or lab instruction. Therefore the board recognizes that safety awareness and training in apprenticeship technical training reinforces, but does not replace, employer safety training that is required under workplace health and safety legislation.

The board has established a policy with respect to safety awareness and training:

> The board promotes and supports safe workplaces, which embody a culture of safety for all apprentices, employers and employees. Employer required safety training is the responsibility of the employer and the apprentice, as required under legislation other than the Apprenticeship and Industry Training Act.

The board’s complete document on its ‘Apprenticeship Safety Training Policy’ is available at www.tradesecrets.alberta.ca; access the website and conduct a search for ‘safety training policy’.

Implementation of the policy includes three common safety learning outcomes and objectives for all trade course outlines. These common learning outcomes ensure that each course outline utilizes common language consistent with workplace health and safety terminology. Under the title of ‘Standard Workplace Safety’, this first section of each trade course outline enables the delivery of generic safety training; technical training providers will provide trade specific examples related to the content delivery of course outline safety training.
Occupational Health and Safety

A tradesperson is often exposed to more hazards than any other person in the work force and therefore should be familiar with and apply the Occupational Health and Safety Act, Regulations and Code when dealing with personal safety and the special safety rules that apply to all daily tasks.

Occupational Health and Safety (a division of Alberta Human Services) conducts periodic inspections of workplaces to ensure that safety regulations for industry are being observed.

Additional information is available at www.humanservices.alberta.ca

Technical Training

Apprenticeship technical training is delivered by the technical institutes and colleges in the public post-secondary system throughout Alberta. The colleges and institutes are committed to delivering the technical training component of Alberta apprenticeship programs in a safe, efficient and effective manner. All training providers place a strong emphasis on safety that complements safe workplace practices towards the development of a culture of safety for all trades.

The technical institutes and colleges work with Alberta’s Apprenticeship and Industry Training Board, industry committees and Alberta Advanced Education to enhance access and responsiveness to industry needs through the delivery of the technical training component of apprenticeship programs across the Province. They develop curriculum from the course outlines established by industry and provide technical training to apprentices.

The following institutions deliver Auto Body Technician apprenticeship technical training:
- Northern Alberta Institute of Technology
- Southern Alberta Institute of Technology

Procedures for Recommending Revisions to the Course Outline

Advanced Education and has prepared this course outline in partnership with the Auto Body Technician Provincial Apprenticeship Committee.

This course outline was approved on December 16, 2016 by the Alberta Apprenticeship and Industry Training Board on a recommendation from the Provincial Apprenticeship Committee. The valuable input provided by representatives of industry and the institutions that provide the technical training is acknowledged.

Any concerned individual or group in the province of Alberta may make recommendations for change by writing to:
- Auto Body Technician Provincial Apprenticeship Committee
c/o Industry Programs and Standards
Apprenticeship and Industry Training
Advanced Education
10th floor, Commerce Place
10155 102 Street NW
Edmonton AB  T5J 4L5

It is requested that recommendations for change refer to specific areas and state references used. Recommendations for change will be placed on the agenda for regular meetings of the Auto Body Technician Provincial Apprenticeship Committee.
Apprenticeship Route toward Certification

1. APPLICATION
   - CONTRACT AND RECORD BOOK
   - ENTRANCE EXAMINATION
     - PASS
     - FAIL
       - REALTEMPT
       - EDUCATIONAL IMPROVEMENT COURSE

2. ALBERTA GRADE 10 EDUCATION

3. Auto Body Prepper
   - PERIOD 1: 1600 Hours Work Experience Plus 6 Weeks Technical Training
   - PERIOD 2: 1800 Hours Work Experience Only
   - PERIOD 3: 1500 Hours Work Experience Plus 7 Weeks Technical Training
   - Journeyman Certificate Auto Body Prepper (3400 Hours)

4. Auto Body Repairer
   - PERIOD 1: 1600 Hours Work Experience Plus 6 Weeks Technical Training
   - PERIOD 2: 1500 Hours Work Experience Plus 7 Weeks Technical Training
   - PERIOD 3: 1500 Hours Work Experience Plus 7 Weeks Technical Training
   - Journeyman Certificate Auto Body Repairer (4600 Hours)

