



ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship
Curriculum Standard

Automotive Painter

Trade Code: 410N

Date: 2005

Please Note: Apprenticeship Training and Curriculum Standards were developed by the Ministry of Training, Colleges and Universities (MTCU). As of April 8th, 2013, the Ontario College of Trades (College) has become responsible for the development and maintenance of these standards. The College is carrying over existing standards without any changes.

However, because the Apprenticeship Training and Curriculum Standards documents were developed under either the *Trades Qualification and Apprenticeship Act* (TQAA) or the *Apprenticeship and Certification Act, 1998* (ACA), the definitions contained in these documents may no longer be accurate and may not be reflective of the *Ontario College of Trades and Apprenticeship Act, 2009* (OCTAA) as the new trades legislation in the province. The College will update these definitions in the future.

Meanwhile, please refer to the College's website (<http://www.collegeoftrades.ca>) for the most accurate and up-to-date information about the College. For information on OCTAA and its regulations, please visit: <http://www.collegeoftrades.ca/about/legislation-and-regulations>

TABLE OF CONTENTS

Introduction	2
Stakeholder Information	3
Summary of Total Program In-School Training Hours.....	4
1. Applied Shop Practices	5
1.1 Learning and Communication Skills.....	6
1.2 Trade Calculations.....	9
1.3 Personal Computer Skills.....	11
1.4 Shop Safety	13
1.5 Shop Equipment	16
1.6 Hand Tools	20
1.7 Compressed Air Delivery	23
1.8 Spray Booths	26
Applied Shop Practices Evaluation.....	29
2. Preparation.....	30
2.1 Trim / Hardware	31
2.2 Preparation (Cleaning and Masking)	35
2.3 Paint Identification	37
2.4 Sanding.....	39
2.5 Spray Guns.....	42
2.6 Spray Gun Enhancement.....	44
Preparation Evaluation	47
3. Applications (Undercoat).....	48
3.1 Undercoats (Primer and Primer Surfacer).....	49
3.2 Corrosion Protection	51
3.3 Colour Matching.....	55
3.4 Colour Matching Application	58
Applications (Undercoat) Evaluation.....	61
4. Applications (Topcoat).....	62
4.1 Top Coat Application, Spot and Panel Repair.....	63
4.2 Top Coat Application, Complete Refinish	66
4.3 Plastic Refinish	68
4.4 Detailing.....	71
4.5 Masking Material and Over-Spray Removal	73
Applications (Topcoat) Evaluation	75
Reference Material	76

INTRODUCTION

This new curriculum standard for the Automotive Painter trade is designed down from the learning outcomes, which were in turn developed from the industry-approved training standard.

The curriculum is organized into one level of training, that include reportable subjects containing like or similar learning outcomes to reflect the units of the training standard. The hours chart indicates how the curriculum can be delivered in the current block release format and summarizes the hours of training for each reportable subject. Since the reportable subjects are all divisible by three they can be adapted to accommodate a more flexible training delivery other than block release.

The reportable subjects are cross-referenced to the training standard for ease of comparison. Each reportable subject and learning outcome identifies a recommended number of training hours. This hour allotment is broken into hours for instruction in theory and practical application. The division of the curriculum into reportable subjects that follow a natural progression of learning will allow training centres and apprentices flexibility in program delivery while still observing the importance of sequencing learning in a logical progression.

The curriculum is framed by and includes specific references to performance objectives in the Apprenticeship Training Standards for Automotive Painter. However, it identifies only the learning that takes place off the job, in a training centre. The in-school program focuses primarily on the theoretical knowledge required to master the performance objectives of the Training Standards. Employers are expected to extend the apprentice's knowledge and skills through appropriate practical training on the work site. Regular evaluations of the apprentice's knowledge and skills is conducted throughout training to assure that all apprentices have achieved the learning outcomes identified in the curriculum standard. The balance between theoretical and practical evaluation is identified for each unit of learning outcomes.

STAKEHOLDERS INFORMATION

A consortium of five colleges of applied arts and technology, working in collaboration with the MTCU (Ministry of Training, Colleges and Universities) and industry stakeholders, participated in the development of this document. A Project Steering Committee was struck to guide the project development process for the Automotive Painter document.

The first step in the development process was to assemble a team, the Project Steering Committee (PSC), consisting of both industry representatives and apprenticeship in-school deliverers. The PSC initiated the plan for the project development that followed. The PSC established a curriculum development group, responsible for the in-school apprenticeship curriculum document for the Automotive Painter trade.

The group worked with an advisory group, comprised of industry representatives, during the development of the curriculum, to ensure content validity. The curriculum development group members also worked with faculty in the colleges they were representing to broaden the consultation spectrum of the project. During various stages of the process, the PSC and the participating industry advisory group evaluated the draft curriculum document and provided feedback and recommendations for revisions. The revisions to the curriculum document were based on the new training standards that were developed by the MTCU in consultation with industry advisory groups. The format that is used in this document has been approved by the MTCU.

Program Summary of Reportable Subjects

	Reportable Subjects	Hours Total	Hours Theory	Hours Practical
Unit 1	Applied Shop Practices	60	44	16
Unit 2	Preparation	60	33	27
Unit 3	Applications (Undercoat)	60	28	32
Unit 4	Applications (Topcoat)	60	27	33
	Total	240	132	108

Automotive Painter

Number: 1

Title: Applied Shop Practices

Duration: Total Hours: 60
Theory: 44 hours Practical: 16 hours

Prerequisites: N/A

Co-requisites: N/A

1.1- Learning and Communication Skills

6 Total Hours Theory: 4 hours Practical: 2 hours

1.2- Trade Calculations

3 Total Hours Theory: 3 hours Practical: 0 hours

1.3- Personal Computer Skills

6 Total Hours Theory: 3 hours Practical: 3 hours

1.4- Shop Safety

9 Total Hours Theory: 9 hours Practical: 0 hours

1.5- Shop Equipment

9 Total Hours Theory: 6 hours Practical: 3 hours

1.6- Hand Tools

6 Total Hours Theory: 4 hours Practical: 2 hours

1.7- Compressed Air Delivery

9 Total Hours Theory: 7 hours Practical: 2 hours

1.8- Spray Booths

9 Total Hours Theory: 5 hours Practical: 4 hours

1.1- Learning and Communication Skills

Cross-reference to Learning Outcomes:

7007.02, 7007.04, 7007.05

Duration: 6 Total Hours Theory: 4 hours Practical: 2 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of learning and communication skills.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.1.1 Define the purpose and fundamentals of business and communication techniques.
- 1.1.2 Identify learning techniques.
- 1.1.3 Identify communication techniques.
- 1.1.4 Access information from manufacturers' service manuals and other related service materials.

