

AUTOMOTIVE TECHNICAL ACADEMY (ATA)

ATA-PB100

Fabrication & Panel Beating Technology

Curriculum Framework (Version 1.0)

Programme Status: Proposed for Locking

Programme Information

Programme Code:

ATA-PB100

Programme Title:

Fabrication & Panel Beating Technology

Qualification Level:

Professional Diploma

Duration:

48 Weeks

Training Days:

5 Days Per Week

Hours Per Day:

8 Hours

Total Contact Hours:

1,920 Hours

Teaching Philosophy

- **70% Practical = 1,344 Hours**
 - **30% Theory = 576 Hours**
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Entry Requirement

Successful completion of:

ATA-B000 – Automotive Body Works Foundation

or

Recognition of Prior Learning (RPL) in accordance with ATA admission policy.

Programme Goal

ATA-PB100

To produce competent automotive body repair and fabrication technicians capable of inspecting collision damage, repairing structural and non-structural body components, fabricating replacement panels, restoring vehicle body geometry, and carrying out professional body repairs using OEM-informed procedures, modern workshop equipment, and quality assurance standards.

Graduate Competency Profile

Graduates shall be able to:

- Assess collision and accident damage.
 - Interpret body repair estimates and repair plans.
 - Identify monocoque and body-on-frame vehicle structures.
 - Measure and restore body dimensions.
 - Remove and replace damaged panels.
 - Fabricate repair panels from sheet metal.
 - Perform MIG, MAG, TIG, resistance spot welding, brazing, and cutting operations.
 - Carry out dent repair using conventional and paintless dent repair (PDR) techniques where appropriate.
 - Operate chassis alignment and measuring equipment.
 - Apply corrosion protection and seam sealing.
 - Verify structural repairs against OEM specifications.
 - Prepare repair documentation and customer reports.
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Programme Structure

Module	Title	Weeks	Hours
PB100-01	Body Repair Workshop Practice, Safety & Professional Procedures	3	120
PB100-02	Vehicle Body Construction, Damage Assessment & Measurement	6	240
PB100-03	Sheet Metal Fabrication & Panel Forming	7	280
PB100-04	Welding, Cutting & Metal Joining Technologies	7	280

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Module	Title	Weeks	Hours
PB100-05	Structural Body Repair & Chassis Alignment	7	280
PB100-06	Panel Replacement, Corrosion Protection & Restoration	6	240
PB100-07	Advanced Dent Repair, Finishing & Quality Control	4	160
PB100-08	Workshop Estimating, Insurance Repairs & Documentation	3	120
PB100-09	Integrated Body Repair Projects	3	120
PB100-10	Industrial Attachment, Capstone Project & Final Assessment	2	80
TOTAL		48 Weeks	1,920 Hours

Module 1

Body Repair Workshop Practice, Safety & Professional Procedures

Duration: 3 Weeks

Topics

- PPE and workshop safety
- Safe lifting and vehicle support
- Fire prevention
- Welding safety
- Compressed air safety
- Chemical handling
- Workshop housekeeping (5S)
- Professional ethics
- Environmental management
- Job documentation

Practical Competencies

Students will:

- Apply body shop safety standards.
 - Operate workshop equipment safely.
 - Complete repair documentation professionally.
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Module 2

Vehicle Body Construction, Damage Assessment & Measurement

Duration: 6 Weeks

Topics

- Body-on-frame construction
- Monocoque construction
- Vehicle structural zones
- Damage classification
- Repair planning
- Measuring systems
- Datum points
- Alignment references
- Estimating repair scope

Practical Competencies

Students will:

- Assess collision damage.
 - Measure body dimensions.
 - Develop repair plans.
 - Identify repair or replacement decisions.
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Module 3

Sheet Metal Fabrication & Panel Forming

Duration: 7 Weeks

Topics

- Sheet metal properties
- Layout and marking
- Cutting
- Folding
- Shrinking and stretching
- Bead forming

- Flanging
- Fabricating repair sections
- Door skin fabrication
- Patch panel fabrication

Practical Competencies

Students will:

- Fabricate replacement panels.
 - Shape repair sections.
 - Produce accurate body repair components.
 - Finish fabricated panels to specification.
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Module 4