5. Auto Body Refinisher
   - PERIOD 1: 1600 Hours Work Experience Plus 6 Weeks Technical Training
   - PERIOD 2: 1600 Hours Work Experience Plus 6 Weeks Technical Training
   - PERIOD 3: 1500 Hours Work Experience Plus 7 Weeks Technical Training
   - Journeyman Certificate Auto Body Refinisher (3200 Hours)

6. Auto Body Technician
   - PERIOD 1: 1600 Hours Work Experience Plus 6 Weeks Technical Training
   - PERIOD 2: 1600 Hours Work Experience Plus 6 Weeks Technical Training
   - PERIOD 3: 1500 Hours Work Experience Plus 7 Weeks Technical Training
   - Journeyman Certificate Auto Body Technician (6200 Hours)

7. Interprovincial Red Seal Automotive Painter
8. Interprovincial Red Seal Motor Vehicle Body Repairer (Metal & Paint)
## Auto Body Technician Training Profile

**First Period (All Branches)**

(6 Weeks 30 Hours per Week – Total of 180 Hours)

### SECTION ONE

| STANDARD WORKPLACE SAFETY, INDUSTRY OVERVIEW, REGULATIONS AND ADMINISTRATION |
|:-----------------|-----------------|-----------------|
| **A**            | **B**            | **C**            |
| 2 Hours          | 2 Hours          | 2 Hours          |

| **D**            | **E**            | **F**            |
| Apprenticeship Training Program | Alberta’s Industry Network | Interprovincial Standards Red Seal Program |
| 2 Hours          | 2 Hours          | 2 Hours          |

| **G**            | **H**            | **I**            |
| Safety in the Workplace | Regulations that Affect the Trade | Workplace Coaching Skills |
| 6 Hours          | 6 Hours          | 3 Hours          |

### SECTION TWO

| COMPONENT REMOVAL, INSTALLATION AND FINAL DETAIL |
|:-----------------|-----------------|-----------------|
| **A**            | **B**            | **C**            |
| Tools            | Removal and Installation | Batteries |
| 8 Hours          | 30 Hours         | 3 Hours          |

| **D**            |
| Final Detail     |
| 6 Hours          |

### SECTION THREE

| SUBSTRATE PREPARATION |
|:-----------------|-----------------|-----------------|
| **A**            | **B**            | **C**            |
| Substrate Identification | Application of Fillers | Sanding |
| 6 Hours          | 18 Hours         | 24 Hours         |

| **D**            | **E**            |
| Masking          | Application of Undercoats |
| 18 Hours         | 30 Hours          |
Second Period (Technician & Refinisher)
(6 Weeks 30 Hours per Week – Total of 180 Hours)

<table>
<thead>
<tr>
<th>SECTION ONE</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shop Practices and Procedures</td>
<td>Shop Maintenance 18 Hours</td>
<td>Shop Procedures 6 Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION TWO</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Preparation</td>
<td>Topcoat Identification 18 Hours</td>
<td>Mixing 4 Hours</td>
<td>Colour Matching 27 Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION THREE</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topcoat Application</td>
<td>Application 95 Hours</td>
<td>Application Faults 12 Hours</td>
</tr>
</tbody>
</table>
### Third Period (Technician & Repairer)
(7 Weeks 30 Hours per Week – Total of 210 Hours)