Learning Content:

1.1.1 Define the purpose and fundamentals of business and communication techniques. [2/0]

- define the following:
 - communications
 - shop systems and lines of communication
- employability skills
 - attitude
 - behaviour
 - reliability
 - organizational skills
 - teamwork
- information accessing
 - service manuals
 - computer programs
 - texts
 - periodicals
 - internet
 - intranet
 - customer service

1.1.2 Identify learning techniques. [1/0]

- reading techniques
 - newspaper, periodicals, magazines
 - service literature
 - texts
- writing techniques
 - technical terms
 - principle of operations
 - work orders and invoice clarity
 - hard copy language
- listening techniques
 - concentration
- importance of:
 - verbal skills
 - clarity
 - tone
 - pronunciation

1.1.3 Identify communication techniques. [1/0]

- writing techniques
 - use of trade terminology
 - choice of words
- non-verbal communication
 - body language and actions
- verbal communications
 - tone of voice
 - selection of key words
 - focus on information
 - phone techniques
 - trade language terminology uses
- listening techniques

1.1.4 Access information from manufacturers' service manuals and other related service materials. [0/2]

- locate parts and service information by use of:
 - microfiche
 - service manuals
 - parts manuals
 - bulletins
 - computer software
 - CD-ROM (Compact Disc-Read Only Memory)
- use proper manuals to identify:
 - parts numbers
 - prices
 - service procedures
 - specifications
 - service bulletins
- locate
 - shop supplies
 - special tools
 - electrical test equipment
 - special equipment
 - technical data
- update
 - parts manuals
 - service manuals
 - microfiche
 - computers
 - service bulletins
 - internet

1.2- Trade Calculations

Cross-reference to Learning Outcomes:

7007.02

Duration: 3 Total Hours Theory: 3 hours Practical: 0 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of performing trade calculations as applied to automotive refinishing.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.2.1 Review and explain the fundamentals of basic arithmetic.
- 1.2.2 Review and explain the fundamentals to perform applied calculations.
- 1.2.3 Define and explain the fundamentals for systems of measurement and perform applied calculations.

Learning Content:

1.2.1 Review and explain the fundamentals of basic arithmetic.

[1/0]

- adding
- subtracting
- multiplying
- dividing
- apply mathematical calculations to complete:
 - work orders
 - invoices
 - mixing ratios

1.2.2 Review and explain the fundamentals to perform applied calculations for the following:

[1/0]

- fractions
- decimals
- converting fractions to decimals
- percentages

1.2.3 Define and explain the fundamentals for systems of measurement and perform applied calculations for the following:

[1/0]

- differences between metric and imperial systems of measurement
- use of conversion tables and charts

1.3- Personal Computer Skills

Cross-reference to Learning Outcomes:

7007.02

Duration: 6 Total Hours Theory: 3 hours Practical: 3 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of personal computer operating systems.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.3.1 Define the purpose, functions and application of the computer operating systems.
- 1.3.2 Perform various computer functions.

Learning Content:

1.3.1 Define the purpose, functions and application of the computer operating systems.
[3/0]

- introduction to the computer
 - components
 - device names and designations
 - hard / floppy disk data retention
 - CD-ROM
- software management
 - format
 - directory
 - file naming
 - copy
 - delete
 - rename

1.3.2 Perform the following computer functions.
[0/3]

- menu structure
- naming/saving conventions
- documentation
- copy/move
- file/merge/browse
- search/replace
- internet access
- internet information retrieval

1.4- Shop Safety

Cross-reference to Learning Outcomes:

7000.01, 7007.02, 7007.03, 7007.04, 7007.05, 7007.06, 7007.07, 7007.08, 7007.09

Duration: 9 Total Hours Theory: 9 hours Practical: 0 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of safe work practices in an automotive paint shop by conforming to required legislation.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.4.1 Define the purpose and fundamentals of safe work practices.
- 1.4.2 Describe *Workplace Hazardous Materials Information Safety (WHMIS)*.
- 1.4.3 Tracking, reporting, storage, handling and disposal of hazardous material.
- 1.4.4 Identify VOC (Volatile Organic Compound) handling procedures.
- 1.4.5 Describe the *Workplace Safety Insurance Board (WSIB)*.

Learning Content:

1.4.1 Define the purpose and fundamentals of safe work practices.
[2/0]

- personal attire
 - glasses
 - shields
 - guards
 - breathing filters
 - ventilation
 - masks
 - gloves
 - clothing
 - footwear
 - rings and other jewellery
- fire extinguishers
 - types of fires
 - application of specific types of extinguishers
- physical activities
 - lifting techniques
 - handling of tools and equipment
 - working conditions and organization of work area
 - application of force on wrenches and levers
- facilities
 - housekeeping / cleanliness
 - ventilation / exhausting
 - shop layout
 - test tanks
 - lighting
 - emergency responses
 - loose clothing
 - compressed air
 - tools and equipment

1.4.2 Describe *Workplace Hazardous Materials Information Safety (WHMIS)*.
[3/0]

- right to know
- legislation
- safe handling of products
- hazardous materials
- Material Safety Data Sheets (MSDS)

1.4.3 Tracking, reporting, storage, handling and disposal of hazardous material.
[1/0]

- volatile liquids
- cleaning agents
- diesel / gasoline fuels
- storage containers
- oil
- lubricants
- coolants
- batteries

1.4.4 Identify VOC (Volatile Organic Compound) handling procedures.
[2/0]

- tracking of VOC
 - inventory
 - mixing
 - jobs
- computerized equipment
 - mixing
 - record keeping

1.4.5 Describe the *Workplace Safety Insurance Board (WSIB)*.
[1/0]

- reporting accidents to company
- reporting accidents to WSIB
- required records
- training requirements
- accident prevention
- safety precautions
- personal protection equipment
- house keeping

1.5- Shop Equipment

Cross-reference to Learning Outcomes:

7001.02

Duration: 9 Total Hours Theory: 6 hours Practical: 3 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the purpose, construction, operation and maintenance procedures for various types of shop equipment.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.5.1 Define the purpose and fundamentals of shop equipment.
- 1.5.2 Explain the construction features of shop equipment.
- 1.5.3 Explain the principles of operation of power tools and equipment.
- 1.5.4 Demonstrate the ability to operate shop equipment and power tools according to the manufacturers' recommended safe operating procedures.
- 1.5.5 Perform the manufacturers' recommended maintenance procedures for shop equipment.

