

AUTOMOTIVE TECHNICAL ACADEMY (ATA)

ATA-OB100

Oven Bake Spray Painting Technology

Curriculum Framework (Version 1.0)

Programme Status: Proposed for Locking

Programme Information

Programme Code:

ATA-OB100

Programme Title:

Oven Bake Spray Painting 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-OB100

To produce highly competent automotive refinishing technicians capable of preparing vehicle surfaces, selecting and mixing paint systems, applying professional coatings, operating oven bake refinishing systems, matching colours accurately, correcting paint defects, and restoring vehicle finishes to OEM and premium aftermarket standards while maintaining safe, environmentally responsible workshop practices.

Graduate Competency Profile

Graduates shall be able to:

- Assess paint damage and refinishing requirements.
 - Identify OEM and aftermarket automotive coating systems.
 - Prepare vehicle panels for refinishing.
 - Perform masking for partial and complete vehicle refinishing.
 - Mix primers, basecoats, clearcoats, and specialty coatings accurately.
 - Match colours using colour cards, tinting systems, and computerized colour matching tools.
 - Set up, operate, and maintain spray guns.
 - Operate oven bake spray booths safely and efficiently.
 - Apply primers, sealers, basecoats, and clearcoats to professional standards.
 - Diagnose and correct paint defects.
 - Perform blending and spot repairs.
 - Carry out polishing and final finishing.
 - Apply workplace health, safety, and environmental standards.
 - Prepare professional estimates and customer documentation.
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Programme Structure

Module	Title	Weeks	Hours
OB100-01	Paint Shop Safety, Professional Practice & Workshop Operations	3	120
OB100-02	Automotive Paint Chemistry, Colour Science & Coating Systems	6	240
OB100-03	Surface Preparation, Primers & Masking Techniques	7	280

ATA-OB100

Module	Title	Weeks	Hours
OB100-04	Spray Equipment, Paint Mixing & Colour Matching	6	240
OB100-05	Spray Application & Oven Bake Refinishing Technology	8	320
OB100-06	Paint Defect Diagnosis, Correction & Finishing	5	200
OB100-07	Special Finishes, Plastic Repairs & Advanced Refinishing	4	160
OB100-08	Paint Shop Estimating, Quality Assurance & Environmental Compliance	3	120
OB100-09	Integrated Refinishing Workshop Projects	4	160
OB100-10	Industrial Attachment, Capstone Project & Final Assessment	2	80
TOTAL		48 Weeks	1,920 Hours

Module 1

Paint Shop Safety, Professional Practice & Workshop Operations

Duration: 3 Weeks

Topics

- PPE for refinishing
- Spray booth safety
- Fire prevention
- Hazardous chemical handling
- Compressed air systems
- Ventilation systems
- Paint shop housekeeping (5S)
- Professional ethics
- Environmental management
- Job documentation

Practical Competencies

Students will:

- Operate safely within a refinishing workshop.
 - Inspect spray booth safety systems.
 - Prepare professional job documentation.
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Module 2

Automotive Paint Chemistry, Colour Science & Coating Systems

Duration: 6 Weeks

Topics

- Automotive coating technology
- Paint chemistry
- Solvent-based coatings
- Waterborne coatings
- Primers
- Sealers
- Basecoats
- Clearcoats
- Hardeners
- Reducers
- Pearl, metallic, solid, and matte finishes
- Colour theory
- Colour tinting
- OEM paint codes

Practical Competencies

Students will:

- Identify coating systems.
 - Select appropriate paint materials.
 - Interpret paint manufacturer technical data sheets.
 - Mix coatings correctly.
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Module 3

Surface Preparation, Primers & Masking Techniques

Duration: 7 Weeks

Topics

- Paint removal
- Sanding techniques
- Feather edging
- Body filler finishing
- Surface cleaning
- Degreasing
- Primers
- Guide coats
- Masking methods
- Plastic masking
- Edge masking

Practical Competencies

Students will:

- Prepare complete vehicles for refinishing.
 - Apply primers correctly.
 - Mask vehicles professionally.
 - Inspect surface quality before painting.
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Module 4

Spray Equipment, Paint Mixing & Colour Matching

Duration: 6 Weeks

Topics

- Spray gun types
- HVLP and LVLP systems
- Air pressure adjustment
- Fluid control
- Fan pattern adjustment
- Paint viscosity
- Mixing ratios
- Digital scales
- Colour matching
- Tint adjustment
- Spectrophotometer awareness