<table>
<thead>
<tr>
<th>SECTION ONE</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEATING, CUTTING AND WELDING</td>
<td>Metal Heating and Cutting</td>
<td>Gas Metal Arc Welding (GMAW)</td>
<td>Resistance Spot Welding</td>
</tr>
<tr>
<td><strong>62 HOURS</strong></td>
<td>12 Hours</td>
<td>44 Hours</td>
<td>6 Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION TWO</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPAIR PLANNING FOR NON-STRUCTURAL DAMAGE</td>
<td>Non-Structural Damage Assessment</td>
<td>Material Identification</td>
<td>Panel Alignment</td>
</tr>
<tr>
<td><strong>36 HOURS</strong></td>
<td>6 Hours</td>
<td>6 Hours</td>
<td>24 Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION THREE</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-STRUCTURAL REPAIR</td>
<td>Panel Repair</td>
<td>Plastic Repair</td>
<td>Composite Repair</td>
</tr>
<tr>
<td><strong>90 HOURS</strong></td>
<td>78 Hours</td>
<td>9 Hours</td>
<td>3 Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION FOUR</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEHICLE SUPPORT SYSTEMS</td>
<td>Electrical</td>
<td>Heating, Ventilation and Air Conditioning</td>
<td>Engine Cooling Systems</td>
</tr>
<tr>
<td><strong>22 HOURS</strong></td>
<td>10 Hours</td>
<td>6 Hours</td>
<td>6 Hours</td>
</tr>
</tbody>
</table>
Fourth Period (Technician & Repairer)  
(7 Weeks 30 Hours per Week – Total of 210 Hours)

<table>
<thead>
<tr>
<th>SECTION ONE</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPAIR PLANNING FOR STRUCTURAL REPAIR</td>
<td>Structural Damage Estimates 9 Hours</td>
<td>Structural Work Plan Development 6 Hours</td>
<td>Gauging and Measuring 18 Hours</td>
</tr>
<tr>
<td>33 HOURS</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION TWO</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRUCTURAL COMPONENTS</td>
<td>Structural Correction 60 Hours</td>
<td>Sectioning and Replacement 55 Hours</td>
<td>Glass 6 Hours</td>
</tr>
<tr>
<td>121 HOURS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION THREE</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECHANICAL</td>
<td>Wheel Alignment 17 Hours</td>
<td>Vehicle Support Systems 18 Hours</td>
<td></td>
</tr>
<tr>
<td>35 HOURS</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION FOUR</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFETY SYSTEMS AND FINAL ASSEMBLY</td>
<td>Restraint Systems 9 Hours</td>
<td>Safety Systems 9 Hours</td>
<td>Final Assembly 3 Hours</td>
</tr>
<tr>
<td>21 HOURS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: The hours stated are for guidance and should be adhered to as closely as possible. However, adjustments must be made for rate of apprentice learning, statutory holidays, registration and examinations for the training establishment and Apprenticeship and Industry Training.
FIRST PERIOD TECHNICAL TRAINING
AUTO BODY TECHNICIAN TRADE
(ALL BRANCHES)
COURSE OUTLINE

UPON SUCCESSFUL COMPLETION OF THIS PROGRAM THE APPRENTICE SHOULD BE ABLE TO PERFORM THE FOLLOWING OUTCOMES AND OBJECTIVES.

SECTION ONE: STANDARD WORKPLACE SAFETY ................................................. 37 HOURS

INDUSTRY OVERVIEW, REGULATIONS AND ADMINISTRATION

A. Safety Legislation, Regulations & Industry Policy in the Trades ........................................ 2 Hours

*Outcome: Apply legislation, regulations and practices ensuring safe work in this trade.*

2. Describe the employer’s and employee’s role with Occupational Health and Safety (OH&S) regulations, Worksite Hazardous Materials Information Systems (WHMIS), fire regulations, Workers Compensation Board regulations and related advisory bodies and agencies.
3. Describe industry practices for hazard assessment and control procedures.
4. Describe the responsibilities of worker and employers to apply emergency procedures.
5. Describe tradesperson attitudes with respect to housekeeping, personal protective equipment and emergency procedures.
6. Describe the roles and responsibilities of employers and employees with the selection and use of personal protective equipment (PPE).
7. Maintain required PPE for tasks.
8. Use required PPE for tasks.

B. Climbing, Lifting, Rigging and Hoisting ........................................................................... 2 Hours

*Outcome: Use industry standard practices for climbing, lifting, rigging and hoisting in this trade.*

1. Describe manual lifting procedures.
2. Describe rigging hardware and associated safety factors.
3. Select equipment for rigging loads.
4. Describe hoisting and load moving procedures.
5. Maintain personal protective equipment (PPE) for climbing, lifting and load moving equipment.
6. Use PPE for climbing, lifting and load moving equipment.