Learning Content:

1.5.1 Define the purpose and fundamentals of shop equipment.

[2/0]

- definitions
- shop layout
- shop equipment installation

1.5.2 Explain the construction features of shop equipment.

[2/0]

- grinders
 - bench grinders
 - portable grinders
- drills
 - portable drills
- vises
 - solid and swivel
 - soft and hard jaw
- lifting equipment
 - chain lifts
 - hoists
 - hydraulic jacks
 - pneumatic jacks
 - blocking equipment (safety stands)
- cleaning equipment
 - power spray
 - wash tanks
 - non corrosive
 - hot caustic corrosive
- cleaning equipment
 - power spray
 - wash tanks
 - non corrosive
- degreasing / cleaning agents
 - component protection
 - personal protection

1.5.3 Explain the principles of operation of power tools and equipment.
[2/0]

- power tools
 - impact wrenches
 - portable drills
 - grinders – bench / portable
 - washers and degreasers
- equipment
 - chain lifts
 - hydraulic, pneumatic and electric
 - mechanical and hydraulic jacks
 - safety blocking devices

1.5.4 Demonstrate the ability to operate shop equipment and power tools according to the manufacturers' recommended safe operating procedures.
[0/2]

- lifting and jacking equipment
 - lifting techniques single person / two person
 - chain lifts
 - hydraulic hoists
 - jacking
 - mechanical
 - hydraulic
 - safety blocking
- power tools
 - impact wrenches
 - portable drills
 - grinders
 - bench
 - portable
- cleaning of equipment
 - power spray
 - wash tanks
 - degreasing / cleaning agents

1.5.5 Perform the manufacturers' recommended maintenance procedures for shop equipment.

[0/1]

- maintenance
 - electrical cords and connections
 - air lines and connections
 - hydraulic lines and connections
 - moisture contamination
- identify and perform the recommended adjustments to shop equipment

1.6- Hand Tools

Cross-reference to Learning Outcomes:

7001.01

Duration: 6 Total Hours Theory: 4 hours Practical: 2 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the purpose, construction, operation and maintenance procedures for various hand tools.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.6.1 Define the purpose, types and styles of hand tools.
- 1.6.2 Explain the functions, construction, composition, types and styles of basic hand tools.
- 1.6.3 Perform the manufacturers' maintenance and recommended operating procedures for hand tools and perform the assigned operations.

Learning Content:

1.6.1 Define the purpose, types and styles of hand tools.

[2/0]

- features that determine quality
 - durability
 - metal alloys
 - coatings
- factors that determine application
 - weight
 - metal thickness
 - angles
 - gripping features
 - imperial and metric

1.6.2 Explain the functions, construction, composition, types and styles of basic hand tools.

[2/0]

- wrenches
 - torque wrenches
 - open end, box end, combination
 - flare nut (line)
 - adjustable
- socket sets
 - drives – $\frac{1}{4}$ " , $\frac{3}{8}$ " , $\frac{1}{2}$ " , $\frac{3}{4}$ " , 1"
 - ratchets
 - flex handles
- pliers
 - diagonal cutters
 - slip joint, channel lock, needle nose
- vise grip
- screwdrivers
 - flat blade and slotted
 - Phillips
 - Torx
 - Robertson
- cutting tools
 - hacksaw
 - chisel
 - files
 - twist drills
 - reamers
 - taps and dies

- driving tools
- hammers
 - ball-peen, bell-faced, soft-faced
- punches
 - centre, pin, starting, aligning
- cleaning tools
 - scrapers
 - wire brushes
 - power-driven rotary wire brushes
 - solvent brushes

1.6.3 Perform the manufacturers' maintenance and recommended operating procedures for hand tools and perform the assigned operations.

[0/2]

- maintenance
 - lubrication
 - cleaning
 - storage
- demonstrate and perform the applied operating techniques
 - holding techniques
 - pulling and torquing techniques
 - gripping techniques

1.7- Compressed Air Delivery

Cross-reference to Learning Outcomes:

7001.04

Duration: 9 Total Hours Theory: 7 hours Practical: 2 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of compressed air systems, their troubleshooting requirements and maintenance procedures.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.7.1 Define the purpose and fundamentals of compressed air systems.
- 1.7.2 Explain maintenance procedures and troubleshooting for compressed air systems.
- 1.7.3 Inspect and maintain compressed air systems with the prescribed service tools and equipment.

Learning Content:

1.7.1 Define the purpose and fundamentals of compressed air systems.
[3/0]

- pump – single-stage, multi-stage, rotary screw and turbine
- horsepower (HP)
- cubic feet per minute
- tank
- pressure switch
- safety valve
- foot valve
- centrifugal pressure release
- heat switch
- regulators
- hoses
- air lines
- belts, pulleys
- overload protection

1.7.2 Explain maintenance procedures and troubleshooting for compressed air systems.
[4/0]

- maintenance
 - cleaning
 - oil changing
 - component testing
 - water draining
- air intake
 - filtering
 - contamination
 - location of supply
- troubleshooting
 - overheating
 - knocking
 - run-on (excessive run time)
 - pumping oil
 - air leakage
 - hard start-up

- distribution system
 - air transformer
 - separator / regulators
 - condensers
 - lubricators
 - after coolers
 - air dryers
 - drains
 - manual
 - automatic

1.7.3 Inspect and maintain compressed air systems with the prescribed service tools and equipment.

[0/2]

- compressor inspection and maintenance
 - cleaning
 - oil change schedule
 - component testing
 - water draining
 - general inspection of belt wear
 - air testing
 - air line layout and routing

1.8- Spray Booths

Cross-reference to Learning Outcomes:

7001.06

Duration: 9 Total Hours Theory: 5 hours Practical: 4 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the principles of operation of various types of spray booths and required maintenance.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 1.8.1 Define the purpose and fundamentals of spray booths.
- 1.8.2 Explain the principles of operation of various types of booths.
- 1.8.3 Perform inspection and testing the operation of spray booth with the prescribed service tools and equipment.
- 1.8.4 Perform manufacturers' maintenance and cleaning of spray booths, prep stations and mixing room.