Practical Competencies

Students will:

- Set up spray guns.
 - Mix paint accurately.
 - Match colours to OEM standards.
 - Perform spray pattern testing.
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Module 5

Spray Application & Oven Bake Refinishing Technology

Duration: 8 Weeks

Topics

- Primer application
- Basecoat application
- Clearcoat application
- Flash-off times
- Oven bake cycles
- Booth airflow management
- Temperature control
- Humidity control
- Full-body refinishing
- Spot repairs
- Blending techniques

Practical Competencies

Students will:

- Refinish complete panels.
 - Refinish complete vehicles.
 - Operate an oven bake booth safely.
 - Achieve professional paint finishes with minimal defects.
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Module 6

Paint Defect Diagnosis, Correction & Finishing

Duration: 5 Weeks

Topics

- Orange peel

- Runs and sags
- Solvent popping
- Fish eyes
- Dust contamination
- Dry spray
- Blistering
- Buffing
- Polishing
- Final inspection

Practical Competencies

Students will:

- Diagnose paint defects.
 - Correct finishing faults.
 - Restore gloss and surface quality.
 - Verify paint quality before delivery.
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Module 7

Special Finishes, Plastic Repairs & Advanced Refinishing

Duration: 4 Weeks

Topics

- Plastic bumper refinishing
- Flexible coatings
- Matte finishes
- Pearl finishes
- Candy finishes (awareness)
- Custom graphics (introductory)
- Restoration refinishing
- Wheel refinishing

Practical Competencies

Students will:

- Refinish plastic components.
- Apply specialty finishes.
- Restore painted accessories.
- Perform advanced blending.

Module 8

Paint Shop Estimating, Quality Assurance & Environmental Compliance

Duration: 3 Weeks

Topics

- Repair estimating
- Paint material calculations
- Labour estimation
- Insurance documentation
- Quality inspection
- Paint thickness measurement
- Waste disposal
- VOC awareness
- Customer communication

Practical Competencies

Students will:

- Prepare professional estimates.
 - Measure paint film thickness.
 - Complete quality inspections.
 - Produce customer-ready documentation.
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Module 9

Integrated Refinishing Workshop Projects

Duration: 4 Weeks

Students complete comprehensive practical projects including:

- Complete vehicle refinishing
 - Panel blending
 - Colour matching
 - Plastic bumper refinishing
 - Oven bake finishing
 - Paint defect correction
 - Final polishing
 - Customer delivery inspection
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Module 10

Industrial Attachment, Capstone Project & Final Assessment

Duration: 2 Weeks

Students complete:

- Supervised industrial attachment
 - Full refinishing capstone project
 - Practical trade test
 - Written examination
 - Technical presentation
 - Portfolio assessment
 - Exit competency assessment
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Required Laboratories & Workshops

- Surface Preparation Workshop
 - Paint Mixing Laboratory
 - Colour Matching Laboratory
 - Spray Gun Training Area
 - Oven Bake Spray Booth
 - Paint Defect Analysis & Correction Laboratory
 - Polishing & Finishing Bay
 - Paint Quality Inspection Area
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Essential Training Equipment

Students should train with:

- Down-draft or semi-down-draft oven bake spray booth
- HVLP and LVLV spray guns
- Air compressors and filtration systems
- Digital paint mixing scales
- Paint mixing machine
- Spectrophotometer (where available)
- Infrared drying lamps
- DA and orbital sanders
- Buffing and polishing machines
- Paint thickness gauge

- Colour cards and OEM colour libraries
 - Air blow guns
 - Respiratory protection systems
 - PPE kits
 - Manufacturer technical data sheets
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Assessment Structure

Assessment	Weight
Continuous Practical Assessment	35%
Practical Trade Tests	30%
Written Examination	15%
Capstone Refinishing Project	15%
Professional Conduct & Industrial Attachment	5%
TOTAL	100%

Career Opportunities

Graduates may work as:

- Automotive Spray Painter
- Automotive Refinishing Technician
- Oven Bake Spray Booth Technician
- Colour Matching Specialist
- Paint Shop Supervisor
- Paint Quality Control Inspector
- Vehicle Restoration Technician
- OEM or Dealership Paint Technician
- Insurance Repair Centre Refinishing Technician
- Independent Automotive Refinishing Business Owner