C. Hazardous Materials & Fire Protection ................................................................................. 2 Hours

*Outcome: Apply industry standard practices for hazardous materials and fire protection in this trade.*

1. Describe roles, responsibilities, features and practices related to the Workplace Hazardous Materials Information System (WHMIS) program.
2. Describe three key elements of WHMIS.
3. Describe handling, storing and transporting procedures for hazardous material.
4. Describe venting procedures when working with hazardous materials.
5. Describe hazards, classes, procedures and equipment related to fire protection.
D. Apprenticeship Training Program ........................................................................................................................................2 Hours

**Outcome:** *Manage an apprenticeship to earn journeyman certification.*

1. Describe the contractual responsibilities of the apprentice, employer and Alberta Apprenticeship and Industry Training.
2. Describe the purpose of the apprentice record book.
3. Describe the procedure for changing employers during an active apprenticeship.
4. Describe the purpose of the course outline.
5. Describe the procedure for progressing through an apprenticeship.
6. Describe advancement opportunities in this trade.

E. Alberta’s Industry Network .......................................................................................................................................................2 Hours

**Outcome:** *Describe the role of the network of industry committees that represent trades and occupations in Alberta.*

1. Describe Alberta’s Apprenticeship and Industry Training system.
2. Describe roles and responsibilities of the Alberta Apprenticeship and Industry Training Board, the Government of Alberta and post-secondary institutions.
3. Describe roles and responsibilities of the Provincial Apprenticeship Committees (PACs), Local Apprenticeship Committees (LACs) and Occupational Committees (OCs).

F. Interprovincial Standards Red Seal Program ................................................................................................................................2 Hours

**Outcome:** *Use Red Seal products to challenge an Interprovincial examination.*

1. Identify Red Seal products used to develop Interprovincial examinations.
2. Use Red Seal products to prepare for an Interprovincial examination.

G. Safety in the Workplace .................................................................................................................................................................6 Hours

**Outcome:** *Demonstrate safety in an auto body shop.*

1. Describe types of personal hazards associated with the work assigned to an auto body technician (electrical tools, rotating machinery, comp. air, jacking and hoisting, exhaust gases, etc).
2. Use safety equipment and procedures when dealing with hazards associated with auto body work.
3. Control hazardous products used by auto body technicians.
4. Describe environmental hazards associated with the trade.
5. Use supplied air breathing systems.

H. Regulations that Affect the Trade ......................................................................................................................................................6 Hours

**Outcome:** *Follow work practices that adhere to the regulations of the Auto Body trade.*

1. Apply Workplace Health and Safety regulations.
2. Apply Occupational Health and Safety (OHS) regulations.
4. Apply fire regulations.
5. Apply Workers’ Compensation Board (WCB) regulations.
6. Apply environmental regulations including volatile organic compounds (VOC) legislation.

I. Workplace Coaching Skills

**Outcome:** Use coaching skills when training an apprentice.
1. Describe the process for coaching an apprentice.

J. Estimates

**Outcome:** Describe estimates and repair orders and develop a work plan.
1. Describe the requirements of an estimate.
2. Explain estimates and repair orders.
3. Explain the use of Original Equipment Manufacturer (OEM) service information.
4. Explain the use of aftermarket service information.
5. Develop a work plan.

K. Communication

**Outcome:** Communicate with all parties involved.
1. Practice professional verbal and nonverbal communication between trade related contacts.
2. Interpret standard operating procedures.

SECTION TWO: COMPONENT REMOVAL, INSTALLATION AND FINAL DETAIL

A. Tools

**Outcome:** Use auto body tools and equipment.
1. Identify hand tools.
2. Identify power tools.
3. Identify equipment.

B. Removal and Installation

**Outcome:** Install non-structural body components.
1. Identify types of body components.
2. Identify the purpose of trim.
3. Identify restraint systems.
4. Describe methods of fastening.
5. Assess components for hidden damage.
6. Describe component storage procedures.
7. Remove bolt on components.
8. Describe body panel alignment of bolt on components.
10. Describe leak test procedure.
11. Install bolt on components.
C. Batteries ........................................................................................................................................3 Hours

   Outcome: Service batteries.
   1. Identify battery types.
   2. Describe battery function.
   3. Describe battery charging.
   4. Describe battery boosting.