Learning Content:

1.8.1 Define the purpose and fundamentals of spray booths.
[2/0]

- walls
- intake filters
- arrestor filters
- seals
- air lines and hoses
- transformers
- regulators
- temperature controls
- bake unit
- lights

1.8.2 Explain the principles of operation of various types of booths.
[3/0]

- cross flow
- semi-downdraft
- downdraft
- solid back
- drive through
- prep stations
- mixing rooms

1.8.3 Perform inspection and testing the operation of spray booth with the prescribed service tools and equipment.
[0/2]

- demonstration of start-up and shutdown of spray booth
 - initial booth start-up
 - light activation
 - temperature control (spraying)
 - bake cycle and controls
 - purge, bake, cool-down
 - air flow rate
 - air regulator controls
 - shutdown
 - booth air balance

1.8.4 Perform manufacturers' maintenance and cleaning of spray booths, prep stations and mixing room.

[0/2]

- wall cleaning
- floors cleaning
- intake filter replacement and / or cleaning
- exhaust filter cleaning and / or replacement (dry)
- exhaust filter cleaning
- water recycling and replacement
- air line cleaning and inspection
- air regulator draining and inspection of contaminants
- inspection of seals
- lighting system

Automotive Painter

Number: 1

Title: **Applied Shop Practices**

Duration: Total Hours: 60

Theory: 44 hours Practical: 16 hours

Prerequisites: N/A

Co-requisites: N/A

Evaluation:

The following evaluation structure is only a suggested format. Specific evaluation of theory and practical components of training varies due to the resource material and training aides utilized.

Theory Testing	30%
Practical Application Exercises	50%
Research Project	10%
Notebook and Organizational Skills	10%

Automotive Painter

Number: 2

Title: Preparation

Duration: 60 Total Hours

Theory: 33 hours Practical: 27 hours

Prerequisites: Unit 1

Co-requisites: N/A

2.1- Trim/ Hardware

15 Total Hours Theory: 9 hours Practical: 6 hours

2.2- Preparation (Cleaning and Masking)

9 Total Hours Theory: 6 hours Practical: 3 hours

2.3- Paint Identification

6 Total Hours Theory: 3 hours Practical: 3 hours

2.4- Sanding

12 Total Hours Theory: 6 hours Practical: 6 hours

2.5- Spray Guns

9 Total Hours Theory: 6 hours Practical: 3 hours

2.6- Spray Gun Enhancement

9 Total Hours Theory: 3 hours Practical: 6 hours

2.1- Trim / Hardware

Cross-reference to Learning Outcomes:

7002.02

Duration: 15 Total Hours Theory: 9 hours Practical: 6 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the removal and replacement of various types of automotive trim / hardware.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 2.1.1 Define the purpose and fundamentals of trim / hardware.
- 2.1.2 Explain the removal and replacement procedures for automotive trim hardware and use of tools.
- 2.1.3 Describe the fundamentals of adhesives, fasteners and retainers used for mouldings, emblems, exterior trim, decals, and stripes.
- 2.1.4 Describe the removal and replacement procedures for mouldings, emblems and exterior trim decals, graphics and stripes.
- 2.1.5 Perform manufacturers' recommended removal and replacement procedures for automotive trim hardware and materials.
- 2.1.6 Perform manufacturers' removal and replacement procedures for mouldings, emblems, exterior trim, decals, graphics and stripes.

Learning Content:

2.1.1 Define the purpose and fundamentals of trim / hardware. [3/0]

- trim adhesives
 - spray
 - tube
 - anaerobic
 - activated
- fasteners and retainers
 - classification of bolts and nuts
 - grade of material
 - tensile strength
 - sizes and threads per inch
 - locking devices
 - torque specifications
 - drill and tap drill sizes
- clips and fastening methods
- floor coverings
- headliners
- vinyl tops
- convertible tops
- weather stripping

2.1.2 Explain the removal and replacement procedures for automotive trim hardware and use of tools. [3/0]

- latches
- lock cylinders
- handles
- roof racks
- hinges
- antennae
- grills
- seats
 - frames
 - tracks
- headliners
- weather stripping
- seating anchoring
- identify required tools
- damaged clip replacement
- fasteners

2.1.3 Describe the fundamentals of adhesives, fasteners and retainers used for mouldings, emblems, exterior trim, decals, and stripes.

[1/0]

- purpose, types, styles, applications
- trim adhesives (spray-tube type)
- clips, retainers, fasteners
- decals, graphics, pinstripes

2.1.4 Describe the removal and replacement procedures for mouldings, emblems and exterior trim decals, graphics and stripes.

[2/0]

- identify tools for removal of mouldings
- replacement of damaged clips
- decal stripe removal using heat, scraper and chemical
- replacement procedures for body side, windshield, wheel opening, mouldings
- graphic and decal replacement
 - dry method
 - water method
 - soap and water method
- woodgrain transfers

2.1.5 Perform manufacturers' recommended removal and replacement procedures for automotive trim hardware and materials.

[0/3]

- door, trunk, hood locks and latches
- lock cylinders
- latches
- door handles
- hinges
- roof racks
- grills
- seats
- tracks
- headliners
- weather stripping
- floor coverings

2.1.6 Perform manufacturers' removal and replacement procedures for mouldings, emblems, exterior trim, decals, graphics and stripes.

[0/3]

- using test unit
 - remove mouldings
 - replace clips as necessary
 - remove emblems
 - replace adhesive as needed for reinstallation
 - remove decals, graphics
 - solvents
 - heat and scraper
 - chemical spray
 - replace decals, stripes and graphics
 - water
 - soap and water

2.2- Preparation (Cleaning and Masking)

Cross-reference to Learning Outcomes:

7002.01, 7002.03, 7002.04, 7002.10, 7002.11, 7005.01

Duration: 9 Total Hours Theory: 6 hours Practical: 3 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of surface preparation prior to various topcoat applications.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 2.2.1 Describe the introductory information and fundamentals of preparation products.
- 2.2.2 Explain the preparation requirements for each variation of refinish materials.
- 2.2.3 Describe the final preparation requirements for each variation of topcoat material.
- 2.2.4 Perform assigned preparation required for various topcoat applications.