Welding, Cutting & Metal Joining Technologies

Duration: 7 Weeks

Topics

- MIG welding
- MAG welding
- TIG welding
- Resistance spot welding
- Brazing
- Plasma cutting awareness
- Oxy-acetylene cutting
- Weld inspection
- Heat management
- Joint preparation

Practical Competencies

Students will:

- Produce sound welds.
 - Join automotive body panels.
 - Replace structural sections safely.
 - Inspect weld quality.
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Module 5

Structural Body Repair & Chassis Alignment

Duration: 7 Weeks

Topics

- Chassis measurement
- Body alignment benches
- Pulling systems
- Structural straightening
- Door aperture correction
- Roof repair
- Floor pan repair
- Quarter panel repair
- Structural verification

Practical Competencies

Students will:

- Restore vehicle dimensions.
 - Operate alignment systems.
 - Perform structural repairs.
 - Verify repaired body geometry.
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Module 6

Panel Replacement, Corrosion Protection & Restoration

Duration: 6 Weeks

Topics

- Panel removal
- Panel replacement
- Adhesive bonding
- Riveting
- Seam sealing
- Underbody coatings
- Rust prevention
- OEM corrosion protection
- Restoration techniques

Practical Competencies

Students will:

- Replace damaged panels.

- Apply corrosion protection.
 - Restore repaired sections.
 - Prepare vehicles for refinishing.
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Module 7

Advanced Dent Repair, Finishing & Quality Control

Duration: 4 Weeks

Topics

- Conventional dent repair
- Paintless dent repair (PDR)
- Metal finishing
- Surface inspection
- Gap and flush checks
- Quality inspection
- Customer acceptance standards

Practical Competencies

Students will:

- Repair dents with minimal filler.
 - Inspect finished repairs.
 - Achieve OEM panel fit and finish.
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Module 8

Workshop Estimating, Insurance Repairs & Documentation

Duration: 3 Weeks

Topics

- Repair estimation
- Insurance procedures
- Photographic documentation
- Labour time estimation
- Parts identification
- Cost calculation
- Customer communication
- Workshop management

Practical Competencies

Students will:

- Prepare repair estimates.
 - Document repair progress.
 - Produce professional reports.
 - Communicate repair recommendations.
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Module 9

Integrated Body Repair Projects

Duration: 3 Weeks

Students complete integrated projects including:

- Collision damage assessment
 - Panel fabrication
 - Structural repair
 - Welding
 - Panel replacement
 - Corrosion protection
 - Final inspection
 - Documentation and presentation
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Module 10

Industrial Attachment, Capstone Project & Final Assessment

Duration: 2 Weeks

Students complete:

- Supervised industrial attachment
 - Complete body repair project
 - Practical trade test
 - Written examination
 - Technical presentation
 - Portfolio assessment
 - Exit competency assessment
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Required Laboratories & Workshops

- Body Repair Workshop
- Panel Fabrication Workshop

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- Structural Repair & Chassis Alignment Centre
 - Welding Laboratory
 - Metal Forming Workshop
 - Damage Assessment & Estimating Laboratory
 - Quality Inspection & Measurement Bay
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Essential Training Equipment

Students should train with:

- Chassis alignment bench
 - Electronic measuring system
 - Hydraulic pulling tower
 - MIG, MAG, and TIG welders
 - Resistance spot welder
 - Oxy-acetylene welding/cutting set
 - Sheet metal brake
 - English wheel
 - Shrinker/stretcher
 - Bead roller
 - Planishing hammer
 - Plasma cutter (where available)
 - Body hammers and dollies
 - Dent puller
 - Stud welder
 - Riveting tools
 - Pneumatic body saw
 - Air compressor
 - Body clamps
 - OEM body repair manuals
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Assessment Structure

Assessment	Weight
Continuous Practical Assessment	35%
Practical Trade Tests	30%

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Assessment	Weight
Written Examination	15%
Capstone Project	15%
Professional Conduct & Industrial Attachment	5%
TOTAL	100%

Career Opportunities

Graduates may work as:

- Panel Beating Technician
- Vehicle Body Repair Technician
- Collision Repair Technician
- Structural Body Repair Technician
- Automotive Fabrication Technician
- Chassis Alignment Technician
- Insurance Vehicle Damage Assessor
- Restoration Technician
- Body Shop Supervisor
- Independent Collision Repair Workshop Owner