D. Final Detail ......................................................................................................................................6 Hours

   Outcome: Perform final detail.
   1. Describe detailing procedures.
   2. Describe types of decals and striping.
   3. Describe removal of decals and striping.
   4. Describe installation of decals and striping.
   5. Clean interior of vehicle.

   Clean exterior of vehicle.

SECTION THREE: ..................................SUBSTRATE PREPARATION .................................................. 96 HOURS

A. Substrate Identification ..................................................................................................................6 Hours

   Outcome: Identify types of paint finishes.
   1. Identify substrate.
   2. Identify condition of substrate.
   3. Describe substrate preparation methods.

B. Application of Fillers .....................................................................................................................18 Hours

   Outcome: Apply fillers.
   1. Describe surface preparation for filler.
   2. Apply fillers.
   3. Perform sanding of fillers.

C. Sanding ........................................................................................................................................24 Hours

   Outcome: Prepare surface for coatings.
   1. Describe undercoat preparation methods.
   2. Perform sanding for undercoats.
   3. Describe topcoat preparation methods.
   4. Perform sanding for topcoats.

D. Masking ..........................................................................................................................................18 Hours

   Outcome: Mask a vehicle.
   1. Describe methods and materials used for masking.
2. Mask a repair area for undercoat application.
3. Mask a repair area for topcoat application.

E. Application of Undercoats .................................................................................................................. 30 Hours

Outcome: Apply undercoats.
1. Describe undercoats.
2. Prepare undercoat materials.
3. Perform operating procedures for refinishing equipment.
4. Perform maintenance procedures for refinishing equipment.
5. Apply undercoats.
SECOND PERIOD TECHNICAL TRAINING
AUTO BODY TECHNICIAN TRADE (TECHNICIAN & REFINISHER)
COURSE OUTLINE

UPON SUCCESSFUL COMPLETION OF THIS PROGRAM THE APPRENTICE SHOULD BE ABLE TO PERFORM THE FOLLOWING OUTCOMES AND OBJECTIVES.

SECTION ONE: ..............................................SHOP PRACTICES AND PROCEDURES .............................................. 24 HOURS

A. Shop Maintenance ................................................................................................................................................ 18 Hours

   **Outcome:** Maintain refinishing operations.
   1. Describe spray environment set-up.
   2. Describe air supply systems.
   3. Describe record keeping procedures.
   4. Describe the management of materials inventory.
   5. Describe the management of waste materials.
   6. Identify mixing room requirements.
   7. Maintain mixing room.
   8. Maintain spray environment.

B. Shop Procedures ................................................................................................................................................. 6 Hours

   **Outcome:** Prepare refinish work plan.
   1. Explain a refinish supplement.
   2. Explain a refinish estimate.
   3. Identify refinish work required.
   4. Develop refinish schedule.

SECTION TWO: ................................................PRODUCT PREPARATION ......................................................... 49 HOURS

A. Topcoat Identification ........................................................................................................................................ 18 Hours

   **Outcome:** Identify required topcoat.
   1. Identify existing substrates.
   2. Describe topcoat considerations for complete panel refinish.
   3. Describe topcoat considerations for spot repair.
   4. Select a formula that corresponds to a paint code.

B. Mixing ................................................................................................................................................................. 4 Hours

   **Outcome:** Mix product.
   1. Describe additive considerations.
   2. Mix paint according to specifications.
   3. Correct an over-pour situation when mixing paint.
C. Colour Matching ..............................................................................................................................27 Hours

*Outcome:  Create a blendable match.*

1. Explain colour theory.
2. Identify a colour mismatch.
3. Adjust colour using gun technique.
4. Adjust colour by tinting.