Learning Content:

2.2.1 Describe the introductory information and fundamentals of preparation products.
[2/0]

- purpose, composition and application of:
 - cleaning agents
 - degreaser
 - final wash
 - metal conditioner
 - masking materials
 - masking tapes
 - masking papers
 - spray mask
 - plastic wrap
 - paint strippers
 - mechanical
 - chemical

2.2.2 Explain the preparation requirements for each variation of refinish materials.
[2/0]

- refinishing vehicle complete
 - preliminary refinish steps
 - prewash
 - tacking
 - masking

2.2.3 Describe the final preparation requirements for each variation of topcoat material.
[2/0]

- cleaning
- masking
- undercoat application by wiping and spraying
- flash times
- coats of application

2.2.4 Perform assigned preparation required for various topcoat applications.
[0/3]

- cleaning
- masking

2.3- Paint Identification

Cross-reference to Learning Outcomes:

7002.04, 7003.01, 7007.03

Duration: 6 Total Hours Theory: 3 hours Practical: 3 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of automotive paint identification.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 2.3.1 Define the purpose and fundamentals of paint identification.
- 2.3.2 Perform automotive and paint manufacturers' procedures for locating automotive paint codes.
- 2.3.3 Identify type of previous paint coatings.

Learning Content:

2.3.1 Define the purpose and fundamentals of paint identification.

[3/0]

- purpose, types, and functions of topcoats
 - pigments
 - binders
 - solvents
 - enamel
 - lacquer
 - acrylic enamel
 - polyurethane
 - acrylic urethane enamel
 - acrylic lacquer
 - basecoat clearcoat
 - single stage and multi-stage
 - water base

2.3.2 Perform automotive and paint manufacturers' procedures for locating automotive paint codes.

[0/2]

- locate and record manufacturers' code
- breakdown paint codes
- reference codes to colour chips
- reference colour chips to colour formula
- VIN breakdown

2.3.3 Identify type of previous paint coatings.

[0/1]

- visual inspection
- sanding
- compounding
- solvent application
- heat application
- hardness

2.4 - Sanding

Cross-reference to Learning Outcomes:

7002.05, 7002.06, 7002.07, 7002.08, 7002.09, 7002.11, 7002.12, 7002.13

Duration: 12 Total Hours Theory: 6 hours Practical: 6 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the required preparation procedures for various undercoat applications.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 2.4.1 Describe the preparation procedures for various undercoat applications.
- 2.4.2 Identify the differences of preparation requirements for each type of refinish material and express the results of improper prep procedures.
- 2.4.3 Perform recommended procedures for sanding, putties, and fillers for refinishing.

Learning Content:

2.4.1 Describe the preparation procedures for various undercoat applications.
[3/0]

- cleaning
- sanding
 - grades
 - types
 - hand sanding
 - machine sanding
 - fresh paint
- sanding equipment
 - block
 - oscillating (dual action)
 - vibrating
 - sand blasting

2.4.2 Identify the differences of preparation requirements for each type of refinish material and express the results of improper prep procedures.
[3/0]

- primer
 - selections
 - applications
- sandpaper options
 - type
 - grit
- contour mapping
- die back
- gloss retention

2.4.3 Perform recommended procedures for sanding, putties, and fillers for refinishing.
[0/6]

- identify substrate
- types of sanding required
- remove imperfections
- feather edge
- hand sanding
 - wet / dry
- machine sanding
 - wet / dry / vacuum
- block
- oscillating (dual-action)
- vibrating
- (8" wheel) (circular sander)

- grit selection
- reasons
- performance
- guidelines
- feather edging
- specialty metals
- prepared surfaces

2.5- Spray Guns

Cross-reference to Learning Outcomes:

7001.05, 7003.06, 7003.10, 7004.02

Duration: 9 Total Hours Theory: 6 hours Practical: 3 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the application, construction and maintenance procedures for various types of automotive spray guns.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 2.5.1 Define the purpose types, function, applications of spray guns.
- 2.5.2 Describe the function, composition and construction of the major components of spray guns.
- 2.5.3 Perform manufacturers' maintenance procedures for spray guns of various types.

Learning Content:

2.5.1 Define the purpose types, function, applications of spray guns.
[4/0]

- suction (siphon) feed
- pressure feed
- gravity feed
- touch-up gun
- air brush
- reasons for development of H.V.L.P.
- H.V.L.P. (high volume low pressure)
- L.V.L.P. (low volume low pressure)
- plural component guns
- internal mix / external mix
- reduced pressure guns
- T.E. (transfer efficiency)
- air lines / hoses / sizes
- connections

2.5.2 Describe the function, composition and construction of the major components of spray guns.
[2/0]

- air caps
- fluid tips / fluid needles
- air volume control valve
- baffles
- spreader valve
- gun body
- seals, gaskets and packings

2.5.3 Perform manufacturers' maintenance procedures for spray guns of various types.
[0/3]

- back flushing
- exterior cleaning
- interior cleaning (manual and machine)
- polishing as required
- lubrication
- troubleshooting
- storage
- fluid hoses
- test spray equipment
- adjust spray equipment

2.6- Spray Gun Enhancement

Cross-reference to Learning Outcomes:

7001.05, 7003.06

Duration: 9 Total Hours Theory: 3 hours Practical: 6 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of troubleshooting and correcting spray gun problems.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 2.6.1 Explain the troubleshooting procedures for various types of spray guns and explain corrective measures.
- 2.6.2 Dismantle, inspect, repair, reassemble, and test spray guns of various types.
- 2.6.3 Demonstrate purpose and types of different spray coats.
- 2.6.4 Demonstrate gun-handling problems.

Learning Content:

2.6.1 Explain the troubleshooting procedures for various types of spray guns and explain corrective measures.

[3/0]

- suction, gravity and pressure feed and how they differ
- top heavy pattern
- centre heavy pattern
- bottom heavy pattern
- side heavy pattern
- right side banana pattern
- left side banana pattern
- split pattern
- air cap position
- sputtering
- fluid leaks
- fluid won't come out
- fluid won't stop
- air leaks

2.6.2 Dismantle, inspect, repair, reassemble, and test spray guns of various types.

[0/3]

- identification of gun components
 - air caps
 - pressure gauges
 - fluid tips
 - fluid needles
 - trigger
 - all volume control valve
 - baffles
 - fan adjustment valve
 - gun body
 - seals, gaskets, and packings
 - air and fluid passageways
 - maintenance of fluid hoses

2.6.3 Demonstrate purpose and types of different spray coats. [0/1]

- tack
- full wet coat
- mist
- dust
- shading or blending
- banding
- drop coat

2.6.4 Demonstrate gun-handling problems. [0/2]

- heeling
- arcing
- speed of stroke
- improper distance
- improper adjustment
- improper overlapping
- wasteful over spray
- triggering
- effects of air pressure

Automotive Painter

Number: 2

Title: Preparation

Duration: 60 Total Hours

Theory: 33 hours Practical: 27 hours

Prerequisites: Unit 1

Co-requisites: N/A

Evaluation:

The following evaluation structure is only a suggested format. Specific evaluation of theory and practical components of training varies due to the resource material and training aides utilized.

Theory Testing	30%
Practical Application Exercises	50%
Research Project	10%
Notebook and Organizational Skills	10%

Automotive Painter

Number: 3

Title: Applications (Undercoat)

Duration: 60 Total Hours

Theory: 28 hours Practical: 32 hours

Prerequisites: Unit 1, 2

Co-requisites: N/A

3.1- Undercoats (Primer and Primer Surfacer)

18 Total Hours Theory: 9 hours Practical: 9 hours

3.2- Corrosion Protection

12 Total Hours Theory: 8 hours Practical: 4 hours

3.3- Colour Matching

15 Total Hours Theory: 8 hours Practical: 7 hours

3.4- Colour Matching Application

15 Total Hours Theory: 3 hours Practical: 12 hours

3.1- Undercoats (Primer and Primer Surfacer)

Cross-reference to Learning Outcomes:

7002.03, 7002.04, 7002.12, 7002.13

Duration: 18 Total Hours Theory: 9 hours Practical: 9 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the purpose and application of automotive finish undercoats.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 3.1.1 Define the fundamentals, purpose, application and types of undercoats and protective coatings.
- 3.1.2 Explain the application procedures for undercoats and protective coatings.
- 3.1.3 Perform manufacturers' application procedures for undercoats and protective coatings.
- 3.1.4 Perform recommended procedures for applying glazing putties and fillers.

Learning Content:

3.1.1 Define the fundamentals, purpose, application and types of undercoats and protective coatings.

[6/0]

- composition
- reduction
- sanding
 - undercoats
 - primer-sealers
 - putties
 - fillers

3.1.2 Explain the application procedures for undercoats and protective coatings.

[3/0]

- review technical data sheets
- application
- flash times
- drying times
- clean-up equipment

3.1.3 Perform manufacturers' application procedures for undercoats and protective coatings.

[0/5]

- determine future topcoat
- mix materials
- application of materials (test applications)
 - drying times
 - equipment cleanup
- primers
 - etching
 - filler
 - epoxy
 - sealer

3.1.4 Perform recommended procedures for applying glazing putties and fillers.

[0/4]

- glazing putties
 - polyester
 - epoxy-resin based
 - lacquer (solvent based)
- spray fillers

3.2- Corrosion Protection

Cross-reference to Learning Outcomes:

7002.12, 7002.14

Duration: 12 Total Hours Theory: 8 hours Practical: 4 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the cause of corrosion, types and application of corrosion protection material.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 3.2.1 Define the main cause of corrosion.
- 3.2.2 Define the basic types of corrosion protection used on modern automobiles.
- 3.2.3 Define the environmental and atmospheric conditions that influence the rate of corrosion.
- 3.2.4 Define the different corrosion protection products used during repair procedures.
- 3.2.5 Define the application and fundamentals of body sealers and corrosion protection materials.
- 3.2.6 Perform manufacturers' application procedures for body sealers and corrosion protection materials.
- 3.2.7 Describe inspection of body panels assemblies with the prescribed service tools and equipment.

Learning Content:

3.2.1 Define the main cause of corrosion.

[2/0]

- exposed metal
- moisture (electrolyte)
- oxygen
- acid rain
- industrial fallout
- corrosive materials (acids)
- collision repairs (welding, etc.)
- moisture seepage
- drain holes
- insufficient protection
- welding damage

3.2.2 Define the basic types of corrosion protection used on modern automobiles.

[1/0]

- plating
 - galvanizing
 - zinc coating
- paint
- anit-corrosion compounds
 - petroleum-based compounds
 - wax-base

3.2.3 Define the environmental and atmospheric conditions that influence the rate of corrosion.

[1/0]

- moisture
- relative humidity
- temperature
- air pollution

3.2.4 Define the different corrosion protection products used during repair procedures.
[1/0]

- protective coatings
- primers
- anti-corrosion compounds
- body sealers
- seam sealers
- weld-through primers
- anti-rust agents
- rust converters

3.2.5 Define the application and fundamentals of body sealers and corrosion protection materials.
[2/0]

- seam
- sealers
 - brushable
 - medium body
 - heavy body
 - sprayable / two component
- corrosion protection materials
 - spraying
 - wiping
 - brushing

3.2.6 Perform manufacturers' application procedures for body sealers and corrosion protection materials.
[0/4]

- identify personal protection equipment
- application of body sealers and corrosion protection
 - hoods
 - fenders
 - doors
 - rockers
 - quarters
 - pillars
 - deck lids
 - floor pans

3.2.7 Describe inspection of body panels assemblies with the prescribed service tools and equipment.

[1/0]

- inspection and testing for:
 - corrosion damage
 - mil thickness

3.3- Colour Matching

Cross-reference to Learning Outcomes:

7003.05, 7004.01, 7004.02, 7004.03, 7007.03

Duration: 15 Total Hours Theory: 8 hours Practical: 7 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of automotive colour matching.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 3.3.1 Define the fundamentals of colour matching, formulae, tinters and reasons for colour mismatch.
- 3.3.2 Explain and perform the procedures for mixing and tinting paint.
- 3.3.3 Mix and adjust paints to achieve a blend-able finish with the prescribed service tools and equipment.
- 3.3.4 Perform the paint manufacturers' procedures for testing colours through the use of spray out cards.