SECTION THREE: ................................TOPCOAT APPLICATION ........................................... 107 HOURS

A. Application .....................................................................................................................................95 Hours

*Outcome:  Apply topcoat.*

1. Describe topcoat application.
2. Describe blending techniques and applications.
3. Prepare the refinisher for topcoat application.
4. Prepare the workpiece for topcoat application.
5. Prepare spray equipment for topcoat application.
6. Perform topcoat application.
7. Perform multi-stage blend repair.

B. Paint Faults ....................................................................................................................................12 Hours

*Outcome:  Correct paint faults.*

1. Identify paint faults.
2. Repair paint faults.
THIRD PERIOD TECHNICAL TRAINING
AUTO BODY TECHNICIAN TRADE (TECHNICIAN & REPAIRER)
COURSE OUTLINE

UPON SUCCESSFUL COMPLETION OF THIS PROGRAM THE APPRENTICE SHOULD BE ABLE TO PERFORM THE FOLLOWING OUTCOMES AND OBJECTIVES.

SECTION ONE: WELDING, HEATING AND CUTTING ............................ 62 HOURS

A. Metal Heating and Cutting .................................................................................................................. 12 Hours

**Outcome:** Use metal heating and cutting equipment.

1. Describe the characteristics of oxygen and acetylene.
2. Describe set up of oxygen and acetylene equipment.
3. Describe fusion welding processes.
4. Describe non-fusion welding processes.
5. Describe plasma cutting principles.
6. Perform heating operations.
7. Perform cutting operations.

B. Gas Metal Arc Welding (GMAW) ................................................................................................. 44 Hours

**Outcome:** Perform auto body GMAW.

1. Set up GMAW equipment.
2. Maintain GMAW equipment.
3. Identify weld faults.
4. Perform fillet welds on lap joints in all positions.
5. Perform groove welds on butt joints in all positions.
6. Perform plug welds in all positions.

C. Resistance Spot Welding ................................................................................................................ 6 Hours

**Outcome:** Use resistance spot welders.

1. Set up resistance spot welding equipment.
2. Maintain resistance spot welding equipment.
3. Identify weld faults.
4. Perform resistance spot welds.

SECTION TWO: REPAIR PLANNING FOR NON-STRUCTURAL DAMAGE .............................. 36 HOURS

A. Non-Structural Damage Assessment ............................................................................................... 6 Hours

**Outcome:** Verify extent of non-structural damage.

1. Visually inspect vehicle for direct and indirect damage.
2. Check for hidden damage on vehicle.
3. Identify non-structural damage.
4. Confirm damage to components.
5. Verify parts order for repair.
6. Explain repair estimate times.
7. Determine sequence of repair procedure.
8. Prepare work plan for non-structural repair.

B. Material Identification ........................................................................................................................................ 6 Hours

Outcome: Identify component material.
1. Describe materials used in auto body construction.
2. Explain precautions when working with auto body construction materials.

C. Panel Alignment .................................................................................................................................................... 24 Hours

Outcome: Fit non-structural components.
1. Describe bolt on component fitting sequence.
2. Perform panel alignment.

SECTION THREE: NON-STRUCTURAL REPAIR ...................................................................................................... 90 HOURS

A. Panel Repair ........................................................................................................................................................ 78 Hours

Outcome: Perform non-structural metal repair.
1. Describe types of metal damage.
2. Describe strategies for repairing metal damage.

B. Plastic Repair ......................................................................................................................................................... 9 Hours

Outcome: Perform plastic repair.
1. Describe types of plastic damage.
2. Describe strategies for repairing plastic damage.
3. Perform non-structural plastic repair.

C. Composite Repair .................................................................................................................................................. 3 Hours

Outcome: Perform composite repair.
1. Describe types of composite repair.
2. Describe strategies for composite repair.

SECTION FOUR: VEHICLE SUPPORT SYSTEMS .................................................................................................. 22 HOURS

A. Electrical .............................................................................................................................................................. 10 Hours

Outcome: Repair electrical systems.
1. Explain direct current (dc) electrical theory.
2. Interpret electrical diagrams.
3. Describe electronic component handling.
4. Diagnose electrical systems.
5. Perform wire harness repairs.
6. Perform connector repairs.

B. Heating, Ventilation and Air Conditioning (HVAC)................................................................. 6 Hours

Outcome: Describe service procedures for air conditioning systems.
1. Identify HVAC systems.
2. Identify HVAC components.
4. Describe installation of HVAC components.
5. Describe HVAC system service procedures.

C. Engine Cooling Systems ............................................................................................................. 6 Hours

Outcome: Describe service procedures for an engine cooling system.
1. Describe the operation of an engine cooling system.
2. Identify engine cooling system components.
3. Describe removal of engine cooling system components.
4. Describe installation of engine cooling system components.
5. Describe engine cooling system service procedures.
FOURTH PERIOD TECHNICAL TRAINING
AUTO BODY TECHNICIAN TRADE (TECHNICIAN & REPAIRER)
COURSE OUTLINE

UPON SUCCESSFUL COMPLETION OF THIS PROGRAM THE APPRENTICE SHOULD BE ABLE TO PERFORM THE FOLLOWING OUTCOMES AND OBJECTIVES.

SECTION ONE: REPAIR PLANNING FOR STRUCTURAL DAMAGE .............................................. 33 HOURS

A. Structural Damage Estimates ......................................................................................... 9 Hours

   **Outcome:** Prepare estimate for structural damage.
   1. Describe considerations for structural estimating.
   2. Prepare estimate for structural damage.

B. Structural Work Plan Development .................................................................................. 6 Hours

   **Outcome:** Prepare work plan for structural repair.
   1. Determine sequence of repair.
   2. Identify vehicle construction.
   3. Prepare work plan for structural repair.

C. Gauging and Measuring .................................................................................................... 18 Hours

   **Outcome:** Compare measurements to equipment manufacturer specifications.
   1. Explain measuring principals.
   2. Identify structural damage types.
   3. Use measuring equipment.

SECTION TWO: STRUCTURAL COMPONENTS ................................................................. 121 HOURS

A. Structural Correction ........................................................................................................ 60 Hours

   **Outcome:** Perform structural alignment.
   1. Identify anchoring procedures.
   2. Describe pulling and pushing techniques.
   3. Perform structural alignment.

B. Sectioning and Replacement .......................................................................................... 55 Hours

   **Outcome:** Replace structural components.
   1. Identify component material.
   2. Identify section locations.
   3. Describe sectioning procedures.
   4. Describe structural component replacement.
   5. Perform a structural repair.
   6. Perform a sectioning procedure.
C. Glass ........................................................................................................................................... 6 Hours

**Outcome:** Describe structural glass replacement.
1. Identify structural glass types.
2. Identify location of structural glass components.
3. Describe procedures for replacing structural glass.

SECTION THREE: ........................................ MECHANICAL ................................................... 35 HOURS

A. Wheel Alignment ....................................................................................................................... 17 Hours

**Outcome:** Describe the principles of wheel alignment.
1. Identify steering and suspension components.
2. Describe wheel alignment angles.
3. Describe wheel alignment procedures.
4. Identify alignment faults.

B. Vehicle Support Systems ........................................................................................................ 18 Hours

**Outcome:** Install mechanical components.
1. Describe considerations for removal of mechanical components.
2. Inspect mechanical components.
3. Remove mechanical components.
4. Describe considerations for installation of mechanical components.
5. Install mechanical components.

SECTION FOUR: .................... SAFETY SYSTEMS AND FINAL ASSEMBLY ......................... 18 HOURS

A. Restraint Systems ...................................................................................................................... 9 Hours

**Outcome:** Service vehicle restraint systems.
1. Describe restraint systems.
2. Identify damaged restraint system components.
3. Describe the replacement procedure of restraint system components.
4. Describe handling procedures for restraint components.

B. Safety Systems ........................................................................................................................ 9 Hours

**Outcome:** Describe vehicle safety systems.
1. Identify external safety systems of a vehicle.
2. Describe repair precautions for external safety systems.

C. Final Assembly ........................................................................................................................ 3 Hours

**Outcome:** Perform pre-delivery inspection.
1. Verify fit, finish and function of work plan related repair.