Learning Content:

3.3.1 Define the fundamentals of colour matching, formulae, tinters and reasons for colour mismatch.

[4/0]

- how light produces colour
- light source
 - metamerism
 - daylight, incandescent, fluorescent
- primary colours
- various manufacturers' characteristics / descriptions
 - colour harmony
 - colour blindness
- Muncel, colour theory
 - value, hue, chroma

3.3.2 Explain and perform the procedures for mixing and tinting paint.

[4/0]

- formulation of paint colours and mixing procedures
 - ratings
 - standard O.E.M. colour / and variants
 - approximate
 - low hiding
 - tinters involved to achieve a colour
- variation of colour
 - how to darken
 - how to lighten
- application variables
 - gun distance
 - air pressure
 - gun set-up
 - mixing equipment
 - solvent change
- kill colour cast
- saturation
- desaturation

3.3.3 Mix and adjust paints to achieve a blend-able finish with the prescribed service tools and equipment.

[0/3]

- mix colour according to formula
- spray out test card / let down panel
- compare to standard
- evaluate colour
- adjust colour
- spray out test card
- compare to standard
- record adjustment

3.3.4 Perform the paint manufacturers' procedures for testing colours through the use of spray out cards.

[0/4]

- apply correct ground coat if necessary
- spray out test card
- clear test card
- compare card to standard
- adjust colour
- compare to standard
- vehicle spot or complete refinish
- spectrophotometers

3.4- Colour Matching Application

Cross-reference to Learning Outcomes:

7003.04, 7003.05, 7003.06, 7004.01, 7004.02, 7004.03

Duration: 15 Total Hours Theory: 3 hours Practical: 12 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the variables that effect automotive colour matching.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

3.4.1 Define application errors for colour matching.

3.4.2 Mix, formulate and reformulate paints to achieve a blend-able finished product.

Learning Content:

3.4.1 Define application errors for colour matching. [3/0]

- wrong colour
- metamerism
- flip-flop
- spray patterns
- gun distance
- under / over catalyzing
- under / over reducing
- drying
- reducer selection
- hardener selection
- air pressure

3.4.2 Mix, formulate and reformulate paints to achieve a blend-able finished product. [0/12]

- mix colour according to formula
- spray out test card
- let down panel
- compare to standard
- evaluate colour
- adjust colour
- spray out test card
- compare to standard
- record adjustments
- spray out test card
- apply correct ground coat if necessary
 - clear test card
 - compare card to standard
- viewing of sample
 - head on
 - near-spec
 - side-tone
- vehicle spot or complete refinish
- adjusting lightness / darkness
 - shop conditions
 - temperature
 - humidity
 - ventilation
- spraying techniques
 - gun distance
 - gun speed
 - flash time

- mist coats
- solvent usage
- types
- amount of reduction
- retarder

Automotive Painter

Number: 3

Title: Applications (Undercoat)

Duration: 60 Total Hours

Theory: 28 hours Practical: 32 hours

Prerequisites: Unit 1, 2

Co-requisites: N/A

Evaluation:

The following evaluation structure is only a suggested format. Specific evaluation of theory and practical components of training varies due to the resource material and training aides utilized.

Theory Testing	30%
Practical Application Exercises	50%
Research Project	10%
Notebook and Organizational Skills	10%

Automotive Painter

Number:	4
Title:	Applications (Topcoat)
Duration:	60 Total Hours
	Theory: 27 hours Practical: 33 hours
Prerequisites:	Unit 1, 2, 3
Co-requisites:	N/A

4.1-	Top Coat Application, Spot and Panel Repair		
	15 Total Hours	Theory: 6 hours	Practical: 9 hours
4.2-	Top Coat Application, Complete Refinish		
	18 Total Hours	Theory: 6 hours	Practical: 12 hours
4.3-	Plastic Refinish		
	12 Total Hours	Theory: 6 hours	Practical: 6 hours
4.4-	Detailing		
	9 Total Hours	Theory: 6 hours	Practical: 3 hours
4.5-	Masking Material and Over-Spray Removal		
	6 Total Hours	Theory: 3 hours	Practical: 3 hours

4.1- Top Coat Application, Spot and Panel Repair

Cross-reference to Learning Outcomes:

7003.04, 7003.05, 7003.06, 7004.01, 7004.02, 7004.03

Duration: 15 Total Hours Theory: 6 hours Practical: 9 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of vehicle top coat application involving spot repairs

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 4.1.1 Explain the procedures for blending spot repairs.
- 4.1.2 Describe procedure for necessary repairs.
- 4.1.3 Perform the product manufacturers' procedures for blending spot repairs.
- 4.1.4 Inspect an automotive finish to determine types of problems within the paint and recommend the correct repair procedures.

Learning Content:

4.1.1 Explain the procedures for blending spot repairs.

[3/0]

- sanding procedures and products
 - wet or dry
 - hand or mechanical
- primer application and types used for colour match
- primer sanding
- vehicle masking
- blending techniques
- spraying stages
- flash and drying times
- compounding

4.1.2 Describe procedure for necessary repairs.

[3/0]

- reapply the coat
- sand out, resurface and top coat
- remove surface material to primer
- remove to bare metal
- rub out with rubbing compound
- ultra-fine sand papers
- glazes
- polishing

4.1.3 Perform the product manufacturers' procedures for blending spot repairs.

[0/6]

- mix paint
- prepare unit for blending
 - cleaning
 - sanding
 - priming
 - masking
- spraying
- cleanup
- detailing

4.1.4 Inspect an automotive finish to determine types of problems within the paint and recommend the correct repair procedures.

[0/3]

- acid spotting
- blotches
- contour mapping
- dry spray
- feather edge splitting
- fish eyes
- lifting
- mottling
- pin holing
- rust under finish
- sand scratch swelling
- solvent popping
- wrinkles
- blistering
- blushing
- dirt
- low gloss
- filler bleed-through
- full finish
- microchecking
- orange peel
- runs, sags
- shrinking
- water spots
- final inspection
 - film thickness
 - coverage
 - clear application
 - solvent blends
 - dry edge
 - runs

4.2- Top Coat Application, Complete Refinish

Cross-reference to Learning Outcomes:

7003.02, 7003.03, 7003.04, 7003.07, 7003.09, 7003.10, 7007.01

Duration: 18 Total Hours Theory: 6 hours Practical: 12 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of vehicle top coat application and complete refinishing.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 4.2.1 Define the introductory information and fundamentals of spraying techniques.
- 4.2.2 Explain the preparation procedures for complete vehicle refinish of various topcoats.
- 4.2.3 Perform manufacturers' refinish procedures for complete refinishing.
- 4.2.4 Inspect the vehicle finish for coverage.

Learning Content:

4.2.1 Define the introductory information and fundamentals of spraying techniques.
[3/0]

- reducer, hardeners and additives
- gun adjustments / motion
- routing (spray plan)
 - single-stage / multi-stage

4.2.2 Explain the preparation procedures for complete vehicle refinish of various topcoats.
[3/0]

- cleaning
- sanding
- masking
- undercoat application by wiping and spraying
- flash times
- coats of application

4.2.3 Perform manufacturers' refinish procedures for complete refinishing.
[0/9]

- identify personal protection equipment
- blow off
- preclean and tack vehicle
- prepare spray booth
- mask vehicle
- prepare paint
- test spray equipment
- control drying time
- clean up equipment

4.2.4 Inspect the vehicle finish for coverage.
[0/3]

- insufficient film thickness
- transparent colours
- bleeding-through
- clear coat film build
 - OEM finish
 - after market finish
- mil gauge procedures
 - types of mil gauges / pencil / digital /ultra sound

4.3- Plastic Refinish

Cross-reference to Learning Outcomes:

7003.10, 7005.01, 7005.02, 7005.03

Duration: 12 Total Hours Theory: 6 hours Practical: 6 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of spot and complete refinishing of automotive plastics.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 4.3.1 Define the purpose and fundamentals of refinishing automotive plastics.
- 4.3.2 Explain the repair procedures for spot and complete panel refinishing on rigid and flexible automotive plastics.
- 4.3.3 Perform automotive plastic repairs and refinish procedures.
- 4.3.4 Perform manufacturers' spot and complete refinishing procedures for rigid and flexible plastics.

Learning Content:

4.3.1 Define the purpose and fundamentals of refinishing automotive plastics.
[3/0]

- plastic usage and identification
- thermoset
- thermoplastic
- fibreglass
- SMC (sheet moulded compound)
- R.R.I.M. (Reinforced Reaction Injection Molding)
- plastics' reaction to solvents and heat
- absorption
- softening
- destruction
- primer and paint compatibility
- specialty products and effects
- matting agents
- primers
- flex agents
- adhesion promoter
- identifying types
- manufacturers' guides
- heat
- solvents
- density

4.3.2 Explain the repair procedures for spot and complete panel refinishing on rigid and flexible automotive plastics.
[3/0]

- minor repairs
- feathering
- fillers
- sanding procedures
- adhesion promoters
- flex agents
- primers
- complete panel refinishing
- spot or partial panel refinishing
- drying times

4.3.3 Perform automotive plastic repairs and refinish procedures. [0/3]

- identify personal protection equipment
- minor repairs of scratches and gouges
- cleaning
- block sanding
- adhesion promoters
- primer
- refinish
- flex additives

4.3.4 Perform manufacturers' spot and complete refinishing procedures for rigid and flexible plastics. [0/3]

- pre-clean and tack
- spraying
- flexible finish (Elastomeric)
- control drying time
- clean up equipment
- interior parts
- identify parts and substrates
- colour
- gloss levels

4.4- Detailing

Cross-reference to Learning Outcomes:

7006.03, 7006.04, 7006.05, 7006.06, 7006.07

Duration: 9 Total Hours Theory: 6 hours Practical: 3 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of detailing the exterior and interior of a vehicle.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 4.4.1 Define the purpose and fundamentals of vehicle detailing.
- 4.4.2 Explain the procedures for removal of common contaminants from interiors and exteriors.
- 4.4.3 Inspect and identify various types of contaminants on and in automobiles.
- 4.4.4 Perform manufacturers' detailing procedures on various types of finishes (exterior) and materials or fabrics (interior).

Learning Content:

4.4.1 Define the purpose and fundamentals of vehicle detailing.
[2/0]

- identify cleaning procedures for the following conditions:
 - light scratches
 - dirt in paint
 - water stains
 - tar / road film
 - stains on interior (gum, blood, urine, grease)
 - stains on exterior (tar, road film)
 - vinyl top maintenance
 - soiled carpet
 - paint over spray

4.4.2 Explain the procedures for removal of common contaminants from interiors and exteriors.
[2/0]

- washing
- compounding / polishing
- wiping with solvents
- waxing
- vacuuming
- shampooing
- treating

4.4.3 Inspect and identify various types of contaminants on and in automobiles.
[2/0]

- using test unit, wash exterior with soap and water
- locate and record all contaminants on interior and exterior

4.4.4 Perform manufacturers' detailing procedures on various types of finishes (exterior) and materials or fabrics (interior).
[0/3]

- remove grease or tar with solvent
- wash with soap and water
- chamois
- compound light scratches and over spray
- polish as required (to remove road film)
- clean glass
- vacuum interior
- wipe down interior

4.5- Masking Material and Over-Spray Removal

Cross-reference to Learning Outcomes:

7003.08, 7006.01, 7006.02, 7006.07

Duration: 6 Total Hours Theory: 3 hours Practical: 3 hours

General Learning Outcome:

Upon successful completion, the apprentice is able to demonstrate a working knowledge of the removal of masking material and overspray.

Learning Outcomes:

Upon successful completion, the apprentice is able to:

- 4.5.1 Describe the recommended methods of removing masking material and over spray.
- 4.5.2 Perform final vehicle check and clean up.

Learning Content:

4.5.1 Describe the recommended methods of removing masking material and over spray.

[3/0]

- masking tape removal
- time
- temperature
- direction of pull
- liquid masking / wash off
- test over spray removal method
- test removal method
- solvents
- compounds
- fine steel wool
- clay

4.5.2 Perform final vehicle check and clean up.

[0/3]

- wash
- vacuum
- clean windows
- clean tires
- clean heating ducts
- reset clocks / radio
- check lights
- paint care instructions
- blackout wheel wells
- check over spray / residue on door trims
- wipe down interior
- clean wiper blades

Automotive Painter

Number: 4

Title: Applications (Topcoat)

Duration: 60 Total Hours

Theory: 27 hours Practical: 33 hours

Prerequisites: Unit 1, 2, 3

Co-requisites: N/A

Evaluation:

The following evaluation structure is only a suggested format. Specific evaluation of theory and practical components of training varies due to the resource material and training aides utilized.

Theory Testing	30%
Practical Application Exercises	50%
Research Project	10%
Notebook and Organizational Skills	10%

Reference Material:

Complete Automotive Painting

By Robert Scharff and Richard J. Paquette.

Published by Delmar Publishers Inc.

ISBN# 0-8273-3582-2

I-Car Professional Automotive

Collision Repair 2nd Edition

By James E. Duffy

Published by Delmar Publishers Inc.

ISBN# 0-7608-1398-3

Motor Auto Body Repair, 3rd Edition

By Robert Scharff and James E. Duffy

Published by Delmar Publishers Inc.

ISBN # 0-8273-6858-5

The Principles of Auto Body Repairing and Repainting, 5th Edition

By A.G. Deroche

Published by Prentice Hall

ISBN 0-13-678053-9